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## VHM Bohrer

### Solid Carbide Drills





## **DAS UNTERNEHMEN**

Zerspanungswerkzeuge in höchster Qualität und Präzision – dafür steht die TAM-Firmengruppe mit der Marke GOLDBERG®. 1993 mit Firmensitz in Deutschland gegründet, hat sich die Marke – auch auf dem internationalen Markt – hervorragend etabliert. Modernste Zerspanungswerkzeuge für Dreh-, Fräs- und Bohranwendungen für die metallverarbeitende Industrie umfassen unser Produktsortiment. Das umfangreiche Lieferprogramm erlaubt es uns, höchst flexibel auf Ihre spezifischen Wünsche einzugehen. Dabei stellen wir uns jeder neuen Herausforderung und meistern diese mit Hilfe neuester Technologie. Wir sind mit den Anforderungen in der metallverarbeitenden Industrie bestens vertraut. Sie als Kunde profitieren von einem hohen Maß an Fachkompetenz, das kontinuierlich in alle

Lösungen einfließt – konsequent verstärkt durch ein internes Qualitätskontrollsystem, das eine Performance für höchste Anforderungen gewährleistet. Ergebnis unserer innovativen Technik sind Produkte, die sich durch präzise Verarbeitung, eine einzigartige Verschleißfestigkeit und damit hervorragende Standzeiten Ihrer Werkzeuge

## **MODERNSTE ZERSPANUNGSWERKZEUGE FÜR DREH-, FRÄS- UND BOHRANWENDUNGEN IN HÖCHSTER QUALITÄT UND PRÄZISION**

auszeichnen. Ihr Vorteil: ein langjähriger Einsatz, der zu geringen Werkzeugkosten und einer höheren Auslastung Ihrer Produktion führt.

## **THE COMPANY**

Cutting tools of the highest quality and precision – this is what the TAM group stands for with its brand GOLDBERG®. Founded in 1993 with headquarters in Germany, the brand has established itself excellently – also on the international market. Our product range comprises state-of-the-art cutting tools for turning, milling and drilling applications for the metalworking industry. The extensive delivery program allows us to respond to your specific requirements in a highly flexible manner. In doing so, we rise to every new challenge and master it with the help of the latest technology. As our customer, you benefit from a high level of expertise that is continuously incorporated

into all our solutions – consistently reinforced by an internal quality control system that ensures performance to meet the highest standards. The result of our innovative technology are products

## **STATE-OF-THE-ART CUTTING TOOLS FOR TURNING, MILLING AND DRILLING APPLICATIONS IN HIGHEST QUALITY AND PRECISION**

that are characterized by precise processing, unique wear resistance and thus excellent tool life. Your advantage: many years of use, resulting in low tool costs and higher utilization of your production.



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|                           |                                  |                                    |                             |                           |                        |                                     | Stahl / Steel           | Edelstahl / Stainless steel | Guss / Cast iron | NE-Metalle / Aluminium | Hochwarmfeste Leg. / Super alloys | Gehärtete Stähle / Hardened steel |              |
|                           |                                  |                                    |                             |                           |                        |                                     | P                       | M                           | K                | N                      | S                                 | H                                 |              |
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| <b>FD12IK</b>             | VHM-Bohrer / Solid Carbide Drill | 5                                  | ✓                           | 140°                      | 30°                    | TiAlN                               | 1 - 20                  | ●                           | ●                | ●                      | ●                                 | ●                                 | 22           |
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| <b>FD15IK</b>             | VHM-Bohrer / Solid Carbide Drill | 12                                 | ✓                           | 140°                      | 30°                    | TiAlN                               | 3 - 20                  | ●                           | ●                | ●                      | ●                                 |                                   | 33           |
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| <b>SD10IK</b>             | VHM-Bohrer / Solid Carbide Drill | 3                                  | ✓                           | 140°                      | 30°                    | AlCr-basiert                        | 3 - 20                  |                             | ●                | ●                      | ●                                 |                                   | 46           |
| <b>SD12IK</b>             | VHM-Bohrer / Solid Carbide Drill | 5                                  | ✓                           | 140°                      | 30°                    | AlCr-basiert                        | 3 - 20                  |                             | ●                | ●                      | ●                                 |                                   | 51           |

\*FD10 Bohrer bereits ab Ø 0,1mm auf Anfrage erhältlich; Spitzenwinkel 118°  
Bohrdurchmesser Ø 0,1mm - Ø 1mm mit 0,01mm Abstufung





# FireDrill

## FD10 / FD10IK

### 3xD

VHM-Hochleistungsbohrer

Für alle gängigen Werkstoffe (von Stahl bis Superlegierungen) /

Solid carbide high-performance drills

For all common materials (from steel to superalloys)



## FireDrill FD10

## VHM-Bohrer 3xD ohne IK / Solid carbide drill 3xD without internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10-3A010-30                       | -                  | 1,0                           | 3,0 | 4  | 38 | 2 | 0,03                                                                        | 0,02 | 0,01 | 0,02 | 0,01 | 0,03 | 0,02 | 0,03 | 0,03 | 0,01 | 0,01 | -    | -    |
| FD10-3A011-30                       | -                  | 1,1                           | 3,0 | 4  | 38 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A012-30                       | -                  | 1,2                           | 3,0 | 4  | 38 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A013-30                       | -                  | 1,3                           | 3,0 | 4  | 38 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A014-30                       | -                  | 1,4                           | 3,0 | 5  | 38 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A015-30                       | -                  | 1,5                           | 3,0 | 7  | 50 | 2 | 0,03                                                                        | 0,03 | 0,02 | 0,02 | 0,04 | 0,03 | 0,04 | 0,04 | 0,01 | 0,01 | -    | -    |      |
| FD10-3A016-30                       | -                  | 1,6                           | 3,0 | 7  | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A017-30                       | -                  | 1,7                           | 3,0 | 9  | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A018-30                       | -                  | 1,8                           | 3,0 | 9  | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A019-30                       | -                  | 1,9                           | 3,0 | 9  | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A020-30                       | -                  | 2,0                           | 3,0 | 10 | 50 | 2 | 0,05                                                                        | 0,04 | 0,03 | 0,03 | 0,05 | 0,04 | 0,05 | 0,05 | 0,02 | 0,02 | -    | -    |      |
| FD10-3A021-30                       | -                  | 2,1                           | 3,0 | 10 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A022-30                       | -                  | 2,2                           | 3,0 | 10 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A023-30                       | -                  | 2,3                           | 3,0 | 10 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A024-30                       | -                  | 2,4                           | 3,0 | 10 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A025-30                       | -                  | 2,5                           | 3,0 | 14 | 50 | 2 | 0,06                                                                        | 0,05 | 0,05 | 0,05 | 0,04 | 0,06 | 0,06 | 0,07 | 0,07 | 0,04 | 0,04 | -    | -    |
| FD10-3A026-30                       | -                  | 2,6                           | 3,0 | 14 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A027-30                       | -                  | 2,7                           | 3,0 | 14 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A028-30                       | -                  | 2,8                           | 3,0 | 14 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A029-30                       | -                  | 2,9                           | 3,0 | 14 | 50 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A030-30                       | FD10-3B030-30      | 3,0                           | 6,0 | 20 | 62 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD10-3A031-30                       | FD10-3B031-30      | 3,1                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A032-30                       | FD10-3B032-30      | 3,2                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A033-30                       | FD10-3B033-30      | 3,3                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A034-30                       | FD10-3B034-30      | 3,4                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A035-30                       | FD10-3B035-30      | 3,5                           | 6,0 | 20 | 62 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD10-3A036-30                       | FD10-3B036-30      | 3,6                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A037-30                       | FD10-3B037-30      | 3,7                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A038-30                       | FD10-3B038-30      | 3,8                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A039-30                       | FD10-3B039-30      | 3,9                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A040-30                       | FD10-3B040-30      | 4,0                           | 6,0 | 24 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD10-3A041-30                       | FD10-3B041-30      | 4,1                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A042-30                       | FD10-3B042-30      | 4,2                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A043-30                       | FD10-3B043-30      | 4,3                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A044-30                       | FD10-3B044-30      | 4,4                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD10

## VHM-Bohrer 3xD ohne IK / Solid carbide drill 3xD without internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10-3A045-30                       | FD10-3B045-30      | 4,5                           | 6,0 | 24 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD10-3A046-30                       | FD10-3B046-30      | 4,6                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A0465-30                      | FD10-3B0465-30     | 4,65                          | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A047-30                       | FD10-3B047-30      | 4,7                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A048-30                       | FD10-3B048-30      | 4,8                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A049-30                       | FD10-3B049-30      | 4,9                           | 6,0 | 28 | 66 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| FD10-3A050-30                       | FD10-3B050-30      | 5,0                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A051-30                       | FD10-3B051-30      | 5,1                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A052-30                       | FD10-3B052-30      | 5,2                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A053-30                       | FD10-3B053-30      | 5,3                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A054-30                       | FD10-3B054-30      | 5,4                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A055-30                       | FD10-3B055-30      | 5,5                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A0555-30                      | FD10-3B0555-30     | 5,55                          | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A056-30                       | FD10-3B056-30      | 5,6                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A057-30                       | FD10-3B057-30      | 5,7                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A058-30                       | FD10-3B058-30      | 5,8                           | 6,0 | 28 | 66 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD10-3A059-30                       | FD10-3B059-30      | 5,9                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A060-30                       | FD10-3B060-30      | 6,0                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A061-30                       | FD10-3B061-30      | 6,1                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A062-30                       | FD10-3B062-30      | 6,2                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A063-30                       | FD10-3B063-30      | 6,3                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A064-30                       | FD10-3B064-30      | 6,4                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A065-30                       | FD10-3B065-30      | 6,5                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A066-30                       | FD10-3B066-30      | 6,6                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A067-30                       | FD10-3B067-30      | 6,7                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A068-30                       | FD10-3B068-30      | 6,8                           | 8,0 | 34 | 79 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD10-3A069-30                       | FD10-3B069-30      | 6,9                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A070-30                       | FD10-3B070-30      | 7,0                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A071-30                       | FD10-3B071-30      | 7,1                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A072-30                       | FD10-3B072-30      | 7,2                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A073-30                       | FD10-3B073-30      | 7,3                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A074-30                       | FD10-3B074-30      | 7,4                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A075-30                       | FD10-3B075-30      | 7,5                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A076-30                       | FD10-3B076-30      | 7,6                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A077-30                       | FD10-3B077-30      | 7,7                           | 8,0 | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

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## FireDrill FD10

## VHM-Bohrer 3xD ohne IK / Solid carbide drill 3xD without internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
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| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10-3A078-30                       | FD10-3B078-30      | 7,8                           | 8,0  | 41 | 79  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD10-3A079-30                       | FD10-3B079-30      | 7,9                           | 8,0  | 41 | 79  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A080-30                       | FD10-3B080-30      | 8,0                           | 8,0  | 41 | 79  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A081-30                       | FD10-3B081-30      | 8,1                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A082-30                       | FD10-3B082-30      | 8,2                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A083-30                       | FD10-3B083-30      | 8,3                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A084-30                       | FD10-3B084-30      | 8,4                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A085-30                       | FD10-3B085-30      | 8,5                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A086-30                       | FD10-3B086-30      | 8,6                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A087-30                       | FD10-3B087-30      | 8,7                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A088-30                       | FD10-3B088-30      | 8,8                           | 10,0 | 47 | 89  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD10-3A089-30                       | FD10-3B089-30      | 8,9                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A090-30                       | FD10-3B090-30      | 9,0                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A091-30                       | FD10-3B091-30      | 9,1                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A092-30                       | FD10-3B092-30      | 9,2                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A093-30                       | FD10-3B093-30      | 9,3                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A094-30                       | FD10-3B094-30      | 9,4                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A095-30                       | FD10-3B095-30      | 9,5                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A096-30                       | FD10-3B096-30      | 9,6                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A097-30                       | FD10-3B097-30      | 9,7                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A098-30                       | FD10-3B098-30      | 9,8                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A099-30                       | FD10-3B099-30      | 9,9                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A100-30                       | FD10-3B100-30      | 10,0                          | 10,0 | 47 | 89  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD10-3A101-30                       | FD10-3B101-30      | 10,1                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A102-30                       | FD10-3B102-30      | 10,2                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A103-30                       | FD10-3B103-30      | 10,3                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A104-30                       | FD10-3B104-30      | 10,4                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A105-30                       | FD10-3B105-30      | 10,5                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A106-30                       | FD10-3B106-30      | 10,6                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A107-30                       | FD10-3B107-30      | 10,7                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A108-30                       | FD10-3B108-30      | 10,8                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A109-30                       | FD10-3B109-30      | 10,9                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A110-30                       | FD10-3B110-30      | 11,0                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A111-30                       | FD10-3B111-30      | 11,1                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A112-30                       | FD10-3B112-30      | 11,2                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD10

## VHM-Bohrer 3xD ohne IK / Solid carbide drill 3xD without internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10-3A113-30                       | FD10-3B113-30      | 11,3                          | 12,0 | 55 | 102 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD10-3A114-30                       | FD10-3B114-30      | 11,4                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A115-30                       | FD10-3B115-30      | 11,5                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A116-30                       | FD10-3B116-30      | 11,6                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A117-30                       | FD10-3B117-30      | 11,7                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A118-30                       | FD10-3B118-30      | 11,8                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A119-30                       | FD10-3B119-30      | 11,9                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A120-30                       | FD10-3B120-30      | 12,0                          | 12,0 | 55 | 102 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD10-3A121-30                       | FD10-3B121-30      | 12,1                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A122-30                       | FD10-3B122-30      | 12,2                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A123-30                       | FD10-3B123-30      | 12,3                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A124-30                       | FD10-3B124-30      | 12,4                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A125-30                       | FD10-3B125-30      | 12,5                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A126-30                       | FD10-3B126-30      | 12,6                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A127-30                       | FD10-3B127-30      | 12,7                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A128-30                       | FD10-3B128-30      | 12,8                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A129-30                       | FD10-3B129-30      | 12,9                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A130-30                       | FD10-3B130-30      | 13,0                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A131-30                       | FD10-3B131-30      | 13,1                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A132-30                       | FD10-3B132-30      | 13,2                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A133-30                       | FD10-3B133-30      | 13,3                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A134-30                       | FD10-3B134-30      | 13,4                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A135-30                       | FD10-3B135-30      | 13,5                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A136-30                       | FD10-3B136-30      | 13,6                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A137-30                       | FD10-3B137-30      | 13,7                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A138-30                       | FD10-3B138-30      | 13,8                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A139-30                       | FD10-3B139-30      | 13,9                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A140-30                       | FD10-3B140-30      | 14,0                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A141-30                       | FD10-3B141-30      | 14,1                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A142-30                       | FD10-3B142-30      | 14,2                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A143-30                       | FD10-3B143-30      | 14,3                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A144-30                       | FD10-3B144-30      | 14,4                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A145-30                       | FD10-3B145-30      | 14,5                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A146-30                       | FD10-3B146-30      | 14,6                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A147-30                       | FD10-3B147-30      | 14,7                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



