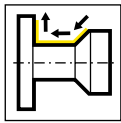
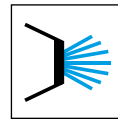


Übersicht Anwendungen Modulare Systeme

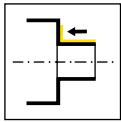
Overview Application Modular Systems



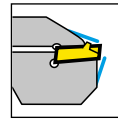
Kopierdrehen außen
Profiling external



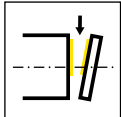
Innere Kühlmittelzufuhr
Internal cooling



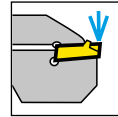
Längsdrehen außen
Side turning external



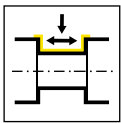
Zielgerichtete Kühlung
Targeted coolant



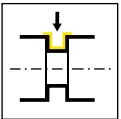
Abstechen
Parting off



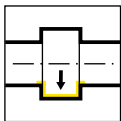
Kühlung durch die Schneide
Coolant through the insert



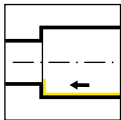
Einstechen und Längsdrehen
Grooving and side turning



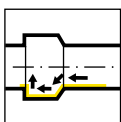
Einstechen außen
Grooving external



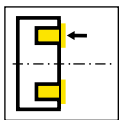
Einstechen innen
Grooving internal



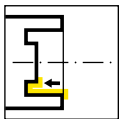
Bohrung ausdrehen innen
Boring internal



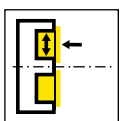
Bohrung ausdrehen Kontur
Boring and profiling



Einstechen axial
Grooving axial



Einstechen axial vor Mitte
Grooving axial in front of center



Längsdrehen axial
Side turning axial

Übersicht Anwendungen Bohren/Reiben

Overview Application Drilling/Reaming



	Bohrtiefen Depth of bore		Drallwinkel Helix angle
	Werkstoff P Material P		Standard Bohrer Standard drill
	Werkstoff M Material M		Spitzenwinkel Point angle
	Bohrung Ausdrehen innen Internal boring		Innenkühlung Bohren Internal coolant drilling
	Längsdrehen außen External side turning		Innenkühlung Internal coolant
	Plandrehen Face turning		Zwischenbüchse kühlmitteldicht Intermediate sleeve coolant tight
	Bohrung Kontur Ausdrehen Boring and profiling		Peripheriekühlung Zwischenbüchse Intermediate sleeve peripheral cooling
	Drehen innen Fase Internal boring and grooving chamfer		Kühlung für Schulterbohrung Coolant for shoulder boring
	Fasen innen Internal chamfering		Kühlung für Sacklochbohrung lateral Coolant for blind hole lateral
	Axialstechen Face grooving		Kühlung für Sacklochbohrung zentral Coolant for blind hole central
	Axialstechen vor der Mitte innen Internal face grooving in front of center		Kühlung für Durchgangsbohrung Coolant for through hole
	Axialstechen mit Bund Axial grooving with collar		Zwischenbüchse mit verstärktem Bund Intermediate sleeve with reinforced collar
	Zähnezahlen Numbers of teeth		axiale Längenverstellung axial length adjustment

Übersicht Anwendungen Bohren/Reiben

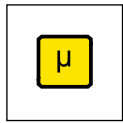
Overview Application Drilling/Reaming



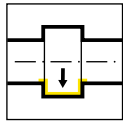
	Urma		nicht warmschrumpfen do not shrink
	Beta-Modul		Rundlauf einstellbar Adjustable run-out
	Intramax K		axialer Pendelausgleich axial pendulum element
	Intramax G		Rundlauf über VDR Run-out over VDR
	Verzahnung gerade Straight fluted		Geometrie H Geometry H
	Verzahnung linksschräg Left helical fluted		Schaftformen Shank forms
	Digital		Schaftform DIN ISO 12164-1 Shank form
	Bohrung Datenträger DIN69973 Bore hole for data carrier		Schaftform DIN ISO 12164-1 Shank form
	Länge einstellbar Length adjustable		Schaftform DIN ISO 7388-1 AD/AF Shank form
	Verstellbereich metrisch Adjustment range metric		Schaftform DIN ISO 7388-2 JD Shank form
	maximale Drehzahl Number of revolutions maximum		Schaftform ISO 26623-1 Shank form
	analog		
	Verstellung metrisch Adjustment metric		