## FireDrill FD10

## VHM-Bohrer 3xD ohne IK / Solid carbide drill 3xD without internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10-3A148-30                       | FD10-3B148-30      | 14,8                          | 16,0 | 65 | 115 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD10-3A149-30                       | FD10-3B149-30      | 14,9                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A150-30                       | FD10-3B150-30      | 15,0                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A151-30                       | FD10-3B151-30      | 15,1                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A152-30                       | FD10-3B152-30      | 15,2                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A153-30                       | FD10-3B153-30      | 15,3                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A154-30                       | FD10-3B154-30      | 15,4                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A155-30                       | FD10-3B155-30      | 15,5                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A156-30                       | FD10-3B156-30      | 15,6                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A157-30                       | FD10-3B157-30      | 15,7                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A158-30                       | FD10-3B158-30      | 15,8                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A159-30                       | FD10-3B159-30      | 15,9                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A160-30                       | FD10-3B160-30      | 16,0                          | 16,0 | 65 | 115 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD10-3A165-30                       | FD10-3B165-30      | 16,5                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A167-30                       | FD10-3B167-30      | 16,7                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A169-30                       | FD10-3B169-30      | 16,9                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A170-30                       | FD10-3B170-30      | 17,0                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A175-30                       | FD10-3B175-30      | 17,5                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A177-30                       | FD10-3B177-30      | 17,7                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A179-30                       | FD10-3B179-30      | 17,9                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A180-30                       | FD10-3B180-30      | 18,0                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A185-30                       | FD10-3B185-30      | 18,5                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A187-30                       | FD10-3B187-30      | 18,7                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A189-30                       | FD10-3B189-30      | 18,9                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A190-30                       | FD10-3B190-30      | 19,0                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A195-30                       | FD10-3B195-30      | 19,5                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A197-30                       | FD10-3B197-30      | 19,7                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A199-30                       | FD10-3B199-30      | 19,9                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-3A200-30                       | FD10-3B200-30      | 20,0                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

**FireDrill FD10****VHM-Bohrer 3xD ohne IK / Solid carbide drill 3xD without internal coolant**

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN


**Werkstoffgruppen und Schnittgeschwindigkeiten /**  
**Material groups and cutting speed**

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed |      |      |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------|------|------|
|                                  |                                                                             |                                                                |                                   | min.                                        | opt. | max. |
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                                          | < 230                             | 100                                         | 110  | 120  |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                                         | < 350                             | 80                                          | 90   | 100  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                                         | < 380                             | 60                                          | 70   | 80   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                                          | < 220                             | 40                                          | 50   | 60   |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                                          | < 240                             | 40                                          | 50   | 60   |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                              | < 280                             | 180                                         | 200  | 220  |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                              | < 320                             | 140                                         | 160  | 180  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                                          | < 110                             | -                                           | -    | -    |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                                          | < 130                             | -                                           | -    | -    |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 20                                          | 30   | 40   |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                                         | < 400                             | 30                                          | 40   | 50   |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | < 54 HRC                          | 30                                          | 40   | 50   |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | 52-60 HRC                         | 20                                          | 25   | 30   |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | > 58 HRC                          | -                                           | -    | -    |
| G                                | Graphit / Graphite                                                          | -                                                              | -                                 | -                                           | -    | -    |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD10IK



## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10IK-3A030-30                     | FD10IK-3B030-30    | 3,0                           | 6,0 | 20 | 62 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD10IK-3A031-30                     | FD10IK-3B031-30    | 3,1                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A032-30                     | FD10IK-3B032-30    | 3,2                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A033-30                     | FD10IK-3B033-30    | 3,3                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A034-30                     | FD10IK-3B034-30    | 3,4                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A035-30                     | FD10IK-3B035-30    | 3,5                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A036-30                     | FD10IK-3B036-30    | 3,6                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A037-30                     | FD10IK-3B037-30    | 3,7                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A038-30                     | FD10IK-3B038-30    | 3,8                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A039-30                     | FD10IK-3B039-30    | 3,9                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A040-30                     | FD10IK-3B040-30    | 4,0                           | 6,0 | 24 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD10IK-3A041-30                     | FD10IK-3B041-30    | 4,1                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A042-30                     | FD10IK-3B042-30    | 4,2                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A043-30                     | FD10IK-3B043-30    | 4,3                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A044-30                     | FD10IK-3B044-30    | 4,4                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A045-30                     | FD10IK-3B045-30    | 4,5                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A046-30                     | FD10IK-3B046-30    | 4,6                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A0465-30                    | FD10IK-3B0465-30   | 4,65                          | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A047-30                     | FD10IK-3B047-30    | 4,7                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A048-30                     | FD10IK-3B048-30    | 4,8                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A049-30                     | FD10IK-3B049-30    | 4,9                           | 6,0 | 28 | 66 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| FD10IK-3A050-30                     | FD10IK-3B050-30    | 5,0                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A051-30                     | FD10IK-3B051-30    | 5,1                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A052-30                     | FD10IK-3B052-30    | 5,2                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A053-30                     | FD10IK-3B053-30    | 5,3                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A054-30                     | FD10IK-3B054-30    | 5,4                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A055-30                     | FD10IK-3B055-30    | 5,5                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A0555-30                    | FD10IK-3B0555-30   | 5,55                          | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A056-30                     | FD10IK-3B056-30    | 5,6                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A057-30                     | FD10IK-3B057-30    | 5,7                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A058-30                     | FD10IK-3B058-30    | 5,8                           | 6,0 | 28 | 66 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD10IK-3A059-30                     | FD10IK-3B059-30    | 5,9                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A060-30                     | FD10IK-3B060-30    | 6,0                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A061-30                     | FD10IK-3B061-30    | 6,1                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A062-30                     | FD10IK-3B062-30    | 6,2                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD10IK



## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10IK-3A063-30                     | FD10IK-3B063-30    | 63                            | 8,0  | 34 | 79 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD10IK-3A064-30                     | FD10IK-3B064-30    | 64                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A065-30                     | FD10IK-3B065-30    | 65                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A066-30                     | FD10IK-3B066-30    | 66                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A067-30                     | FD10IK-3B067-30    | 67                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A068-30                     | FD10IK-3B068-30    | 68                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A069-30                     | FD10IK-3B069-30    | 69                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A070-30                     | FD10IK-3B070-30    | 70                            | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A071-30                     | FD10IK-3B071-30    | 71                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A072-30                     | FD10IK-3B072-30    | 72                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A073-30                     | FD10IK-3B073-30    | 73                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A074-30                     | FD10IK-3B074-30    | 74                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A075-30                     | FD10IK-3B075-30    | 75                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A076-30                     | FD10IK-3B076-30    | 76                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A077-30                     | FD10IK-3B077-30    | 77                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A078-30                     | FD10IK-3B078-30    | 78                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A079-30                     | FD10IK-3B079-30    | 79                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A080-30                     | FD10IK-3B080-30    | 80                            | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A081-30                     | FD10IK-3B081-30    | 81                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A082-30                     | FD10IK-3B082-30    | 82                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A083-30                     | FD10IK-3B083-30    | 83                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A084-30                     | FD10IK-3B084-30    | 84                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A085-30                     | FD10IK-3B085-30    | 85                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A086-30                     | FD10IK-3B086-30    | 86                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A087-30                     | FD10IK-3B087-30    | 87                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A088-30                     | FD10IK-3B088-30    | 88                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A089-30                     | FD10IK-3B089-30    | 89                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A090-30                     | FD10IK-3B090-30    | 90                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A091-30                     | FD10IK-3B091-30    | 91                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A092-30                     | FD10IK-3B092-30    | 92                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A093-30                     | FD10IK-3B093-30    | 93                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A094-30                     | FD10IK-3B094-30    | 94                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A095-30                     | FD10IK-3B095-30    | 95                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A096-30                     | FD10IK-3B096-30    | 96                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A097-30                     | FD10IK-3B097-30    | 97                            | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
|                                     |                    |                               |      |    |    |   | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD10IK



## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10IK-3A098-30                     | FD10IK-3B098-30    | 9,8                           | 10,0 | 47 | 89  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD10IK-3A099-30                     | FD10IK-3B099-30    | 9,9                           | 10,0 | 47 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A100-30                     | FD10IK-3B100-30    | 10,0                          | 10,0 | 47 | 89  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD10IK-3A101-30                     | FD10IK-3B101-30    | 10,1                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A102-30                     | FD10IK-3B102-30    | 10,2                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A103-30                     | FD10IK-3B103-30    | 10,3                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A104-30                     | FD10IK-3B104-30    | 10,4                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A105-30                     | FD10IK-3B105-30    | 10,5                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A106-30                     | FD10IK-3B106-30    | 10,6                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A107-30                     | FD10IK-3B107-30    | 10,7                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A108-30                     | FD10IK-3B108-30    | 10,8                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A109-30                     | FD10IK-3B109-30    | 10,9                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A110-30                     | FD10IK-3B110-30    | 11,0                          | 12,0 | 55 | 102 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD10IK-3A111-30                     | FD10IK-3B111-30    | 11,1                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A112-30                     | FD10IK-3B112-30    | 11,2                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A113-30                     | FD10IK-3B113-30    | 11,3                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A114-30                     | FD10IK-3B114-30    | 11,4                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A115-30                     | FD10IK-3B115-30    | 11,5                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A116-30                     | FD10IK-3B116-30    | 11,6                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A117-30                     | FD10IK-3B117-30    | 11,7                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A118-30                     | FD10IK-3B118-30    | 11,8                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A119-30                     | FD10IK-3B119-30    | 11,9                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A120-30                     | FD10IK-3B120-30    | 12,0                          | 12,0 | 55 | 102 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD10IK-3A121-30                     | FD10IK-3B121-30    | 12,1                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A122-30                     | FD10IK-3B122-30    | 12,2                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A123-30                     | FD10IK-3B123-30    | 12,3                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A124-30                     | FD10IK-3B124-30    | 12,4                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A125-30                     | FD10IK-3B125-30    | 12,5                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A126-30                     | FD10IK-3B126-30    | 12,6                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A127-30                     | FD10IK-3B127-30    | 12,7                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A128-30                     | FD10IK-3B128-30    | 12,8                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A129-30                     | FD10IK-3B129-30    | 12,9                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A130-30                     | FD10IK-3B130-30    | 13,0                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A131-30                     | FD10IK-3B131-30    | 13,1                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A132-30                     | FD10IK-3B132-30    | 13,2                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD10IK



## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10IK-3A133-30                     | FD10IK-3B133-30    | 13,3                          | 14,0 | 60 | 107 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD10IK-3A134-30                     | FD10IK-3B134-30    | 13,4                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A135-30                     | FD10IK-3B135-30    | 13,5                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A136-30                     | FD10IK-3B136-30    | 13,6                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A137-30                     | FD10IK-3B137-30    | 13,7                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A138-30                     | FD10IK-3B138-30    | 13,8                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A139-30                     | FD10IK-3B139-30    | 13,9                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A140-30                     | FD10IK-3B140-30    | 14,0                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A141-30                     | FD10IK-3B141-30    | 14,1                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A142-30                     | FD10IK-3B142-30    | 14,2                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A143-30                     | FD10IK-3B143-30    | 14,3                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A144-30                     | FD10IK-3B144-30    | 14,4                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A145-30                     | FD10IK-3B145-30    | 14,5                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A146-30                     | FD10IK-3B146-30    | 14,6                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A147-30                     | FD10IK-3B147-30    | 14,7                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A148-30                     | FD10IK-3B148-30    | 14,8                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A149-30                     | FD10IK-3B149-30    | 14,9                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A150-30                     | FD10IK-3B150-30    | 15,0                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A151-30                     | FD10IK-3B151-30    | 15,1                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A152-30                     | FD10IK-3B152-30    | 15,2                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A153-30                     | FD10IK-3B153-30    | 15,3                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A154-30                     | FD10IK-3B154-30    | 15,4                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A155-30                     | FD10IK-3B155-30    | 15,5                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A156-30                     | FD10IK-3B156-30    | 15,6                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A157-30                     | FD10IK-3B157-30    | 15,7                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A158-30                     | FD10IK-3B158-30    | 15,8                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A159-30                     | FD10IK-3B159-30    | 15,9                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A160-30                     | FD10IK-3B160-30    | 16,0                          | 16,0 | 65 | 115 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD10IK-3A165-30                     | FD10IK-3B165-30    | 16,5                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A167-30                     | FD10IK-3B167-30    | 16,7                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A169-30                     | FD10IK-3B169-30    | 16,9                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A170-30                     | FD10IK-3B170-30    | 17,0                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A175-30                     | FD10IK-3B175-30    | 17,5                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A177-30                     | FD10IK-3B177-30    | 17,7                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A179-30                     | FD10IK-3B179-30    | 17,9                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



## FireDrill FD10IK



## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD10IK-3A180-30                     | FD10IK-3B180-30    | 18,0                          | 18,0 | 73 | 123 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD10IK-3A185-30                     | FD10IK-3B185-30    | 18,5                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A187-30                     | FD10IK-3B187-30    | 18,7                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A189-30                     | FD10IK-3B189-30    | 18,9                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A190-30                     | FD10IK-3B190-30    | 19,0                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A195-30                     | FD10IK-3B195-30    | 19,5                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A197-30                     | FD10IK-3B197-30    | 19,7                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A199-30                     | FD10IK-3B199-30    | 19,9                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10IK-3A200-30                     | FD10IK-3B200-30    | 20,0                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                                          | < 230                             | 120                                                           | 130 | 140 |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                                         | < 350                             | 90                                                            | 110 | 120 |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                                         | < 380                             | 70                                                            | 80  | 90  |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                                          | < 220                             | 50                                                            | 60  | 70  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                                          | < 240                             | 50                                                            | 60  | 70  |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                              | < 280                             | 180                                                           | 200 | 220 |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                              | < 320                             | 140                                                           | 160 | 180 |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                                          | < 110                             | -                                                             | -   | -   |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                                          | < 130                             | -                                                             | -   | -   |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 30                                                            | 40  | 50  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                                         | < 400                             | 40                                                            | 50  | 60  |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | < 54 HRC                          | 40                                                            | 50  | 60  |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | 52-60 HRC                         | 30                                                            | 40  | 50  |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | > 58 HRC                          | -                                                             | -   | -   |
| G                                | Graphit / Graphite                                                          | -                                                              | -                                 | -                                                             | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



# FireDrill

## FD12 / FD12IK

### 5xD

VHM-Hochleistungsbohrer

Für alle gängigen Werkstoffe (von Stahl bis Superlegierungen) /

Solid carbide high-performance drills

For all common materials (from steel to superalloys)