Übersicht Anwendungen Drehen

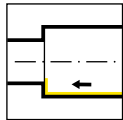
Overview Application Turning



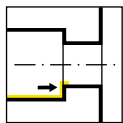
μ Finish



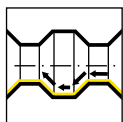
Einstechen innen
Internal grooving



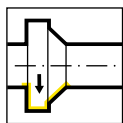
Bohrung Ausdrehen innen
Internal boring



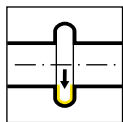
Rückwärtsdrehen innen
Internal back turning



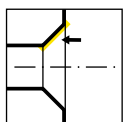
Ausdrehen und Fasen innen
Internal profiling and chamfering



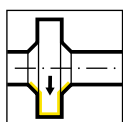
Vorstechen und Fasen innen
Internal pre-grooving and chamfering



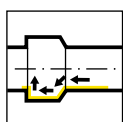
Einstechen Vollradius innen
Internal grooving full radius



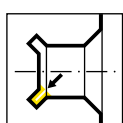
Fasen innen
Internal chamfering



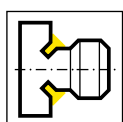
Einstechen mit Fase innen
Internal grooving with chamfer



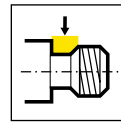
Bohrung Kontur Ausdrehen
Boring and profiling



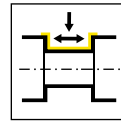
Eckenfreistich innen
Internal corner relief



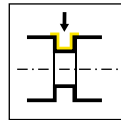
Eckenfreistich außen
External corner relief



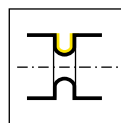
Gewindefreistich
Corner thread relief



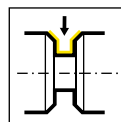
Einstechen Längsdrehen
Grooving and side turning



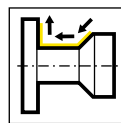
Einstechen außen
Grooving external



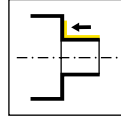
Einstechen Vollradius außen
External grooving full radius



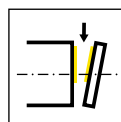
Einstechen mit NAKF
External grooving with NAKF



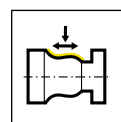
Kopierdrehen außen
External profiling



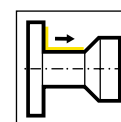
Längsdrehen außen
External side turning



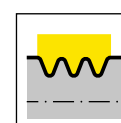
Abstechen
Parting off



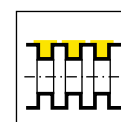
Kopierdrehen
Profiling



Rückwärtsdrehen außen
External back turning



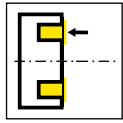
Poly-V-Riemennut
Poly-V-belt grooves



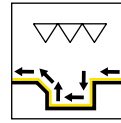
Mehrfachstechen
Multiple grooving

Übersicht Anwendungen Drehen

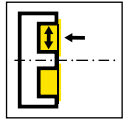
Overview Application Turning



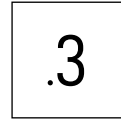
Axialstechen
Face grooving



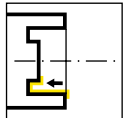
Feindrehen
Fine turning



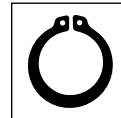
Axialstechen Längsdrehen
Faced side turning



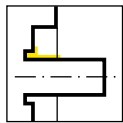
.3
Geometrieformen
Kind of geometry



Axialstechen vor der Mitte innen
Internal face grooving in front of center



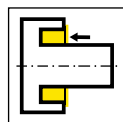
Seegerringnuten
Circlip grooves



Axialstechen hinter der Mitte innen
Internal face grooving behind center



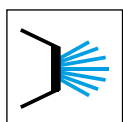
Speed Forming



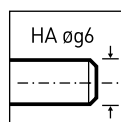
Axialstechen mit Bund
Face grooving with collar

Übersicht Anwendungen Kühlung und Schaftform

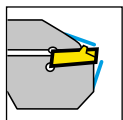
Overview Application Coolant and Shank Form