## FireDrill FD12

## VHM-Bohrer 5xD ohne IK / Solid carbide drill 5xD without internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12-5A030-30                       | FD12-5B030-30      | 3,0                           | 6,0 | 28 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD12-5A031-30                       | FD12-5B031-30      | 3,1                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A032-30                       | FD12-5B032-30      | 3,2                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A033-30                       | FD12-5B033-30      | 3,3                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A034-30                       | FD12-5B034-30      | 3,4                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A035-30                       | FD12-5B035-30      | 3,5                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A036-30                       | FD12-5B036-30      | 3,6                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A037-30                       | FD12-5B037-30      | 3,7                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A038-30                       | FD12-5B038-30      | 3,8                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A039-30                       | FD12-5B039-30      | 3,9                           | 6,0 | 36 | 74 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD12-5A040-30                       | FD12-5B040-30      | 4,0                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A041-30                       | FD10-5B041-30      | 4,1                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A042-30                       | FD12-5B042-30      | 4,2                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A043-30                       | FD12-5B043-30      | 4,3                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A044-30                       | FD12-5B044-30      | 4,4                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A045-30                       | FD12-5B045-30      | 4,5                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A046-30                       | FD12-5B046-30      | 4,6                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A0465-30                      | FD12-5B0465-30     | 4,7                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A047-30                       | FD12-5B047-30      | 4,7                           | 6,0 | 36 | 74 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| FD12-5A048-30                       | FD12-5B048-30      | 4,8                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A049-30                       | FD12-5B049-30      | 4,9                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A050-30                       | FD12-5B050-30      | 5,0                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A051-30                       | FD12-5B051-30      | 5,1                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A052-30                       | FD12-5B052-30      | 5,2                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A053-30                       | FD12-5B053-30      | 5,3                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A054-30                       | FD12-5B054-30      | 5,4                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A055-30                       | FD12-5B055-30      | 5,5                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A0555-30                      | FD12-5B0555-30     | 5,6                           | 6,0 | 44 | 82 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD12-5A056-30                       | FD12-5B056-30      | 5,6                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A057-30                       | FD12-5B057-30      | 5,7                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A058-30                       | FD12-5B058-30      | 5,8                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A059-30                       | FD12-5B059-30      | 5,9                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A060-30                       | FD12-5B060-30      | 6,0                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A061-30                       | FD12-5B061-30      | 6,1                           | 8,0 | 53 | 91 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A062-30                       | FD12-5B062-30      | 6,2                           | 8,0 | 53 | 91 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD12

## VHM-Bohrer 5xD ohne IK / Solid carbide drill 5xD without internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12-5A063-30                       | FD12-5B063-30      | 6,3                           | 8,0  | 53 | 91  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD12-5A064-30                       | FD12-5B064-30      | 6,4                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A065-30                       | FD12-5B065-30      | 6,5                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A066-30                       | FD12-5B066-30      | 6,6                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A067-30                       | FD12-5B067-30      | 6,7                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A068-30                       | FD12-5B068-30      | 6,8                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A069-30                       | FD12-5B069-30      | 6,9                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A070-30                       | FD12-5B070-30      | 7,0                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A071-30                       | FD12-5B071-30      | 7,1                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A072-30                       | FD12-5B072-30      | 7,2                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD10-5A073-30                       | FD12-5B073-30      | 7,3                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A074-30                       | FD12-5B074-30      | 7,4                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A075-30                       | FD12-5B075-30      | 7,5                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A076-30                       | FD12-5B076-30      | 7,6                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A077-30                       | FD12-5B077-30      | 7,7                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A078-30                       | FD12-5B078-30      | 7,8                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A079-30                       | FD12-5B079-30      | 7,9                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A080-30                       | FD12-5B080-30      | 8,0                           | 8,0  | 53 | 91  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD12-5A081-30                       | FD12-5B081-30      | 8,1                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A082-30                       | FD12-5B082-30      | 8,2                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A083-30                       | FD12-5B083-30      | 8,3                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A084-30                       | FD12-5B084-30      | 8,4                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A085-30                       | FD12-5B085-30      | 8,5                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A086-30                       | FD12-5B086-30      | 8,6                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A087-30                       | FD12-5B087-30      | 8,7                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A088-30                       | FD12-5B088-30      | 8,8                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A089-30                       | FD12-5B089-30      | 8,9                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A090-30                       | FD12-5B090-30      | 9,0                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A091-30                       | FD12-5B091-30      | 9,1                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A092-30                       | FD12-5B092-30      | 9,2                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A093-30                       | FD12-5B093-30      | 9,3                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A094-30                       | FD12-5B094-30      | 9,4                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A095-30                       | FD12-5B095-30      | 9,5                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A096-30                       | FD12-5B096-30      | 9,6                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A097-30                       | FD12-5B097-30      | 9,7                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD12

## VHM-Bohrer 5xD ohne IK / Solid carbide drill 5xD without internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12-5A098-30                       | FD12-5B098-30      | 9,8                           | 10,0 | 61 | 103 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD12-5A099-30                       | FD12-5B099-30      | 9,9                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A100-30                       | FD12-5B100-30      | 10,0                          | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A101-30                       | FD12-5B101-30      | 10,1                          | 12,0 | 71 | 118 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD12-5A102-30                       | FD12-5B102-30      | 10,2                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A103-30                       | FD12-5B103-30      | 10,3                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A104-30                       | FD12-5B104-30      | 10,4                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A105-30                       | FD12-5B105-30      | 10,5                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A106-30                       | FD12-5B106-30      | 10,6                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A107-30                       | FD12-5B107-30      | 10,7                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A108-30                       | FD12-5B108-30      | 10,8                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A109-30                       | FD12-5B109-30      | 10,9                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A110-30                       | FD12-5B110-30      | 11,0                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A111-30                       | FD12-5B111-30      | 11,1                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A112-30                       | FD12-5B112-30      | 11,2                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A113-30                       | FD12-5B113-30      | 11,3                          | 12,0 | 71 | 118 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD12-5A114-30                       | FD12-5B114-30      | 11,4                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A115-30                       | FD12-5B115-30      | 11,5                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A116-30                       | FD12-5B116-30      | 11,6                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A117-30                       | FD12-5B117-30      | 11,7                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A118-30                       | FD12-5B118-30      | 11,8                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A119-30                       | FD12-5B119-30      | 11,9                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A120-30                       | FD12-5B120-30      | 12,0                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A121-30                       | FD12-5B121-30      | 12,1                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A122-30                       | FD12-5B122-30      | 12,2                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A123-30                       | FD12-5B123-30      | 12,3                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A124-30                       | FD12-5B124-30      | 12,4                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A125-30                       | FD12-5B125-30      | 12,5                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A126-30                       | FD12-5B126-30      | 12,6                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A127-30                       | FD12-5B127-30      | 12,7                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A128-30                       | FD12-5B128-30      | 12,8                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A129-30                       | FD12-5B129-30      | 12,9                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A130-30                       | FD12-5B130-30      | 13,0                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A131-30                       | FD12-5B131-30      | 13,1                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A132-30                       | FD12-5B132-30      | 13,2                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD12

## VHM-Bohrer 5xD ohne IK / Solid carbide drill 5xD without internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12-5A133-30                       | FD12-5B133-30      | 13,3                          | 14,0 | 77 | 124 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD12-5A134-30                       | FD12-5B134-30      | 13,4                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A135-30                       | FD12-5B135-30      | 13,5                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A136-30                       | FD12-5B136-30      | 13,6                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A137-30                       | FD12-5B137-30      | 13,7                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A138-30                       | FD12-5B138-30      | 13,8                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A139-30                       | FD12-5B139-30      | 13,9                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A140-30                       | FD12-5B140-30      | 14,0                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A141-30                       | FD12-5B141-30      | 14,1                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A142-30                       | FD12-5B142-30      | 14,2                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A143-30                       | FD12-5B143-30      | 14,3                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A144-30                       | FD12-5B144-30      | 14,4                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A145-30                       | FD12-5B145-30      | 14,5                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A146-30                       | FD12-5B146-30      | 14,6                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A147-30                       | FD12-5B147-30      | 14,7                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A148-30                       | FD12-5B148-30      | 14,8                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A149-30                       | FD12-5B149-30      | 14,9                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A150-30                       | FD12-5B150-30      | 15,0                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A151-30                       | FD12-5B151-30      | 15,1                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A152-30                       | FD12-5B152-30      | 15,2                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A153-30                       | FD12-5B153-30      | 15,3                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A154-30                       | FD12-5B154-30      | 15,4                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A155-30                       | FD12-5B155-30      | 15,5                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A156-30                       | FD12-5B156-30      | 15,6                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A157-30                       | FD12-5B157-30      | 15,7                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A158-30                       | FD12-5B158-30      | 15,8                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A159-30                       | FD12-5B159-30      | 15,9                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A160-30                       | FD12-5B160-30      | 16,0                          | 16,0 | 83 | 133 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD12-5A165-30                       | FD12-5B165-30      | 16,5                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A167-30                       | FD12-5B167-30      | 16,7                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A169-30                       | FD12-5B169-30      | 16,9                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A170-30                       | FD12-5B170-30      | 17,0                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A175-30                       | FD12-5B175-30      | 17,5                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A177-30                       | FD12-5B177-30      | 17,7                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A179-30                       | FD12-5B179-30      | 17,9                          | 18,0 | 93 | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD12

## VHM-Bohrer 5xD ohne IK / Solid carbide drill 5xD without internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12-5A180-30                       | FD12-5B180-30      | 18,0                          | 18,0 | 93  | 143 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD12-5A185-30                       | FD12-5B185-30      | 18,5                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A187-30                       | FD12-5B187-30      | 18,7                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A189-30                       | FD12-5B189-30      | 18,9                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A190-30                       | FD12-5B190-30      | 19,0                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A195-30                       | FD12-5B195-30      | 19,5                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A197-30                       | FD12-5B197-30      | 19,7                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A199-30                       | FD12-5B199-30      | 19,9                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12-5A200-30                       | FD12-5B200-30      | 20,0                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                            | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                     | < 600                                                          | < 230                             | 100                                                           | 110 | 120 |
| P2                               | Legierter Stahl / Alloy Steel                                              | < 1200                                                         | < 350                             | 80                                                            | 90  | 100 |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel    | < 1400                                                         | < 380                             | 60                                                            | 70  | 80  |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel         | < 680                                                          | < 220                             | 40                                                            | 50  | 60  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                             | < 820                                                          | < 240                             | 40                                                            | 50  | 60  |
| K1                               | Grauguß / Grey cast iron                                                   | -                                                              | < 280                             | 160                                                           | 180 | 200 |
| K2                               | Sphäroguß / Ductile cast iron                                              | -                                                              | < 320                             | 120                                                           | 140 | 160 |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                     | < 250                                                          | < 110                             | -                                                             | -   | -   |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                    | < 530                                                          | < 130                             | -                                                             | -   | -   |
| S1                               | Warmfeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 20                                                            | 30  | 40  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta         | < 2100                                                         | < 400                             | 30                                                            | 40  | 50  |
| H1                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | < 54 HRC                          | 30                                                            | 40  | 50  |
| H2                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | 52-60 HRC                         | 20                                                            | 25  | 30  |
| H3                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | > 58 HRC                          | -                                                             | -   | -   |
| G                                | Graphit / Graphite                                                         | -                                                              | -                                 | -                                                             | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



**FireDrill FD12IK** 

## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
Drallwinkel / Helix angle: 30°  
Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12IK-5A010-30                     | -                  | 1,0                           | 3,0 | 7  | 55 | 2 | 0,03                                                                        | 0,02 | 0,01 | 0,02 | 0,01 | 0,03 | 0,02 | 0,03 | 0,03 | 0,01 | 0,01 | -    | -    |
| FD12IK-5A011-30                     | -                  | 1,1                           | 3,0 | 10 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A012-30                     | -                  | 1,2                           | 3,0 | 10 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A013-30                     | -                  | 1,3                           | 3,0 | 10 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A014-30                     | -                  | 1,4                           | 3,0 | 10 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A015-30                     | -                  | 1,5                           | 3,0 | 10 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A016-30                     | -                  | 1,6                           | 3,0 | 13 | 55 | 2 | 0,03                                                                        | 0,03 | 0,02 | 0,02 | 0,04 | 0,03 | 0,04 | 0,04 | 0,01 | 0,01 | -    | -    |      |
| FD12IK-5A017-30                     | -                  | 1,7                           | 3,0 | 13 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A018-30                     | -                  | 1,8                           | 3,0 | 13 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A019-30                     | -                  | 1,9                           | 3,0 | 13 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A020-30                     | -                  | 2,0                           | 3,0 | 16 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A021-30                     | -                  | 2,1                           | 3,0 | 16 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A022-30                     | -                  | 2,2                           | 3,0 | 16 | 57 | 2 | 0,05                                                                        | 0,04 | 0,03 | 0,03 | 0,05 | 0,04 | 0,05 | 0,05 | 0,02 | 0,02 | -    | -    |      |
| FD12IK-5A023-30                     | -                  | 2,3                           | 3,0 | 16 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A024-30                     | -                  | 2,4                           | 3,0 | 16 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A025-30                     | -                  | 2,5                           | 3,0 | 16 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A026-30                     | -                  | 2,6                           | 3,0 | 19 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A027-30                     | -                  | 2,7                           | 3,0 | 19 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A028-30                     | -                  | 2,8                           | 3,0 | 19 | 57 | 2 | 0,08                                                                        | 0,05 | 0,05 | 0,05 | 0,04 | 0,08 | 0,06 | 0,07 | 0,07 | 0,04 | 0,04 | -    | -    |
| FD12IK-5A029-30                     | -                  | 2,9                           | 3,0 | 19 | 57 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A030-30                     | FD12IK-5B030-30    | 3,0                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A031-30                     | FD12IK-5B031-30    | 3,1                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A032-30                     | FD12IK-5B032-30    | 3,2                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A033-30                     | FD12IK-5B033-30    | 3,3                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A034-30                     | FD12IK-5B034-30    | 3,4                           | 6,0 | 28 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD12IK-5A035-30                     | FD12IK-5B035-30    | 3,5                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A036-30                     | FD12IK-5B036-30    | 3,6                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A037-30                     | FD12IK-5B037-30    | 3,7                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A038-30                     | FD12IK-5B038-30    | 3,8                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A039-30                     | FD12IK-5B039-30    | 3,9                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A040-30                     | FD12IK-5B040-30    | 4,0                           | 6,0 | 36 | 74 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD12IK-5A041-30                     | FD12IK-5B041-30    | 4,1                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A042-30                     | FD12IK-5B042-30    | 4,2                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A043-30                     | FD12IK-5B043-30    | 4,3                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A044-30                     | FD12IK-5B044-30    | 4,4                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



## FireDrill FD12IK



## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12IK-5A078-30                     | FD12IK-5B078-30    | 7,8                           | 8,0  | 53 | 91  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD12IK-5A079-30                     | FD12IK-5B079-30    | 7,9                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A080-30                     | FD12IK-5B080-30    | 8,0                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A081-30                     | FD12IK-5B081-30    | 8,1                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A082-30                     | FD12IK-5B082-30    | 8,2                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A083-30                     | FD12IK-5B083-30    | 8,3                           | 10,0 | 61 | 103 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD12IK-5A084-30                     | FD12IK-5B084-30    | 8,4                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A085-30                     | FD12IK-5B085-30    | 8,5                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A086-30                     | FD12IK-5B086-30    | 8,6                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A087-30                     | FD12IK-5B087-30    | 8,7                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A088-30                     | FD12IK-5B088-30    | 8,8                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A089-30                     | FD12IK-5B089-30    | 8,9                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A090-30                     | FD12IK-5B090-30    | 9,0                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A091-30                     | FD12IK-5B091-30    | 9,1                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A092-30                     | FD12IK-5B092-30    | 9,2                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A093-30                     | FD12IK-5B093-30    | 9,3                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A094-30                     | FD12IK-5B094-30    | 9,4                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A095-30                     | FD12IK-5B095-30    | 9,5                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A096-30                     | FD12IK-5B096-30    | 9,6                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A097-30                     | FD12IK-5B097-30    | 9,7                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A098-30                     | FD12IK-5B098-30    | 9,8                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A099-30                     | FD12IK-5B099-30    | 9,9                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A100-30                     | FD12IK-5B100-30    | 10,0                          | 10,0 | 61 | 103 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD12IK-5A101-30                     | FD12IK-5B101-30    | 10,1                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A102-30                     | FD12IK-5B102-30    | 10,2                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A103-30                     | FD12IK-5B103-30    | 10,3                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A104-30                     | FD12IK-5B104-30    | 10,4                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A105-30                     | FD12IK-5B105-30    | 10,5                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A106-30                     | FD12IK-5B106-30    | 10,6                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A107-30                     | FD12IK-5B107-30    | 10,7                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A108-30                     | FD12IK-5B108-30    | 10,8                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A109-30                     | FD12IK-5B109-30    | 10,9                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A110-30                     | FD12IK-5B110-30    | 11,0                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A111-30                     | FD12IK-5B111-30    | 11,1                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A112-30                     | FD12IK-5B112-30    | 11,2                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD12IK



## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12IK-5A113-30                     | FD12IK-5B113-30    | 11,3                          | 12,0 | 71 | 118 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD12IK-5A114-30                     | FD12IK-5B114-30    | 11,4                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A115-30                     | FD12IK-5B115-30    | 11,5                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A116-30                     | FD12IK-5B116-30    | 11,6                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A117-30                     | FD12IK-5B117-30    | 11,7                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A118-30                     | FD12IK-5B118-30    | 11,8                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A119-30                     | FD12IK-5B119-30    | 11,9                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A120-30                     | FD12IK-5B120-30    | 12,0                          | 12,0 | 71 | 118 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD12IK-5A121-30                     | FD12IK-5B121-30    | 12,1                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A122-30                     | FD12IK-5B122-30    | 12,2                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A123-30                     | FD12IK-5B123-30    | 12,3                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A124-30                     | FD12IK-5B124-30    | 12,4                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A125-30                     | FD12IK-5B125-30    | 12,5                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A126-30                     | FD12IK-5B126-30    | 12,6                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A127-30                     | FD12IK-5B127-30    | 12,7                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A128-30                     | FD12IK-5B128-30    | 12,8                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A129-30                     | FD12IK-5B129-30    | 12,9                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A130-30                     | FD12IK-5B130-30    | 13,0                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A131-30                     | FD12IK-5B131-30    | 13,1                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A132-30                     | FD12IK-5B132-30    | 13,2                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A133-30                     | FD12IK-5B133-30    | 13,3                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A134-30                     | FD12IK-5B134-30    | 13,4                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A135-30                     | FD12IK-5B135-30    | 13,5                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A136-30                     | FD12IK-5B136-30    | 13,6                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A137-30                     | FD12IK-5B137-30    | 13,7                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A138-30                     | FD12IK-5B138-30    | 13,8                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A139-30                     | FD12IK-5B139-30    | 13,9                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A140-30                     | FD12IK-5B140-30    | 14,0                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A141-30                     | FD12IK-5B141-30    | 14,1                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A142-30                     | FD12IK-5B142-30    | 14,2                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A143-30                     | FD12IK-5B143-30    | 14,3                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A144-30                     | FD12IK-5B144-30    | 14,4                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A145-30                     | FD12IK-5B145-30    | 14,5                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A146-30                     | FD12IK-5B146-30    | 14,6                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A147-30                     | FD12IK-5B147-30    | 14,7                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD12IK



## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD12IK-5A148-30                     | FD12IK-5B148-30    | 14,8                          | 16,0 | 83  | 133 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD12IK-5A149-30                     | FD12IK-5B149-30    | 14,9                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A150-30                     | FD12IK-5B150-30    | 15,0                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A151-30                     | FD12IK-5B151-30    | 15,1                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A152-30                     | FD12IK-5B152-30    | 15,2                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A153-30                     | FD12IK-5B153-30    | 15,3                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A154-30                     | FD12IK-5B154-30    | 15,4                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A155-30                     | FD12IK-5B155-30    | 15,5                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A156-30                     | FD12IK-5B156-30    | 15,6                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A157-30                     | FD12IK-5B157-30    | 15,7                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A158-30                     | FD12IK-5B158-30    | 15,8                          | 16,0 | 83  | 133 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD12IK-5A159-30                     | FD12IK-5B159-30    | 15,9                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A160-30                     | FD12IK-5B160-30    | 16,0                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A165-30                     | FD12IK-5B165-30    | 16,5                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A167-30                     | FD12IK-5B167-30    | 16,7                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A169-30                     | FD12IK-5B169-30    | 16,9                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A170-30                     | FD12IK-5B170-30    | 17,0                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A175-30                     | FD12IK-5B175-30    | 17,5                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A177-30                     | FD12IK-5B177-30    | 17,7                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A179-30                     | FD12IK-5B179-30    | 17,9                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A180-30                     | FD12IK-5B180-30    | 18,0                          | 18,0 | 93  | 143 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD12IK-5A185-30                     | FD12IK-5B185-30    | 18,5                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A187-30                     | FD12IK-5B187-30    | 18,7                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A189-30                     | FD12IK-5B189-30    | 18,9                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A190-30                     | FD12IK-5B190-30    | 19,0                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A195-30                     | FD12IK-5B195-30    | 19,5                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A197-30                     | FD12IK-5B197-30    | 19,7                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A199-30                     | FD12IK-5B199-30    | 19,9                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD12IK-5A200-30                     | FD12IK-5B200-30    | 20,0                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

**FireDrill FD12IK****VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant**

Bohrdurchmesser / Cutting dia.: 1,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN

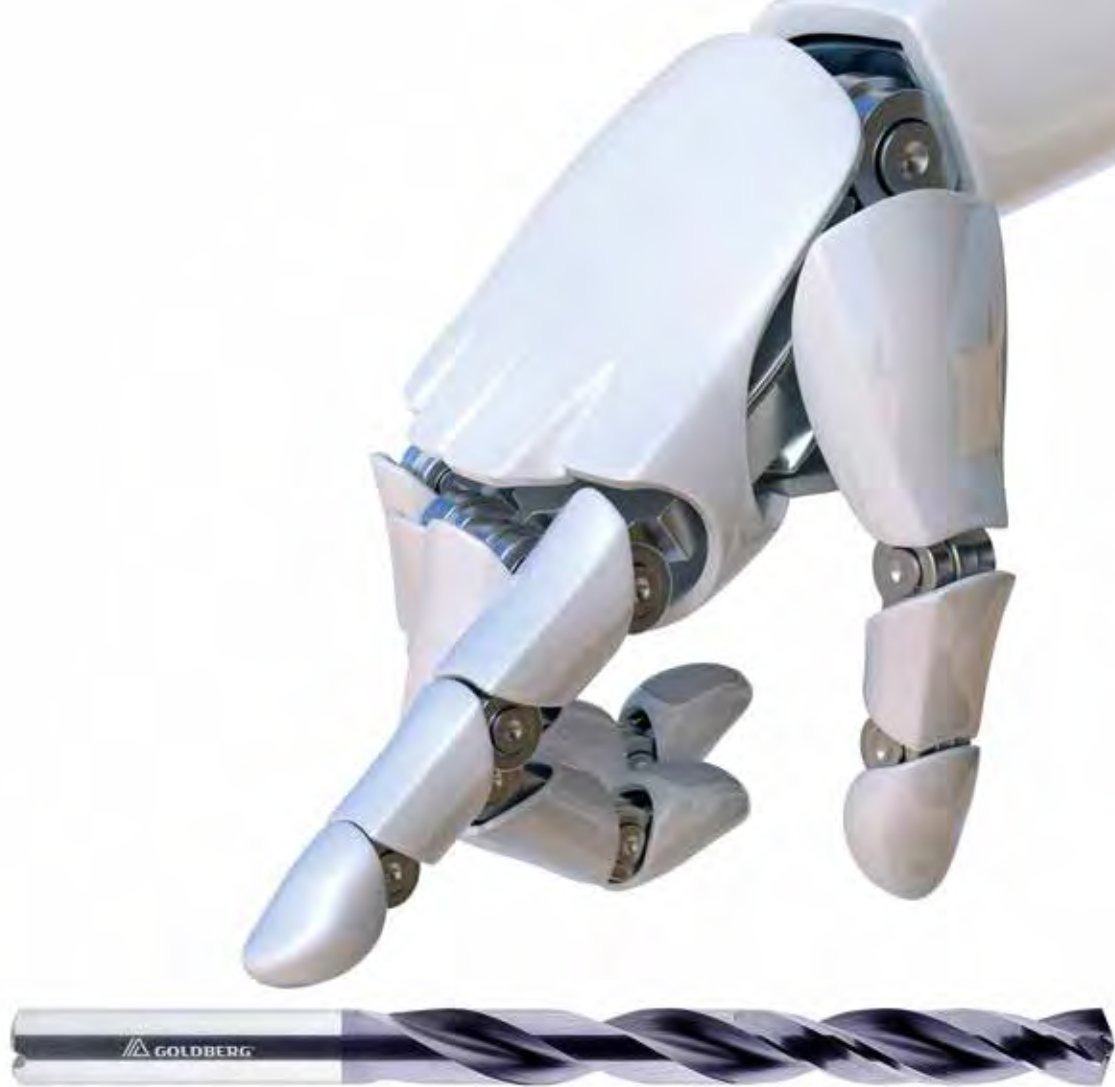

**Werkstoffgruppen und Schnittgeschwindigkeiten /**  
**Material groups and cutting speed**

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed |      |      |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------|------|------|
|                                  |                                                                             |                                                                |                                   | min.                                        | opt. | max. |
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                                          | < 230                             | 120                                         | 130  | 140  |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                                         | < 350                             | 90                                          | 110  | 120  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                                         | < 380                             | 70                                          | 80   | 90   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                                          | < 220                             | 50                                          | 60   | 70   |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                                          | < 240                             | 50                                          | 60   | 70   |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                              | < 280                             | 160                                         | 180  | 200  |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                              | < 320                             | 120                                         | 140  | 160  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                                          | < 110                             | -                                           | -    | -    |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                                          | < 130                             | -                                           | -    | -    |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 30                                          | 40   | 50   |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                                         | < 400                             | 40                                          | 50   | 60   |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | < 54 HRC                          | 40                                          | 50   | 60   |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | 52-60 HRC                         | 30                                          | 40   | 50   |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | > 58 HRC                          | -                                           | -    | -    |
| G                                | Graphit / Graphite                                                          | -                                                              | -                                 | -                                           | -    | -    |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



# FireDrill

## FD14IK / FD15IK

# 8xD + 12xD

VHM-Hochleistungsbohrer

Für alle gängigen Werkstoffe Für die Bearbeitung größerer Bohrtiefen /

Solid carbide high-performance drills

For all common materials for machining larger drilling depths





## FireDrill FD14IK



## VHM-Bohrer 8xD mit IK/ Solid carbide drill 8xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD14IK-8A030-30                     | FD14IK-8B030-30    | 3,0                           | 6,0 | 30 | 70  | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD14IK-8A031-30                     | FD14IK-8B031-30    | 3,1                           | 6,0 | 30 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A032-30                     | FD14IK-8B032-30    | 3,2                           | 6,0 | 30 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A033-30                     | FD14IK-8B033-30    | 3,3                           | 6,0 | 30 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A034-30                     | FD14IK-8B034-30    | 3,4                           | 6,0 | 35 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A035-30                     | FD14IK-8B035-30    | 3,5                           | 6,0 | 35 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A036-30                     | FD14IK-8B036-30    | 3,6                           | 6,0 | 35 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A037-30                     | FD14IK-8B037-30    | 3,7                           | 6,0 | 35 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A038-30                     | FD14IK-8B038-30    | 3,8                           | 6,0 | 37 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A039-30                     | FD14IK-8B039-30    | 3,9                           | 6,0 | 37 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A040-30                     | FD14IK-8B040-30    | 4,0                           | 6,0 | 37 | 75  | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD14IK-8A041-30                     | FD14IK-8B041-30    | 4,1                           | 6,0 | 37 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A042-30                     | FD14IK-8B042-30    | 4,2                           | 6,0 | 37 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A043-30                     | FD14IK-8B043-30    | 4,3                           | 6,0 | 45 | 85  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A044-30                     | FD14IK-8B044-30    | 4,4                           | 6,0 | 45 | 85  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A045-30                     | FD14IK-8B045-30    | 4,5                           | 6,0 | 45 | 85  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A046-30                     | FD14IK-8B046-30    | 4,6                           | 6,0 | 45 | 85  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A047-30                     | FD14IK-8B047-30    | 4,7                           | 6,0 | 45 | 85  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A048-30                     | FD14IK-8B048-30    | 4,8                           | 6,0 | 50 | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A049-30                     | FD14IK-8B049-30    | 4,9                           | 6,0 | 50 | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A050-30                     | FD14IK-8B050-30    | 5,0                           | 6,0 | 50 | 90  | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| FD14IK-8A051-30                     | FD14IK-8B051-30    | 5,1                           | 6,0 | 50 | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A052-30                     | FD14IK-8B052-30    | 5,2                           | 6,0 | 50 | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A053-30                     | FD14IK-8B053-30    | 5,3                           | 6,0 | 50 | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A054-30                     | FD14IK-8B054-30    | 5,4                           | 6,0 | 57 | 97  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A055-30                     | FD14IK-8B055-30    | 5,5                           | 6,0 | 57 | 97  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A056-30                     | FD14IK-8B056-30    | 5,6                           | 6,0 | 57 | 97  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A057-30                     | FD14IK-8B057-30    | 5,7                           | 6,0 | 57 | 97  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A058-30                     | FD14IK-8B058-30    | 5,8                           | 6,0 | 57 | 97  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A059-30                     | FD14IK-8B059-30    | 5,9                           | 6,0 | 57 | 97  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A060-30                     | FD14IK-8B060-30    | 6,0                           | 6,0 | 57 | 97  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD14IK-8A061-30                     | FD14IK-8B061-30    | 6,1                           | 8,0 | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A062-30                     | FD14IK-8B062-30    | 6,2                           | 8,0 | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A063-30                     | FD14IK-8B063-30    | 6,3                           | 8,0 | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A064-30                     | FD14IK-8B064-30    | 6,4                           | 8,0 | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD14IK



## VHM-Bohrer 8xD mit IK/ Solid carbide drill 8xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD14IK-8A065-30                     | FD14IK-8B065-30    | 6,5                           | 8,0  | 66 | 106 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD14IK-8A066-30                     | FD14IK-8B066-30    | 6,6                           | 8,0  | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A067-30                     | FD14IK-8B067-30    | 6,7                           | 8,0  | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A068-30                     | FD14IK-8B068-30    | 6,8                           | 8,0  | 66 | 106 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A069-30                     | FD14IK-8B069-30    | 6,9                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A070-30                     | FD14IK-8B070-30    | 7,0                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A071-30                     | FD14IK-8B071-30    | 7,1                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A072-30                     | FD14IK-8B072-30    | 7,2                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A073-30                     | FD14IK-8B073-30    | 7,3                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A074-30                     | FD14IK-8B074-30    | 7,4                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A075-30                     | FD14IK-8B075-30    | 7,5                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A076-30                     | FD14IK-8B076-30    | 7,6                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A077-30                     | FD14IK-8B077-30    | 7,7                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A078-30                     | FD14IK-8B078-30    | 7,8                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A079-30                     | FD14IK-8B079-30    | 7,9                           | 8,0  | 76 | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A080-30                     | FD14IK-8B080-30    | 8,0                           | 8,0  | 76 | 116 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD14IK-8A081-30                     | FD14IK-8B081-30    | 8,1                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A082-30                     | FD14IK-8B082-30    | 8,2                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A083-30                     | FD14IK-8B083-30    | 8,3                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A084-30                     | FD14IK-8B084-30    | 8,4                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A085-30                     | FD14IK-8B085-30    | 8,5                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A086-30                     | FD14IK-8B086-30    | 8,6                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A087-30                     | FD14IK-8B087-30    | 8,7                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A088-30                     | FD14IK-8B088-30    | 8,8                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A089-30                     | FD14IK-8B089-30    | 8,9                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A090-30                     | FD14IK-8B090-30    | 9,0                           | 10,0 | 87 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A091-30                     | FD14IK-8B091-30    | 9,1                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A092-30                     | FD14IK-8B092-30    | 9,2                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A093-30                     | FD14IK-8B093-30    | 9,3                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A094-30                     | FD14IK-8B094-30    | 9,4                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A095-30                     | FD14IK-8B095-30    | 9,5                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A096-30                     | FD14IK-8B096-30    | 9,6                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A097-30                     | FD14IK-8B097-30    | 9,7                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A098-30                     | FD14IK-8B098-30    | 9,8                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A099-30                     | FD14IK-8B099-30    | 9,9                           | 10,0 | 95 | 139 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

FireDrill FD14IK 

## VHM-Bohrer 8xD mit IK/ Solid carbide drill 8xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD14IK-8A100-30                     | FD14IK-8B100-30    | 10,0                          | 10,0 | 95  | 139 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD14IK-8A101-30                     | FD14IK-8B101-30    | 10,1                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A102-30                     | FD14IK-8B102-30    | 10,2                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A103-30                     | FD14IK-8B103-30    | 10,3                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A104-30                     | FD14IK-8B104-30    | 10,4                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A105-30                     | FD14IK-8B105-30    | 10,5                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A106-30                     | FD14IK-8B106-30    | 10,6                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A107-30                     | FD14IK-8B107-30    | 10,7                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A108-30                     | FD14IK-8B108-30    | 10,8                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A109-30                     | FD14IK-8B109-30    | 10,9                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A110-30                     | FD14IK-8B110-30    | 11,0                          | 12,0 | 106 | 155 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A111-30                     | FD14IK-8B111-30    | 11,1                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A112-30                     | FD14IK-8B112-30    | 11,2                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A113-30                     | FD14IK-8B113-30    | 11,3                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A114-30                     | FD14IK-8B114-30    | 11,4                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A115-30                     | FD14IK-8B115-30    | 11,5                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A116-30                     | FD14IK-8B116-30    | 11,6                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A117-30                     | FD14IK-8B117-30    | 11,7                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A118-30                     | FD14IK-8B118-30    | 11,8                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A119-30                     | FD14IK-8B119-30    | 11,9                          | 12,0 | 114 | 163 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A120-30                     | FD14IK-8B120-30    | 12,0                          | 12,0 | 114 | 163 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD14IK-8A121-30                     | FD14IK-8B121-30    | 12,1                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A122-30                     | FD14IK-8B122-30    | 12,2                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A123-30                     | FD14IK-8B123-30    | 12,3                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A125-30                     | FD14IK-8B125-30    | 12,5                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A127-30                     | FD14IK-8B127-30    | 12,7                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A130-30                     | FD14IK-8B130-30    | 13,0                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A131-30                     | FD14IK-8B131-30    | 13,1                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A135-30                     | FD14IK-8B135-30    | 13,5                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A140-30                     | FD14IK-8B140-30    | 14,0                          | 14,0 | 133 | 182 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A141-30                     | FD14IK-8B141-30    | 14,1                          | 16,0 | 152 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A142-30                     | FD14IK-8B142-30    | 14,2                          | 16,0 | 152 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A145-30                     | FD14IK-8B145-30    | 14,5                          | 16,0 | 152 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A150-30                     | FD14IK-8B150-30    | 15,0                          | 16,0 | 152 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A151-30                     | FD14IK-8B151-30    | 15,1                          | 16,0 | 152 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD14IK



## VHM-Bohrer 8xD mit IK/ Solid carbide drill 8xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD14IK-8A155-30                     | FD14IK-8B155-30    | 15,5                          | 16,0 | 152 | 204 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD14IK-8A160-30                     | FD14IK-8B160-30    | 16,0                          | 16,0 | 152 | 204 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD14IK-8A165-30                     | FD14IK-8B165-30    | 16,5                          | 18,0 | 171 | 223 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A169-30                     | FD14IK-8B169-30    | 16,9                          | 18,0 | 171 | 223 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A170-30                     | FD14IK-8B170-30    | 17,0                          | 18,0 | 171 | 223 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A175-30                     | FD14IK-8B175-30    | 17,5                          | 18,0 | 171 | 223 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A180-30                     | FD14IK-8B180-30    | 18,0                          | 18,0 | 171 | 223 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A185-30                     | FD14IK-8B185-30    | 18,5                          | 20,0 | 190 | 244 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A189-30                     | FD14IK-8B189-30    | 18,9                          | 20,0 | 190 | 244 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A190-30                     | FD14IK-8B190-30    | 19,0                          | 20,0 | 190 | 244 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A195-30                     | FD14IK-8B195-30    | 19,5                          | 20,0 | 190 | 244 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD14IK-8A200-30                     | FD14IK-8B200-30    | 20,0                          | 20,0 | 190 | 244 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm²] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------|---------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                             | < 230                             | 120                                                           | 130 | 140 |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                            | < 350                             | 90                                                            | 110 | 120 |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                            | < 380                             | 70                                                            | 80  | 90  |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                             | < 220                             | 50                                                            | 60  | 70  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                             | < 240                             | 50                                                            | 60  | 70  |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                 | < 280                             | 160                                                           | 180 | 200 |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                 | < 320                             | 120                                                           | 140 | 160 |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                             | < 110                             | -                                                             | -   | -   |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                             | < 130                             | -                                                             | -   | -   |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                            | < 350                             | 30                                                            | 40  | 50  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                            | < 400                             | 40                                                            | 50  | 60  |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                 | < 54 HRC                          | 40                                                            | 50  | 60  |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                 | 52-60 HRC                         | 30                                                            | 40  | 50  |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                 | > 58 HRC                          | -                                                             | -   | -   |
| G                                | Graphit / Graphite                                                          | -                                                 | -                                 | -                                                             | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD15IK



## VHM-Bohrer 12xD mit IK / Solid carbide drill 12xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm – 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD15IK-12A030-30                    | -                  | 3,0                           | 6,0 | 50  | 90  | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD15IK-12A031-30                    | -                  | 3,1                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A032-30                    | -                  | 3,2                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A033-30                    | -                  | 3,3                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A034-30                    | -                  | 3,4                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A035-30                    | -                  | 3,5                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A036-30                    | -                  | 3,6                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A037-30                    | -                  | 3,7                           | 6,0 | 50  | 90  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A038-30                    | -                  | 3,8                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A039-30                    | -                  | 3,9                           | 6,0 | 64  | 102 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD15IK-12A040-30                    | -                  | 4,0                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A041-30                    | -                  | 4,1                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A042-30                    | -                  | 4,2                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A043-30                    | -                  | 4,3                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A044-30                    | -                  | 4,4                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A045-30                    | -                  | 4,5                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A046-30                    | -                  | 4,6                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A047-30                    | -                  | 4,7                           | 6,0 | 64  | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A048-30                    | -                  | 4,8                           | 6,0 | 78  | 116 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| FD15IK-12A049-30                    | -                  | 4,9                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A050-30                    | -                  | 5,0                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A051-30                    | -                  | 5,1                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A052-30                    | -                  | 5,2                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A053-30                    | -                  | 5,3                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A054-30                    | -                  | 5,4                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A055-30                    | -                  | 5,5                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A056-30                    | -                  | 5,6                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A057-30                    | -                  | 5,7                           | 6,0 | 78  | 116 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD15IK-12A058-30                    | -                  | 5,8                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A059-30                    | -                  | 5,9                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A060-30                    | -                  | 6,0                           | 6,0 | 78  | 116 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A061-30                    | -                  | 6,1                           | 8,0 | 108 | 146 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD15IK-12A062-30                    | -                  | 6,2                           | 8,0 | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A063-30                    | -                  | 6,3                           | 8,0 | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A064-30                    | -                  | 6,4                           | 8,0 | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD15IK



## VHM-Bohrer 12xD mit IK / Solid carbide drill 12xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD15IK-12A065-30                    | -                  | 6,5                           | 8,0  | 108 | 146 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD15IK-12A066-30                    | -                  | 6,6                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A067-30                    | -                  | 6,7                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A068-30                    | -                  | 6,8                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A069-30                    | -                  | 6,9                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A070-30                    | -                  | 7,0                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A071-30                    | -                  | 7,1                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A072-30                    | -                  | 7,2                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A073-30                    | -                  | 7,3                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A074-30                    | -                  | 7,4                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A075-30                    | -                  | 7,5                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A076-30                    | -                  | 7,6                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A077-30                    | -                  | 7,7                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A078-30                    | -                  | 7,8                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A079-30                    | -                  | 7,9                           | 8,0  | 108 | 146 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A080-30                    | -                  | 8,0                           | 8,0  | 108 | 146 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD15IK-12A081-30                    | -                  | 8,1                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A082-30                    | -                  | 8,2                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A083-30                    | -                  | 8,3                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A084-30                    | -                  | 8,4                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A085-30                    | -                  | 8,5                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A086-30                    | -                  | 8,6                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A087-30                    | -                  | 8,7                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A088-30                    | -                  | 8,8                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A089-30                    | -                  | 8,9                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A090-30                    | -                  | 9,0                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A091-30                    | -                  | 9,1                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A092-30                    | -                  | 9,2                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A093-30                    | -                  | 9,3                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A094-30                    | -                  | 9,4                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A095-30                    | -                  | 9,5                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A096-30                    | -                  | 9,6                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A097-30                    | -                  | 9,7                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A098-30                    | -                  | 9,8                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A099-30                    | -                  | 9,9                           | 10,0 | 120 | 162 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD15IK



## VHM-Bohrer 12xD mit IK / Solid carbide drill 12xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm

Typ / Type:

DIN 6535 HA

DIN 6535 HE

Spitzenwinkel / Point angle: 140°

Drallwinkel / Helix angle: 30°

Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD15IK-12A100-30                    | -                  | 10,0                          | 10,0 | 120 | 162 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD15IK-12A101-30                    | -                  | 10,1                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A102-30                    | -                  | 10,2                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A103-30                    | -                  | 10,3                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A104-30                    | -                  | 10,4                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A105-30                    | -                  | 10,5                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A106-30                    | -                  | 10,6                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A107-30                    | -                  | 10,7                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A108-30                    | -                  | 10,8                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A109-30                    | -                  | 10,9                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A110-30                    | -                  | 11,0                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A111-30                    | -                  | 11,1                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A112-30                    | -                  | 11,2                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A113-30                    | -                  | 11,3                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A114-30                    | -                  | 11,4                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A115-30                    | -                  | 11,5                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A116-30                    | -                  | 11,6                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A117-30                    | -                  | 11,7                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A118-30                    | -                  | 11,8                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A119-30                    | -                  | 11,9                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A120-30                    | -                  | 12,0                          | 12,0 | 156 | 204 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A121-30                    | -                  | 12,1                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A122-30                    | -                  | 12,2                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A123-30                    | -                  | 12,3                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A125-30                    | -                  | 12,5                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A127-30                    | -                  | 12,7                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A130-30                    | -                  | 13,0                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A131-30                    | -                  | 13,1                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A135-30                    | -                  | 13,5                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A140-30                    | -                  | 14,0                          | 14,0 | 182 | 230 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A141-30                    | -                  | 14,1                          | 16,0 | 208 | 260 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A142-30                    | -                  | 14,2                          | 16,0 | 208 | 260 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A145-30                    | -                  | 14,5                          | 16,0 | 208 | 260 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A150-30                    | -                  | 15,0                          | 16,0 | 208 | 260 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A151-30                    | -                  | 15,1                          | 16,0 | 208 | 260 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



## FireDrill FD15IK



## VHM-Bohrer 12xD mit IK / Solid carbide drill 12xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: TiAlN



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD15IK-12A155-30                    |                    | 15,5                          | 16,0 | 208 | 260 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| FD15IK-12A160-30                    |                    | 16,0                          | 16,0 | 208 | 260 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| FD15IK-12A165-30                    |                    | 16,5                          | 18,0 | 234 | 285 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A169-30                    |                    | 16,9                          | 18,0 | 234 | 285 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A170-30                    |                    | 17,0                          | 18,0 | 234 | 285 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A175-30                    |                    | 17,5                          | 18,0 | 234 | 285 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A180-30                    |                    | 18,0                          | 18,0 | 234 | 285 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A185-30                    |                    | 18,5                          | 20,0 | 258 | 310 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A189-30                    |                    | 18,9                          | 20,0 | 258 | 310 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A190-30                    |                    | 19,0                          | 20,0 | 258 | 310 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A195-30                    |                    | 19,5                          | 20,0 | 258 | 310 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD15IK-12A200-30                    |                    | 20,0                          | 20,0 | 258 | 310 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                            | Zugfestigkeit / Tensile strength Rm [N/mm <sup>2</sup> ] | Härte / Hardness [HB / HRC] | Schnittgeschwindigkeiten / Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------|------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                     | < 600                                                    | < 230                       | 80                                                         | 90  | 100 |
| P2                               | Legierter Stahl / Alloy Steel                                              | < 1200                                                   | < 350                       | 70                                                         | 80  | 90  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel    | < 1400                                                   | < 380                       | 40                                                         | 50  | 60  |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel         | < 680                                                    | < 220                       | 30                                                         | 40  | 50  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                             | < 820                                                    | < 240                       | 30                                                         | 40  | 50  |
| K1                               | Grauguß / Grey cast iron                                                   | -                                                        | < 280                       | 100                                                        | 120 | 140 |
| K2                               | Sphäroguß / Ductile cast iron                                              | -                                                        | < 320                       | 70                                                         | 80  | 90  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                     | < 250                                                    | < 110                       | -                                                          | -   | -   |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                    | < 530                                                    | < 130                       | -                                                          | -   | -   |
| S1                               | Warmfeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                   | < 350                       | 30                                                         | 40  | 50  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta         | < 2100                                                   | < 400                       | -                                                          | -   | -   |
| H1                               | Gehärtete Stähle / Hardened steel                                          | -                                                        | < 54 HRC                    | -                                                          | -   | -   |
| H2                               | Gehärtete Stähle / Hardened steel                                          | -                                                        | 52-60 HRC                   | -                                                          | -   | -   |
| H3                               | Gehärtete Stähle / Hardened steel                                          | -                                                        | > 58 HRC                    | -                                                          | -   | -   |
| G                                | Graphit / Graphite                                                         | -                                                        | -                           | -                                                          | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