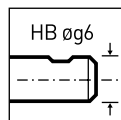
Innenkühlung
Internal coolant



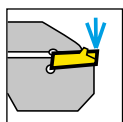
Schaftform HA
Shank form HA



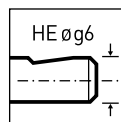
Zielgerichtete Kühlung
Targeted coolant



Schaftform HB
Shank form HB



Kühlung durch die Schneidplatte
Coolant through insert



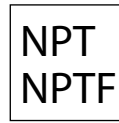
Schaftform HE
Shank form HE

Übersicht Anwendungen Gewindedrehen

Overview Application Threading



Gewinde Teilprofil
Partial profile thread



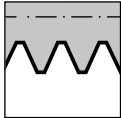
NPT-Rohrgewinde
National pipe thread



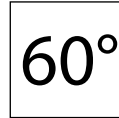
Gewinde Vollprofil
Full profile thread



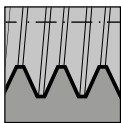
Panzerrohrgewinde
Steel conduit thread



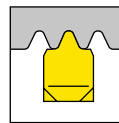
Gewinde außen
External thread



Metrisches ISO-Gewinde
Metric ISO thread



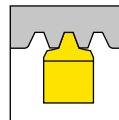
Gewinde innen
Internal thread



Whitworth-Rohrgewinde
Whitworth pipe thread



Whitworth-Rohrgewinde BSW/BSF
Whitworth pipe thread BSW/BSF



Trapezgewinde
Trapezoidal thread



Unified-Gewinde
Unified thread

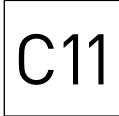
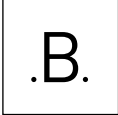
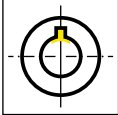
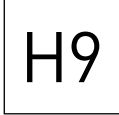
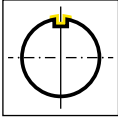
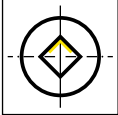
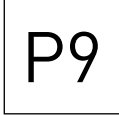
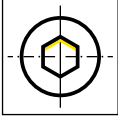
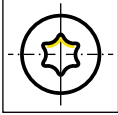
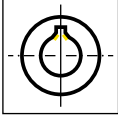
Keine Unterlegplatte erforderlich. Sämtliche HORN-Gewindeprofile sind mit einem **KEGELMANTEL-FREISCHLIFF** versehen.

No shims necessary. All HORN thread profiles are manufactured with full ground radial clearance.

Übersicht Anwendungen Nutstoßen

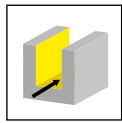
Overview Application Broaching



	Geometrie A Geometry A		Toleranzklasse C11 Tolerance class C11
	Geometrie B Geometry B		Toleranzklasse D10 Tolerance class D10
	Nutstoßen innen Internal broaching		Toleranzklasse H9 Tolerance class H9
	Nutstoßen außen External broaching		Toleranzklasse JS9 Tolerance class JS9
	Nutstoßen Vierkant innen Internal broaching Square		Toleranzklasse P9 Tolerance class P9
	Nutstoßen Sechskant innen Internal broaching Hexagon		
	Nutstoßen Torx innen Internal broaching Torx		
	Nutstoßen Fase Broaching chamfer		