# FireDrill

**FD17 / FD18 / FD19 / FD20 / FD21**

**90° / 120° / 142°**

NC-Anbohrer ohne Beschichtung und  
universal VHM-Bohrer für Alu bis Edelstahl  
NC spot drill without coating and  
universal solid carbide drills for aluminum to stainless steel



**FireDrill FD17****VHM NC-Anbohrer 142° / Solid carbide NC spot drill 142°**
 Bohrdurchmesser / Cutting dia.: 6,0mm – 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 142°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD17-1A060-142°                     | -                  | 6,0                           | 6,0  | 15 | 65  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD17-1A080-142°                     | -                  | 8,0                           | 8,0  | 20 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD17-1A100-142°                     | -                  | 10,0                          | 10,0 | 25 | 90  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD17-1A120-142°                     | -                  | 12,0                          | 12,0 | 30 | 100 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

**Werkstoffgruppen und Schnittgeschwindigkeiten /**  
**Material groups and cutting speed**

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit / Tensile strength Rm [N/mm <sup>2</sup> ] | Härte / Hardness [HB / HRC] | Schnittgeschwindigkeiten / Cutting speed min. opt. max. |     |     |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------|---------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                                    | < 230                       | 60                                                      | 70  | 80  |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                                   | < 350                       | 50                                                      | 60  | 70  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                                   | < 380                       | -                                                       | -   | -   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                                    | < 220                       | 20                                                      | 25  | 30  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                                    | < 240                       | 20                                                      | 25  | 30  |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                        | < 280                       | 70                                                      | 80  | 90  |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                        | < 320                       | 50                                                      | 60  | 70  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                                    | < 110                       | 120                                                     | 160 | 200 |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                                    | < 130                       | 170                                                     | 200 | 230 |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                   | < 350                       | 10                                                      | 15  | 20  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                                   | < 400                       | 10                                                      | 15  | 20  |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                        | < 54 HRC                    | -                                                       | -   | -   |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                        | 52-60 HRC                   | -                                                       | -   | -   |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                        | > 58 HRC                    | -                                                       | -   | -   |
| G                                | Graphit / Graphite                                                          | -                                                        | -                           | -                                                       | -   | -   |


 D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD18

## VHM NC-Anbohrer 90° / Solid carbide NC spot drill 90°

 Bohrdurchmesser / Cutting dia.: 3,0mm - 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 90°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD18-1A030-90°                      | -                  | 3,0                           | 3,0  | 10 | 39  | 2 | 0,20                                                                        | 0,15 | 0,10 | 0,10 | 0,06 | 0,25 | 0,20 | 0,25 | 0,20 | 0,05 | 0,05 | 0,05 | 0,03 |
| FD18-1A040-90°                      | -                  | 4,0                           | 4,0  | 10 | 51  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD18-1A050-90°                      | -                  | 5,0                           | 5,0  | 12 | 51  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD18-1A060-90°                      | -                  | 6,0                           | 6,0  | 15 | 65  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD18-1A080-90°                      | -                  | 8,0                           | 8,0  | 20 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD18-1A100-90°                      | -                  | 10,0                          | 10,0 | 25 | 90  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD18-1A120-90°                      | -                  | 12,0                          | 12,0 | 30 | 100 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                            | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                     | < 600                                                          | < 230                             | 60                                                            | 70  | 80  |
| P2                               | Legierter Stahl / Alloy Steel                                              | < 1200                                                         | < 350                             | 50                                                            | 60  | 70  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel    | < 1400                                                         | < 380                             | -                                                             | -   | -   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel         | < 680                                                          | < 220                             | 20                                                            | 25  | 30  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                             | < 820                                                          | < 240                             | 20                                                            | 25  | 30  |
| K1                               | Grauguß / Grey cast iron                                                   | -                                                              | < 280                             | 70                                                            | 80  | 90  |
| K2                               | Sphäroguß / Ductile cast iron                                              | -                                                              | < 320                             | 50                                                            | 60  | 70  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                     | < 250                                                          | < 110                             | 120                                                           | 160 | 200 |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                    | < 530                                                          | < 130                             | 170                                                           | 200 | 230 |
| S1                               | Warmfeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 10                                                            | 15  | 20  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta         | < 2100                                                         | < 400                             | 10                                                            | 15  | 20  |
| H1                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | < 54 HRC                          | -                                                             | -   | -   |
| H2                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | 52-60 HRC                         | -                                                             | -   | -   |
| H3                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | > 58 HRC                          | -                                                             | -   | -   |
| G                                | Graphit / Graphite                                                         | -                                                              | -                                 | -                                                             | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

**FireDrill FD19****VHM NC-Anbohrer 120° / Solid carbide NC spot drill 120°**
 Bohrdurchmesser / Cutting dia.: 3,0mm - 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 120°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD19-1A030-120°                     | -                  | 3,0                           | 3,0  | 10 | 39  | 2 | 0,20                                                                        | 0,15 | 0,10 | 0,10 | 0,06 | 0,25 | 0,20 | 0,25 | 0,20 | 0,05 | 0,05 | 0,05 | 0,03 |
| FD19-1A040-120°                     | -                  | 4,0                           | 4,0  | 10 | 51  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD19-1A050-120°                     | -                  | 5,0                           | 5,0  | 12 | 51  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD19-1A060-120°                     | -                  | 6,0                           | 6,0  | 15 | 65  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD19-1A080-120°                     | -                  | 8,0                           | 8,0  | 20 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD19-1A100-120°                     | -                  | 10,0                          | 10,0 | 25 | 90  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD19-1A120-120°                     | -                  | 12,0                          | 12,0 | 30 | 100 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

**Werkstoffgruppen und Schnittgeschwindigkeiten /**  
**Material groups and cutting speed**

| Werkstoffgruppe / Material group |                                                                            | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                     | < 600                                                          | < 230                             | 60                                                            | 70  | 80  |
| P2                               | Legierter Stahl / Alloy Steel                                              | < 1200                                                         | < 350                             | 50                                                            | 60  | 70  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel    | < 1400                                                         | < 380                             | -                                                             | -   | -   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel         | < 680                                                          | < 220                             | 20                                                            | 25  | 30  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                             | < 820                                                          | < 240                             | 20                                                            | 25  | 30  |
| K1                               | Grauguß / Grey cast iron                                                   | -                                                              | < 280                             | 70                                                            | 80  | 90  |
| K2                               | Sphäroguß / Ductile cast iron                                              | -                                                              | < 320                             | 50                                                            | 60  | 70  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                     | < 250                                                          | < 110                             | 120                                                           | 160 | 200 |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                    | < 530                                                          | < 130                             | 170                                                           | 200 | 230 |
| S1                               | Warmfeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 10                                                            | 15  | 20  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta         | < 2100                                                         | < 400                             | 10                                                            | 15  | 20  |
| H1                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | < 54 HRC                          | -                                                             | -   | -   |
| H2                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | 52-60 HRC                         | -                                                             | -   | -   |
| H3                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | > 58 HRC                          | -                                                             | -   | -   |
| G                                | Graphit / Graphite                                                         | -                                                              | -                                 | -                                                             | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD20

## VHM-Bohrer 4xD ohne IK / Solid carbide drill 4xD without internal coolant

 Bohrdurchmesser / Cutting dia.: 1,5mm - 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 120°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |      |
| FD20-SA015-30                       | -                  | 1,5                           | 1,5 | 9  | 32 | 2 | 0,08                                                                        | 0,06 | 0,05 | 0,04 | 0,03 | 0,13 | 0,10 | 0,10 | 0,13 | 0,04 | 0,03 | 0,03 | 0,03 |      |
| FD20-SA016-30                       | -                  | 1,6                           | 1,6 | 10 | 34 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA020-30                       | -                  | 2,0                           | 2,0 | 12 | 38 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA021-30                       | -                  | 2,1                           | 2,1 | 12 | 38 | 2 | 0,10                                                                        | 0,08 | 0,06 | 0,05 | 0,04 | 0,16 | 0,13 | 0,13 | 0,16 | 0,05 | 0,04 | 0,04 | 0,03 |      |
| FD20-SA022-30                       | -                  | 2,2                           | 2,2 | 13 | 40 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA023-30                       | -                  | 2,3                           | 2,3 | 13 | 40 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA024-30                       | -                  | 2,4                           | 2,4 | 14 | 43 | 2 | 0,13                                                                        | 0,10 | 0,08 | 0,06 | 0,05 | 0,16 | 0,16 | 0,16 | 0,16 | 0,06 | 0,05 | 0,05 | 0,04 |      |
| FD20-SA025-30                       | -                  | 2,5                           | 2,5 | 14 | 43 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA026-30                       | -                  | 2,6                           | 2,6 | 14 | 43 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA027-30                       | -                  | 2,7                           | 2,7 | 16 | 46 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| FD20-SA028-30                       | -                  | 2,8                           | 2,8 | 16 | 46 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA029-30                       | -                  | 2,9                           | 2,9 | 16 | 46 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA030-30                       | -                  | 3,0                           | 3,0 | 16 | 46 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |      |
| FD20-SA031-30                       | -                  | 3,1                           | 3,1 | 18 | 49 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA032-30                       | -                  | 3,2                           | 3,2 | 18 | 49 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA033-30                       | -                  | 3,3                           | 3,3 | 18 | 49 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |      |
| FD20-SA034-30                       | -                  | 3,4                           | 3,4 | 20 | 52 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA035-30                       | -                  | 3,5                           | 3,5 | 20 | 52 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA036-30                       | -                  | 3,6                           | 3,6 | 20 | 52 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |      |
| FD20-SA037-30                       | -                  | 3,7                           | 3,7 | 20 | 52 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA038-30                       | -                  | 3,8                           | 3,8 | 22 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA039-30                       | -                  | 3,9                           | 3,9 | 22 | 55 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |      |
| FD20-SA040-30                       | -                  | 4,0                           | 4,0 | 22 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA041-30                       | -                  | 4,1                           | 4,1 | 22 | 55 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA042-30                       | -                  | 4,2                           | 4,2 | 22 | 55 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |      |
| FD20-SA043-30                       | -                  | 4,3                           | 4,3 | 24 | 58 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA044-30                       | -                  | 4,4                           | 4,4 | 24 | 58 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA045-30                       | -                  | 4,5                           | 4,5 | 24 | 58 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |      |
| FD20-SA046-30                       | -                  | 4,6                           | 4,6 | 24 | 58 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA047-30                       | -                  | 4,7                           | 4,7 | 24 | 58 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA048-30                       | -                  | 4,8                           | 4,8 | 26 | 62 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |      |
| FD20-SA049-30                       | -                  | 4,9                           | 4,9 | 26 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA050-30                       | -                  | 5,0                           | 5,0 | 26 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |
| FD20-SA052-30                       | -                  | 5,2                           | 5,2 | 26 | 62 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |      |
| FD20-SA055-30                       | -                  | 5,5                           | 5,5 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD20

## VHM-Bohrer 4xD ohne IK / Solid carbide drill 4xD without internal coolant

 Bohrdurchmesser / Cutting dia.: 1,5mm - 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 120°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |  |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |  |
| FD20-SA058-30                       | -                  | 5,8                           | 5,8  | 28 | 66  | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |  |
| FD20-SA060-30                       | -                  | 6,0                           | 6,0  | 28 | 66  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |  |
| FD20-SA065-30                       | -                  | 6,5                           | 6,5  | 31 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA068-30                       | -                  | 6,8                           | 6,8  | 34 | 74  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA070-30                       | -                  | 7,0                           | 7,0  | 34 | 74  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA075-30                       | -                  | 7,5                           | 7,5  | 34 | 74  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA080-30                       | -                  | 8,0                           | 8,0  | 37 | 79  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |  |
| FD20-SA085-30                       | -                  | 8,5                           | 8,5  | 37 | 79  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA088-30                       | -                  | 8,8                           | 8,8  | 40 | 84  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA090-30                       | -                  | 9,0                           | 9,0  | 40 | 84  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA095-30                       | -                  | 9,5                           | 9,5  | 40 | 84  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA100-30                       | -                  | 10,0                          | 10,0 | 43 | 89  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |  |
| FD20-SA102-30                       | -                  | 10,2                          | 10,2 | 43 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA105-30                       | -                  | 10,5                          | 10,5 | 43 | 89  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA110-30                       | -                  | 11,0                          | 11,0 | 47 | 95  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA115-30                       | -                  | 11,5                          | 11,5 | 47 | 95  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD20-SA120-30                       | -                  | 12,0                          | 12,0 | 51 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit / Tensile strength Rm [N/mm²] | Härte / Hardness [HB / HRC] | Schnittgeschwindigkeiten / Cutting speed min. opt. max. |     |     |
|----------------------------------|-----------------------------------------------------------------------------|---------------------------------------------|-----------------------------|---------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                       | < 230                       | 60                                                      | 70  | 80  |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                      | < 350                       | 50                                                      | 60  | 70  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                      | < 380                       | -                                                       | -   | -   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                       | < 220                       | 20                                                      | 25  | 30  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                       | < 240                       | 20                                                      | 25  | 30  |
| K1                               | Grauguß / Grey cast iron                                                    | -                                           | < 280                       | 70                                                      | 80  | 90  |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                           | < 320                       | 60                                                      | 70  | 80  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                       | < 110                       | 120                                                     | 160 | 200 |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                       | < 130                       | 170                                                     | 200 | 230 |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                      | < 350                       | 10                                                      | 15  | 20  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                      | < 400                       | 10                                                      | 15  | 20  |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                           | < 54 HRC                    | -                                                       | -   | -   |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                           | 52-60 HRC                   | -                                                       | -   | -   |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                           | > 58 HRC                    | -                                                       | -   | -   |
| G                                | Graphit / Graphite                                                          | -                                           | -                           | -                                                       | -   | -   |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