Übersicht Anwendungen Frässysteme

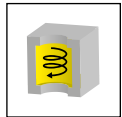
Overview Application Milling Systems



Nutfräsen
Groove milling



Vollradiusnut fräsen
Full radius groove milling



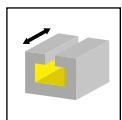
Zirkularnut
Circular groove



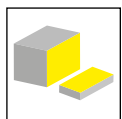
Innennut fräsen
Internal groove milling



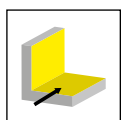
Seegerringnut
Circlip groove



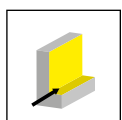
T-Nuten DIN650
T-Slots DIN650



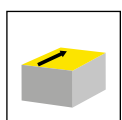
Trennfräsen
Slot milling



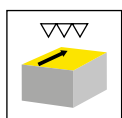
Eckfräsen
Corner milling



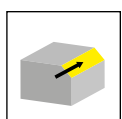
Besäumen
Trimming



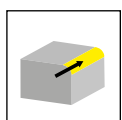
Planfräsen
Face milling



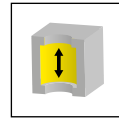
Schlichtfräsen
Finishing



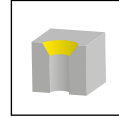
Fasen
Chamfering



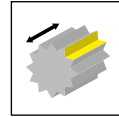
Radius fräsen
Radius milling



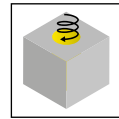
Bohrung fräsen
Bore milling



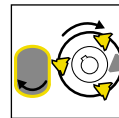
Fase fräsen
Chamfer milling



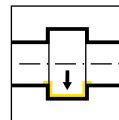
Verzahnung fräsen
Gear milling



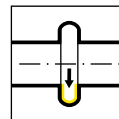
Zirkulareintauchen
Circular plunging



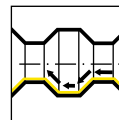
Mehrkantschlagen
Polygon milling



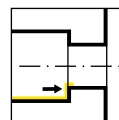
Einsteichen innen
Internal grooving



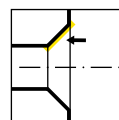
Einsteichen innen Vollradius
Internal grooving full radius



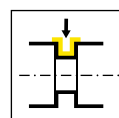
Ausdrehen und Fasen innen
Internal boring and grooving chamfer



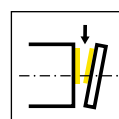
Rückwärtsdrehen innen
Internal back turning



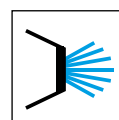
Fasen innen
Internal chamfering



Einsteichen außen
External grooving



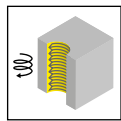
Abstechen
Parting off



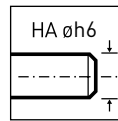
Innenkühlung
Internal coolant

Übersicht Anwendungen Frässysteme

Overview Application Milling Systems



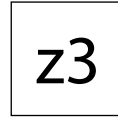
Gewinde fräsen innen
Thread milling internal



Schaftform
Shank form



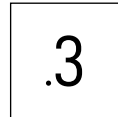
Gewinde Teilprofil
Partial profile thread



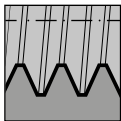
Zähnezahlen
Numbers of teeth



Gewinde Vollprofil
Full profile thread



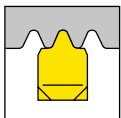
Geometrie .3
Geometry



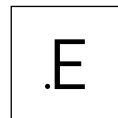
Gewinde innen
Internal thread



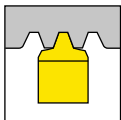
Geometrie .40 für Aluminium
Geometry .40 for aluminium



Gewinde Whitworth
Whitworth thread



Geometrie .E
Geometry



Trapezgewinde
Trapezoidal thread



Geometrie .FY
Geometry



Whitworth-Rohrgewinde
Whitworth pipe thread



National pipe thread



Anstellwinkel 45°
Approach angle 45°



Gewinde metrisch
Metric ISO thread
Anstellwinkel 60° (Kapitel Tangentialfräsen)
Approach angle 60° (Chapter Tangential Milling)



Unified-Gewinde
Unified thread

Übersicht Anwendungen Hochharte Schneidstoffe

Overview Application Ultra-Hard Cutting Materials

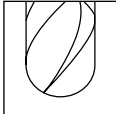
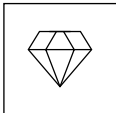
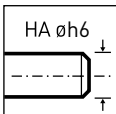
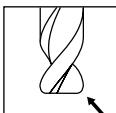
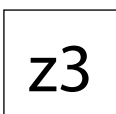
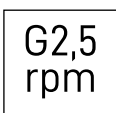
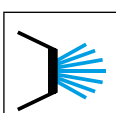
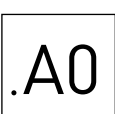


CVD-D	CVD-bestückt CVD tipped		Kopierdrehen außen External profiling
PKD PCD	PKD-bestückt PCD tipped		Eckfräsen Corner broaching
MKD MCD	MKD-bestückt MCD tipped		Planfräsen Face milling
CBN PCBN	CBN-bestückt PCBN tipped		Schlichtfräsen Finishing
	Bohrung Ausdrehen innen Internal boring		Kopierfräsen Glanzbearbeitung Profiling Polishing
	Einstechen innen Internal grooving		Rampe eintauchen Ramping
	Einstechen Vollradius innen Internal grooving full radius		Zirkulareintauchen Circular plunging
	Bohrung Kontur Ausdrehen Boring and profiling		Bohrtiefe Drilling depth
	Längsdrehen außen External side turning		Taschenfräsen Pocket milling
	Einstechen Ggrooving		Besäumen Trimming
	Längsdrehen Side turning		Nutfräsen Groove milling
	Teilschnitt Partial cut		Toleranz h7 Tolerance h7
	Kopierdrehen Profiling		Drallwinkel Helic angle