## FireDrill FD21

## VHM-Bohrer 8xD ohne IK / Solid carbide drill 8xD without internal coolant

 Bohrdurchmesser / Cutting dia.: 2,0mm – 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 120°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |  |
|-------------------------------------|--------------------|-------------------------------|-----|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |  |
| FD21-LA020-30                       | -                  | 2,0                           | 2,0 | 24 | 49  | 2 | 0,10                                                                        | 0,08 | 0,06 | 0,05 | 0,04 | 0,16 | 0,13 | 0,13 | 0,16 | 0,05 | 0,04 | 0,04 | 0,03 |  |
| FD21-LA021-30                       | -                  | 2,1                           | 2,1 | 24 | 49  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA022-30                       | -                  | 2,2                           | 2,2 | 27 | 53  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA023-30                       | -                  | 2,3                           | 2,3 | 27 | 53  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA024-30                       | -                  | 2,4                           | 2,4 | 30 | 57  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA025-30                       | -                  | 2,5                           | 2,5 | 30 | 57  | 2 | 0,13                                                                        | 0,10 | 0,08 | 0,06 | 0,05 | 0,16 | 0,16 | 0,16 | 0,16 | 0,06 | 0,05 | 0,05 | 0,04 |  |
| FD21-LA026-30                       | -                  | 2,6                           | 2,6 | 30 | 57  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA027-30                       | -                  | 2,7                           | 2,7 | 33 | 61  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA028-30                       | -                  | 2,8                           | 2,8 | 33 | 61  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA029-30                       | -                  | 2,9                           | 2,9 | 33 | 61  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA030-30                       | -                  | 3,0                           | 3,0 | 33 | 61  | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |  |
| FD21-LA031-30                       | -                  | 3,1                           | 3,1 | 36 | 65  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA032-30                       | -                  | 3,2                           | 3,2 | 36 | 65  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA033-30                       | -                  | 3,3                           | 3,3 | 36 | 65  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA034-30                       | -                  | 3,4                           | 3,4 | 39 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA035-30                       | -                  | 3,5                           | 3,5 | 39 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA036-30                       | -                  | 3,6                           | 3,6 | 39 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA037-30                       | -                  | 3,7                           | 3,7 | 39 | 70  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA038-30                       | -                  | 3,8                           | 3,8 | 43 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA039-30                       | -                  | 3,9                           | 3,9 | 43 | 75  | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |  |
| FD21-LA040-30                       | -                  | 4,0                           | 4,0 | 43 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA041-30                       | -                  | 4,1                           | 4,1 | 43 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA042-30                       | -                  | 4,2                           | 4,2 | 43 | 75  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA043-30                       | -                  | 4,3                           | 4,3 | 47 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA044-30                       | -                  | 4,4                           | 4,4 | 47 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA045-30                       | -                  | 4,5                           | 4,5 | 47 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA046-30                       | -                  | 4,6                           | 4,6 | 47 | 80  | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |  |
| FD21-LA047-30                       | -                  | 4,7                           | 4,7 | 47 | 80  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA048-30                       | -                  | 4,8                           | 4,8 | 52 | 86  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA049-30                       | -                  | 4,9                           | 4,9 | 52 | 86  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA050-30                       | -                  | 5,0                           | 5,0 | 52 | 86  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA055-30                       | -                  | 5,5                           | 5,5 | 57 | 93  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |  |
| FD21-LA060-30                       | -                  | 6,0                           | 6,0 | 57 | 93  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA065-30                       | -                  | 6,5                           | 6,5 | 63 | 101 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |
| FD21-LA068-30                       | -                  | 6,8                           | 6,8 | 69 | 109 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |  |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

## FireDrill FD21

## VHM-Bohrer 8xD ohne IK / Solid carbide drill 8xD without internal coolant

 Bohrdurchmesser / Cutting dia.: 2,0mm - 12mm  
 Typ / Type: DIN 6535 HA

 Spitzenwinkel / Point angle: 120°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: -


| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| FD21-LA070-30                       | -                  | 7,0                           | 7,0  | 69  | 109 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| FD21-LA075-30                       | -                  | 7,5                           | 7,5  | 69  | 109 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA080-30                       | -                  | 8,0                           | 8,0  | 75  | 117 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA085-30                       | -                  | 8,5                           | 8,5  | 75  | 117 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD21-LA090-30                       | -                  | 9,0                           | 9,0  | 81  | 125 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA095-30                       | -                  | 9,5                           | 9,5  | 91  | 125 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA100-30                       | -                  | 10,0                          | 10,0 | 87  | 133 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| FD21-LA102-30                       | -                  | 10,2                          | 10,2 | 87  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA105-30                       | -                  | 10,5                          | 10,5 | 87  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA110-30                       | -                  | 11,0                          | 11,0 | 94  | 142 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA115-30                       | -                  | 11,5                          | 11,5 | 94  | 142 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| FD21-LA120-30                       | -                  | 12,0                          | 12,0 | 101 | 151 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed<br>min. opt. max. |     |     |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------|-----|-----|
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                                          | < 230                             | 60                                                            | 70  | 80  |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                                         | < 350                             | 50                                                            | 60  | 70  |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                                         | < 380                             | -                                                             | -   | -   |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                                          | < 220                             | 20                                                            | 25  | 30  |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                                          | < 240                             | 20                                                            | 25  | 30  |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                              | < 280                             | 70                                                            | 80  | 90  |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                              | < 320                             | 50                                                            | 60  | 70  |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                                          | < 110                             | 120                                                           | 160 | 200 |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                                          | < 130                             | 170                                                           | 200 | 230 |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 10                                                            | 15  | 20  |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                                         | < 400                             | 10                                                            | 15  | 20  |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | < 54 HRC                          | -                                                             | -   | -   |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | 52-60 HRC                         | -                                                             | -   | -   |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | > 58 HRC                          | -                                                             | -   | -   |
| G                                | Graphit / Graphite                                                          | -                                                              | -                                 | -                                                             | -   | -   |


 D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



# SpeedDrill

## SD10IK / SD12IK

### 3xD + 5xD

VHM-Hochleistungsbohrer

Für Edelstahl, Titan und hochwarmfeste Nickelbasis-Legierungen

Solid carbide high-performance drills

For stainless steel, titanium and super alloys



SpeedDrill SD10IK 

## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD10IK-3A030-30                     | SD10IK-3B030-30    | 3,0                           | 6,0 | 20 | 62 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| SD10IK-3A031-30                     | SD10IK-3B031-30    | 3,1                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A032-30                     | SD10IK-3B032-30    | 3,2                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A033-30                     | SD10IK-3B033-30    | 3,3                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A034-30                     | SD10IK-3B034-30    | 3,4                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A035-30                     | SD10IK-3B035-30    | 3,5                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A036-30                     | SD10IK-3B036-30    | 3,6                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A037-30                     | SD10IK-3B037-30    | 3,7                           | 6,0 | 20 | 62 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A038-30                     | SD10IK-3B038-30    | 3,8                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A039-30                     | SD10IK-3B039-30    | 3,9                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A040-30                     | SD10IK-3B040-30    | 4,0                           | 6,0 | 24 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| SD10IK-3A041-30                     | SD10IK-3B041-30    | 4,1                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A042-30                     | SD10IK-3B042-30    | 4,2                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A043-30                     | SD10IK-3B043-30    | 4,3                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A044-30                     | SD10IK-3B044-30    | 4,4                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A045-30                     | SD10IK-3B045-30    | 4,5                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A046-30                     | SD10IK-3B046-30    | 4,6                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A047-30                     | SD10IK-3B047-30    | 4,7                           | 6,0 | 24 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A048-30                     | SD10IK-3B048-30    | 4,8                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A049-30                     | SD10IK-3B049-30    | 4,9                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A050-30                     | SD10IK-3B050-30    | 5,0                           | 6,0 | 28 | 66 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| SD10IK-3A051-30                     | SD10IK-3B051-30    | 5,1                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A052-30                     | SD10IK-3B052-30    | 5,2                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A053-30                     | SD10IK-3B053-30    | 5,3                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A054-30                     | SD10IK-3B054-30    | 5,4                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A055-30                     | SD10IK-3B055-30    | 5,5                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A056-30                     | SD10IK-3B056-30    | 5,6                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A057-30                     | SD10IK-3B057-30    | 5,7                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A058-30                     | SD10IK-3B058-30    | 5,8                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A059-30                     | SD10IK-3B059-30    | 5,9                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A060-30                     | SD10IK-3B060-30    | 6,0                           | 6,0 | 28 | 66 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| SD10IK-3A061-30                     | SD10IK-3B061-30    | 6,1                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A062-30                     | SD10IK-3B062-30    | 6,2                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A063-30                     | SD10IK-3B063-30    | 6,3                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A064-30                     | SD10IK-3B064-30    | 6,4                           | 8,0 | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD10IK 

## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD10IK-3A065-30                     | SD10IK-3B065-30    | 6,5                           | 8,0  | 34 | 79 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| SD10IK-3A066-30                     | SD10IK-3B066-30    | 6,6                           | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A067-30                     | SD10IK-3B067-30    | 6,7                           | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A068-30                     | SD10IK-3B068-30    | 6,8                           | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A069-30                     | SD10IK-3B069-30    | 6,9                           | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A070-30                     | SD10IK-3B070-30    | 7,0                           | 8,0  | 34 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A071-30                     | SD10IK-3B071-30    | 7,1                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A072-30                     | SD10IK-3B072-30    | 7,2                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A073-30                     | SD10IK-3B073-30    | 7,3                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A074-30                     | SD10IK-3B074-30    | 7,4                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A075-30                     | SD10IK-3B075-30    | 7,5                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A076-30                     | SD10IK-3B076-30    | 7,6                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A077-30                     | SD10IK-3B077-30    | 7,7                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A078-30                     | SD10IK-3B078-30    | 7,8                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A079-30                     | SD10IK-3B079-30    | 7,9                           | 8,0  | 41 | 79 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A080-30                     | SD10IK-3B080-30    | 8,0                           | 8,0  | 41 | 79 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| SD10IK-3A081-30                     | SD10IK-3B081-30    | 8,1                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A082-30                     | SD10IK-3B082-30    | 8,2                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A083-30                     | SD10IK-3B083-30    | 8,3                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A084-30                     | SD10IK-3B084-30    | 8,4                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A085-30                     | SD10IK-3B085-30    | 8,5                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A086-30                     | SD10IK-3B086-30    | 8,6                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A087-30                     | SD10IK-3B087-30    | 8,7                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A088-30                     | SD10IK-3B088-30    | 8,8                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A089-30                     | SD10IK-3B089-30    | 8,9                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A090-30                     | SD10IK-3B090-30    | 9,0                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A091-30                     | SD10IK-3B091-30    | 9,1                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A092-30                     | SD10IK-3B092-30    | 9,2                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A093-30                     | SD10IK-3B093-30    | 9,3                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A094-30                     | SD10IK-3B094-30    | 9,4                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A095-30                     | SD10IK-3B095-30    | 9,5                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A096-30                     | SD10IK-3B096-30    | 9,6                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A097-30                     | SD10IK-3B097-30    | 9,7                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A098-30                     | SD10IK-3B098-30    | 9,8                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A099-30                     | SD10IK-3B099-30    | 9,9                           | 10,0 | 47 | 89 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD10IK 

## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD10IK-3A100-30                     | SD10IK-3B100-30    | 10,0                          | 10,0 | 47 | 89  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| SD10IK-3A101-30                     | SD10IK-3B101-30    | 10,1                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A102-30                     | SD10IK-3B102-30    | 10,2                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A103-30                     | SD10IK-3B103-30    | 10,3                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A104-30                     | SD10IK-3B104-30    | 10,4                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A105-30                     | SD10IK-3B105-30    | 10,5                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A106-30                     | SD10IK-3B106-30    | 10,6                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A107-30                     | SD10IK-3B107-30    | 10,7                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A108-30                     | SD10IK-3B108-30    | 10,8                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A109-30                     | SD10IK-3B109-30    | 10,9                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A110-30                     | SD10IK-3B110-30    | 11,0                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A111-30                     | SD10IK-3B111-30    | 11,1                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A112-30                     | SD10IK-3B112-30    | 11,2                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A113-30                     | SD10IK-3B113-30    | 11,3                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A114-30                     | SD10IK-3B114-30    | 11,4                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A115-30                     | SD10IK-3B115-30    | 11,5                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A116-30                     | SD10IK-3B116-30    | 11,6                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A117-30                     | SD10IK-3B117-30    | 11,7                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A118-30                     | SD10IK-3B118-30    | 11,8                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A119-30                     | SD10IK-3B119-30    | 11,9                          | 12,0 | 55 | 102 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A120-30                     | SD10IK-3B120-30    | 12,0                          | 12,0 | 55 | 102 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| SD10IK-3A122-30                     | SD10IK-3B122-30    | 12,2                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A125-30                     | SD10IK-3B125-30    | 12,5                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A127-30                     | SD10IK-3B127-30    | 12,7                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A128-30                     | SD10IK-3B128-30    | 12,8                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A130-30                     | SD10IK-3B130-30    | 13,0                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A133-30                     | SD10IK-3B133-30    | 13,3                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A135-30                     | SD10IK-3B135-30    | 13,5                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A137-30                     | SD10IK-3B137-30    | 13,7                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A140-30                     | SD10IK-3B140-30    | 14,0                          | 14,0 | 60 | 107 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A142-30                     | SD10IK-3B142-30    | 14,2                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A143-30                     | SD10IK-3B143-30    | 14,3                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A145-30                     | SD10IK-3B145-30    | 14,5                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A147-30                     | SD10IK-3B147-30    | 14,7                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A150-30                     | SD10IK-3B150-30    | 15,0                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD10IK 

## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD10IK-3A152-30                     | SD10IK-3B152-30    | 15,2                          | 16,0 | 65 | 115 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| SD10IK-3A153-30                     | SD10IK-3B153-30    | 15,3                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A155-30                     | SD10IK-3B155-30    | 15,5                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A157-30                     | SD10IK-3B157-30    | 15,7                          | 16,0 | 65 | 115 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A160-30                     | SD10IK-3B160-30    | 16,0                          | 16,0 | 65 | 115 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| SD10IK-3A163-30                     | SD10IK-3B163-30    | 16,3                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A165-30                     | SD10IK-3B165-30    | 16,5                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A169-30                     | SD10IK-3B169-30    | 16,9                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A170-30                     | SD10IK-3B170-30    | 17,0                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A173-30                     | SD10IK-3B173-30    | 17,3                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A175-30                     | SD10IK-3B175-30    | 17,5                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A180-30                     | SD10IK-3B180-30    | 18,0                          | 18,0 | 73 | 123 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A185-30                     | SD10IK-3B185-30    | 18,5                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A189-30                     | SD10IK-3B189-30    | 18,9                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A190-30                     | SD10IK-3B190-30    | 19,0                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A193-30                     | SD10IK-3B193-30    | 19,3                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A195-30                     | SD10IK-3B195-30    | 19,5                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD10IK-3A200-30                     | SD10IK-3B200-30    | 20,0                          | 20,0 | 79 | 131 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



SpeedDrill SD10IK 

## VHM-Bohrer 3xD mit IK / Solid carbide drill 3xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert


 Werkstoffgruppen und Schnittgeschwindigkeiten /  
 Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                             | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed |      |      |
|----------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------|------|------|
|                                  |                                                                             |                                                                |                                   | min.                                        | opt. | max. |
| P1                               | Unlegierter Stahl / Plain carbon steel                                      | < 600                                                          | < 230                             | -                                           | -    | -    |
| P2                               | Legierter Stahl / Alloy Steel                                               | < 1200                                                         | < 350                             | -                                           | -    | -    |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel     | < 1400                                                         | < 380                             | -                                           | -    | -    |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel          | < 680                                                          | < 220                             | 60                                          | 70   | 80   |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                              | < 820                                                          | < 240                             | 60                                          | 70   | 80   |
| K1                               | Grauguß / Grey cast iron                                                    | -                                                              | < 280                             | -                                           | -    | -    |
| K2                               | Sphäroguß / Ductile cast iron                                               | -                                                              | < 320                             | -                                           | -    | -    |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                      | < 250                                                          | < 110                             | -                                           | -    | -    |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                     | < 530                                                          | < 130                             | -                                           | -    | -    |
| S1                               | Wärmefeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 30                                          | 40   | 50   |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta          | < 2100                                                         | < 400                             | 30                                          | 40   | 50   |
| H1                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | < 54 HRC                          | -                                           | -    | -    |
| H2                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | 52-60 HRC                         | -                                           | -    | -    |
| H3                               | Gehärtete Stähle / Hardened steel                                           | -                                                              | > 58 HRC                          | -                                           | -    | -    |
| G                                | Graphit / Graphite                                                          | -                                                              | -                                 | -                                           | -    | -    |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD12IK 

## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |     |    |    |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|-----|----|----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2  | L2 | L1 | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD13IK-5A030-30                     | SD13IK-5B030-30    | 3,0                           | 6,0 | 28 | 66 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,20 | 0,20 | 0,20 | 0,20 | 0,08 | 0,06 | 0,06 | 0,05 |
| SD13IK-5A031-30                     | SD13IK-5B031-30    | 3,1                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A032-30                     | SD13IK-5B032-30    | 3,2                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A033-30                     | SD13IK-5B033-30    | 3,3                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A034-30                     | SD13IK-5B034-30    | 3,4                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A035-30                     | SD13IK-5B035-30    | 3,5                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A036-30                     | SD13IK-5B036-30    | 3,6                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A037-30                     | SD13IK-5B037-30    | 3,7                           | 6,0 | 28 | 66 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A038-30                     | SD13IK-5B038-30    | 3,8                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A039-30                     | SD13IK-5B039-30    | 3,9                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A040-30                     | SD13IK-5B040-30    | 4,0                           | 6,0 | 36 | 74 | 2 | 0,16                                                                        | 0,13 | 0,10 | 0,08 | 0,06 | 0,25 | 0,20 | 0,20 | 0,25 | 0,08 | 0,06 | 0,06 | 0,05 |
| SD13IK-5A041-30                     | SD13IK-5B041-30    | 4,1                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A042-30                     | SD13IK-5B042-30    | 4,2                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A043-30                     | SD13IK-5B043-30    | 4,3                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A044-30                     | SD13IK-5B044-30    | 4,4                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A045-30                     | SD13IK-5B045-30    | 4,5                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A046-30                     | SD13IK-5B046-30    | 4,6                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A047-30                     | SD13IK-5B047-30    | 4,7                           | 6,0 | 36 | 74 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A048-30                     | SD13IK-5B048-30    | 4,8                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A049-30                     | SD13IK-5B049-30    | 4,9                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A050-30                     | SD13IK-5B050-30    | 5,0                           | 6,0 | 44 | 82 | 2 | 0,20                                                                        | 0,16 | 0,13 | 0,10 | 0,08 | 0,32 | 0,25 | 0,25 | 0,32 | 0,10 | 0,08 | 0,08 | 0,06 |
| SD13IK-5A051-30                     | SD13IK-5B051-30    | 5,1                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A052-30                     | SD13IK-5B052-30    | 5,2                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A053-30                     | SD13IK-5B053-30    | 5,3                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A054-30                     | SD13IK-5B054-30    | 5,4                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A055-30                     | SD13IK-5B055-30    | 5,5                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A056-30                     | SD13IK-5B056-30    | 5,6                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A057-30                     | SD13IK-5B057-30    | 5,7                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A058-30                     | SD13IK-5B058-30    | 5,8                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A059-30                     | SD13IK-5B059-30    | 5,9                           | 6,0 | 44 | 82 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A060-30                     | SD13IK-5B060-30    | 6,0                           | 6,0 | 44 | 82 | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| SD13IK-5A061-30                     | SD13IK-5B061-30    | 6,1                           | 8,0 | 53 | 91 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A062-30                     | SD13IK-5B062-30    | 6,2                           | 8,0 | 53 | 91 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A063-30                     | SD13IK-5B063-30    | 6,3                           | 8,0 | 53 | 91 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A064-30                     | SD13IK-5B064-30    | 6,4                           | 8,0 | 53 | 91 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD12IK 

## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD13IK-5A065-30                     | SD13IK-5B065-30    | 6,5                           | 8,0  | 53 | 91  | 2 | 0,25                                                                        | 0,20 | 0,16 | 0,13 | 0,10 | 0,32 | 0,32 | 0,32 | 0,32 | 0,13 | 0,10 | 0,10 | 0,08 |
| SD13IK-5A066-30                     | SD13IK-5B066-30    | 6,6                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A067-30                     | SD13IK-5B067-30    | 6,7                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A068-30                     | SD13IK-5B068-30    | 6,8                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A069-30                     | SD13IK-5B069-30    | 6,9                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A070-30                     | SD13IK-5B070-30    | 7,0                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A071-30                     | SD13IK-5B071-30    | 7,1                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A072-30                     | SD13IK-5B072-30    | 7,2                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A073-30                     | SD13IK-5B073-30    | 7,3                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A074-30                     | SD13IK-5B074-30    | 7,4                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A075-30                     | SD13IK-5B075-30    | 7,5                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A076-30                     | SD13IK-5B076-30    | 7,6                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A077-30                     | SD13IK-5B077-30    | 7,7                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A078-30                     | SD13IK-5B078-30    | 7,8                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A079-30                     | SD13IK-5B079-30    | 7,9                           | 8,0  | 53 | 91  | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A080-30                     | SD13IK-5B080-30    | 8,0                           | 8,0  | 53 | 91  | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,40 | 0,40 | 0,40 | 0,40 | 0,16 | 0,13 | 0,13 | 0,10 |
| SD13IK-5A081-30                     | SD13IK-5B081-30    | 8,1                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A082-30                     | SD13IK-5B082-30    | 8,2                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A083-30                     | SD13IK-5B083-30    | 8,3                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A084-30                     | SD13IK-5B084-30    | 8,4                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A085-30                     | SD13IK-5B085-30    | 8,5                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A086-30                     | SD13IK-5B086-30    | 8,6                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A087-30                     | SD13IK-5B087-30    | 8,7                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A088-30                     | SD13IK-5B088-30    | 8,8                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A089-30                     | SD13IK-5B089-30    | 8,9                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A090-30                     | SD13IK-5B090-30    | 9,0                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A091-30                     | SD13IK-5B091-30    | 9,1                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A092-30                     | SD13IK-5B092-30    | 9,2                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A093-30                     | SD13IK-5B093-30    | 9,3                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A094-30                     | SD13IK-5B094-30    | 9,4                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A095-30                     | SD13IK-5B095-30    | 9,5                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A096-30                     | SD13IK-5B096-30    | 9,6                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A097-30                     | SD13IK-5B097-30    | 9,7                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A098-30                     | SD13IK-5B098-30    | 9,8                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A099-30                     | SD13IK-5B099-30    | 9,9                           | 10,0 | 61 | 103 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD12IK 

## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung /<br>Designation |                    | Abmessungen / Dimensions [mm] |      |    |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------------|-------------------------------|------|----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)                  | Schaft B (Shank B) | D1                            | D2   | L2 | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD13IK-5A100-30                     | SD13IK-5B100-30    | 10,0                          | 10,0 | 61 | 103 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| SD13IK-5A101-30                     | SD13IK-5B101-30    | 10,1                          | 12,0 | 71 | 118 | 2 | 0,32                                                                        | 0,25 | 0,20 | 0,16 | 0,13 | 0,50 | 0,40 | 0,40 | 0,50 | 0,16 | 0,13 | 0,13 | 0,10 |
| SD13IK-5A102-30                     | SD13IK-5B102-30    | 10,2                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A103-30                     | SD13IK-5B103-30    | 10,3                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A104-30                     | SD13IK-5B104-30    | 10,4                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A105-30                     | SD13IK-5B105-30    | 10,5                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A106-30                     | SD13IK-5B106-30    | 10,6                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A107-30                     | SD13IK-5B107-30    | 10,7                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A108-30                     | SD13IK-5B108-30    | 10,8                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A109-30                     | SD13IK-5B109-30    | 10,9                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A110-30                     | SD13IK-5B110-30    | 11,0                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A111-30                     | SD13IK-5B111-30    | 11,1                          | 12,0 | 71 | 118 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| SD13IK-5A112-30                     | SD13IK-5B112-30    | 11,2                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A113-30                     | SD13IK-5B113-30    | 11,3                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A114-30                     | SD13IK-5B114-30    | 11,4                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A115-30                     | SD13IK-5B115-30    | 11,5                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A116-30                     | SD13IK-5B116-30    | 11,6                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A117-30                     | SD13IK-5B117-30    | 11,7                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A118-30                     | SD13IK-5B118-30    | 11,8                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A119-30                     | SD13IK-5B119-30    | 11,9                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A120-30                     | SD13IK-5B120-30    | 12,0                          | 12,0 | 71 | 118 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A122-30                     | SD13IK-5B122-30    | 12,2                          | 14,0 | 77 | 124 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| SD13IK-5A125-30                     | SD13IK-5B125-30    | 12,5                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A127-30                     | SD13IK-5B127-30    | 12,7                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A128-30                     | SD13IK-5B128-30    | 12,8                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A130-30                     | SD13IK-5B130-30    | 13,0                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A133-30                     | SD13IK-5B133-30    | 13,3                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A135-30                     | SD13IK-5B135-30    | 13,5                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A137-30                     | SD13IK-5B137-30    | 13,7                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A140-30                     | SD13IK-5B140-30    | 14,0                          | 14,0 | 77 | 124 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A142-30                     | SD13IK-5B142-30    | 14,2                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A143-30                     | SD13IK-5B143-30    | 14,3                          | 16,0 | 83 | 133 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| SD13IK-5A145-30                     | SD13IK-5B145-30    | 14,5                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A147-30                     | SD13IK-5B147-30    | 14,7                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A150-30                     | SD13IK-5B150-30    | 15,0                          | 16,0 | 83 | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD12IK 

## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



| Artikelbezeichnung / Designation |                    | Abmessungen / Dimensions [mm] |      |     |     |   | Schnittdaten / Cutting data f [mm/rev]<br>Materialgruppen / Material groups |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------------|--------------------|-------------------------------|------|-----|-----|---|-----------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Schaft A (Shank A)               | Schaft B (Shank B) | D1                            | D2   | L2  | L1  | Z | P1                                                                          | P2   | P3   | M1   | M2   | K1   | K2   | N1   | N2   | S1   | S2   | H1   | H2   |
| SD13IK-5A152-30                  | SD13IK-5B152-30    | 15,2                          | 16,0 | 83  | 133 | 2 | 0,40                                                                        | 0,32 | 0,25 | 0,20 | 0,16 | 0,63 | 0,50 | 0,50 | 0,63 | 0,20 | 0,16 | 0,16 | 0,13 |
| SD13IK-5A153-30                  | SD13IK-5B153-30    | 15,3                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A155-30                  | SD13IK-5B155-30    | 15,5                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A157-30                  | SD13IK-5B157-30    | 15,7                          | 16,0 | 83  | 133 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A160-30                  | SD13IK-5B160-30    | 16,0                          | 16,0 | 83  | 133 | 2 | 0,50                                                                        | 0,40 | 0,32 | 0,25 | 0,20 | 0,63 | 0,63 | 0,63 | 0,63 | 0,25 | 0,20 | 0,20 | 0,16 |
| SD13IK-5A163-30                  | SD13IK-5B163-30    | 16,3                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A165-30                  | SD13IK-5B165-30    | 16,5                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A169-30                  | SD13IK-5B169-30    | 16,9                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A170-30                  | SD13IK-5B170-30    | 17,0                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A173-30                  | SD13IK-5B173-30    | 17,3                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A175-30                  | SD13IK-5B175-30    | 17,5                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A180-30                  | SD13IK-5B180-30    | 18,0                          | 18,0 | 93  | 143 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A185-30                  | SD13IK-5B185-30    | 18,5                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A189-30                  | SD13IK-5B189-30    | 18,9                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A190-30                  | SD13IK-5B190-30    | 19,0                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A193-30                  | SD13IK-5B193-30    | 19,3                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A195-30                  | SD13IK-5B195-30    | 19,5                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |
| SD13IK-5A200-30                  | SD13IK-5B200-30    | 20,0                          | 20,0 | 101 | 153 | 2 |                                                                             |      |      |      |      |      |      |      |      |      |      |      |      |

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request

SpeedDrill SD12IK 

## VHM-Bohrer 5xD mit IK / Solid carbide drill 5xD with internal coolant

Bohrdurchmesser / Cutting dia.: 3,0mm - 20mm  
 Typ / Type: DIN 6535 HA  
 DIN 6535 HE

Spitzenwinkel / Point angle: 140°  
 Drallwinkel / Helix angle: 30°  
 Beschichtung / Coating: AlCr-basiert



### Werkstoffgruppen und Schnittgeschwindigkeiten / Material groups and cutting speed

| Werkstoffgruppe / Material group |                                                                            | Zugfestigkeit /<br>Tensile strength<br>Rm [N/mm <sup>2</sup> ] | Härte /<br>Hardness<br>[HB / HRC] | Schnittgeschwindigkeiten /<br>Cutting speed |      |      |
|----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|---------------------------------------------|------|------|
|                                  |                                                                            |                                                                |                                   | min.                                        | opt. | max. |
| P1                               | Unlegierter Stahl / Plain carbon steel                                     | < 600                                                          | < 230                             | -                                           | -    | -    |
| P2                               | Legierter Stahl / Alloy Steel                                              | < 1200                                                         | < 350                             | -                                           | -    | -    |
| P3                               | Hochlegierter Stahl und Werkzeugstahl / High alloy steel and tool steel    | < 1400                                                         | < 380                             | -                                           | -    | -    |
| M1                               | Aust. und Ferr. rostfreie Stähle / Aust. and Ferr. Stainless steel         | < 680                                                          | < 220                             | 60                                          | 70   | 80   |
| M2                               | Mart. rostfreie Stähle / Mart. Stainless steel                             | < 820                                                          | < 240                             | 60                                          | 70   | 80   |
| K1                               | Grauguß / Grey cast iron                                                   | -                                                              | < 280                             | -                                           | -    | -    |
| K2                               | Sphäroguß / Ductile cast iron                                              | -                                                              | < 320                             | -                                           | -    | -    |
| N1                               | Nichteisenmetalle / Non-ferrous alloys                                     | < 250                                                          | < 110                             | -                                           | -    | -    |
| N2                               | Aluminiumlegierungen / Aluminium alloys                                    | < 530                                                          | < 130                             | -                                           | -    | -    |
| S1                               | Warmfeste Leg. Fe, Ni und Co / High temperature alloys Fe, Ni and Co based | < 3300                                                         | < 350                             | 30                                          | 40   | 50   |
| S2                               | Titan Legierungen Alpha und Beta / Titanium alloys; Alpha and Beta         | < 2100                                                         | < 400                             | 30                                          | 40   | 50   |
| H1                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | < 54 HRC                          | -                                           | -    | -    |
| H2                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | 52-60 HRC                         | -                                           | -    | -    |
| H3                               | Gehärtete Stähle / Hardened steel                                          | -                                                              | > 58 HRC                          | -                                           | -    | -    |
| G                                | Graphit / Graphite                                                         | -                                                              | -                                 | -                                           | -    | -    |



D1 = Durchmesser  
 D2 = Schaftdurchmesser  
 L1 = Gesamtlänge  
 L2 = Spiralnutlänge

Andere Abmessungen und Schaftformen auf Anfrage / Other dimensions and shank designs on request



Detaillierte Informationen zu unseren Produkten erhalten Sie unter:

[www.goldberg-tech.de](http://www.goldberg-tech.de)

**Precision reached  
with best technology.**