Übersicht Anwendungen Hochharte Schneidstoffe

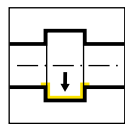
Overview Application Ultra-Hard Cutting Materials



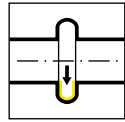
	Formtoleranz Shape tolerance		Vollradius Full radius
	Rundlauf Concentricity		Zentrumschneidend Centre cutting
	Glanzbearbeitung Polishing		Glanzbearbeitung Polishing
	Spanleitstufe neutral 0° Spanwinkel Chipbreaker neutral 0° Chip angle		Schaftformen Shank forms
	Spanleitstufe positiv neutral 5° Spanwinkel Chipbreaker positive-neutral 5° Chip angle		Eckradius Corner radius
	Spanleitstufe positiv neutral 6° Spanwinkel Chipbreaker positive-neutral 6° Chip angle		Leichtbauweise Lightweight
	HORN 3-D Geometrie Bohrungsbearbeitung HORN 3D Chip breaker Machining of bores		Zähnezahlen Numbers of teeth
	HORN 3-D Geometrie normal bis schrappen HORN 3D Chip breaker normal up to roughing		Wuchtgüte Balance quality
	HORN 3-D Geometrie schlichten HORN 3D Chip breaker finishing		Innenkühlung Internal coolant
	Werkstoffgruppe "langspanende Werkstoffe" Material group "long-chipping material"		
	Werkstoffgruppe "kurzspanende Werkstoffe" Material group "short-chipping material"		
	Werkstoffgruppe "weiche Kunststoffe" Material group "soft plastics"		
	Werkstoffgruppe "universell einsetzbar" Material group "universal use"		

Übersicht Anwendungen Supermini und Mini

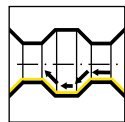
Overview Application Supermini and Mini



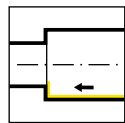
Einstecken innen
Internal grooving



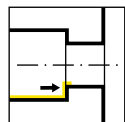
Einstecken innen Vollradius
Internal grooving full radius



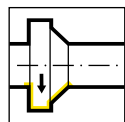
Drehen innen Fase
Internal boring and grooving chamfer



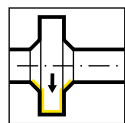
Bohrung Ausdrehen
Internal boring



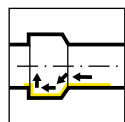
Rückwärtsdrehen innen
Internal back turning



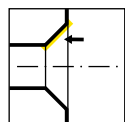
Vorstecken und Fasen innen
Internal pre-grooving and chamfering



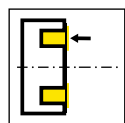
Einstecken mit Fase innen
Internal grooving with chamfer



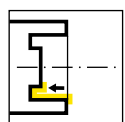
Bohrung Kontur Ausdrehen
Boring and profiling



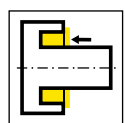
Fasen innen
Internal chamfering



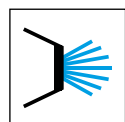
Axialstechen
Face grooving



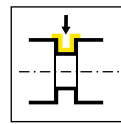
Axialstechen innen vor Mitte
Internal axial grooving in front of center



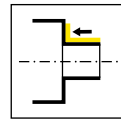
Axialstechen mit Bund
Axial grooving with collar



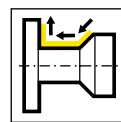
Innenkühlung
Internal coolant



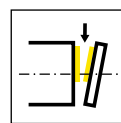
Einstecken außen
External grooving



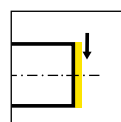
Längsdrehen außen
External side turning



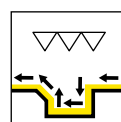
Kopierdrehen außen
External copy turning



Abstechen
Parting off



Plandrehen
Face turning



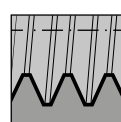
Feindrehen
Fine turning



Gewinde Teilprofil
Partial profile thread



Gewinde Vollprofil
Full profile thread



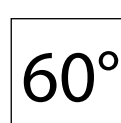
Gewinde innen
Internal thread



BSW
BSF
Whitworth-Rohrgewinde BSW/BSF
Whitworth pipe thread BSW/BSF



NPT
NPTF
National pipe thread



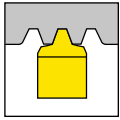
60°
Gewinde metrisch
Metric ISO thread



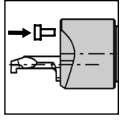
UN
Unified-Gewinde
Unified thread

Übersicht Anwendungen Supermini und Mini

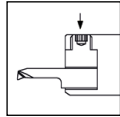
Overview Application Supermini and Mini



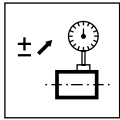
Trapezgewinde
Trapezoidal thread



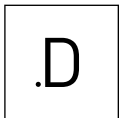
Stirnspannelement
Face clamping



Abhebeelement
Lift element



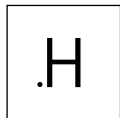
Einrichten
Setup



Geometrie D
Geometry D



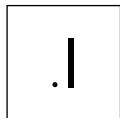
Geometrie FB
Geometry FB



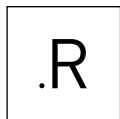
Geometrie H
Geometry H



Geometrie HV
Geometry HV



Geometrie I
Geometry I



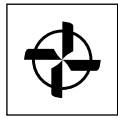
Geometrie R
Geometry R



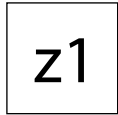
Geometrie GM - Gewindedrehen
Geometry GM - Threading

Übersicht Anwendungen VHM-Fräswerkzeug

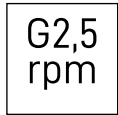
Overview Application Solid Carbide Mills



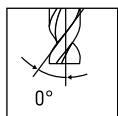
Zentrumsschneidend
Centre cutting



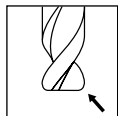
Zähnezahl
Number of teeth



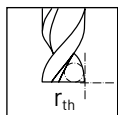
Wuchtgüte
Balance quality



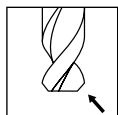
Drallwinkel
Helix angle



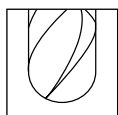
Eckenradius
Corner radius



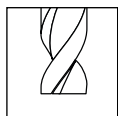
Radius theoretisch
Radius theoretic



Eckfase
Corner chamfer



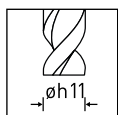
Vollradius
Full radius



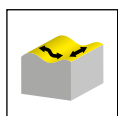
Scharfkantig
Sharp



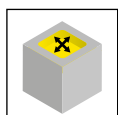
NICHT warmschrumpfen
Do NOT heat shrink



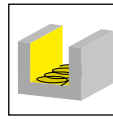
Toleranz
Tolerance



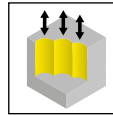
Kopierfräsen
Copy milling



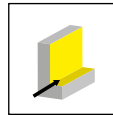
Taschenfräsen
Pocket milling



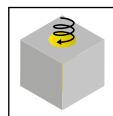
Trochoidalfräsen
Trochoidal milling



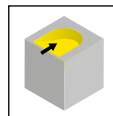
Eintauchen
Diving



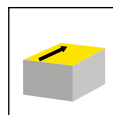
Besäumen
Trimming



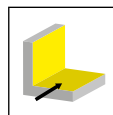
Zirkular eintauchen
Circular plunging



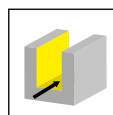
Rampe eintauchen
Ramping



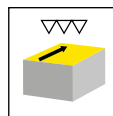
Planfräsen
Face milling



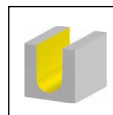
Eckfräsen
Corner milling



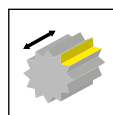
Vollnut
Slot milling



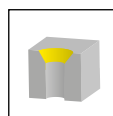
Schlichtfräsen
Finishing



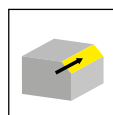
Nutfräsen Vollradius
Full radius groove milling



Verzahnungsfräsen
Gear milling



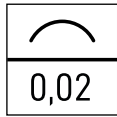
Fase fräsen
Chamfer milling



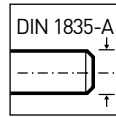
Fasen
Chamfering

Übersicht Anwendungen VHM-Fräswerkzeug

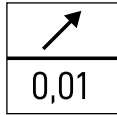
Overview Application Solid Carbide Mills



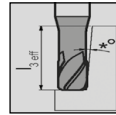
Formtoleranz
Form tolerance



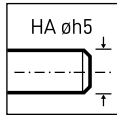
Schaft DIN 1835 A
Shank DIN 1835 A



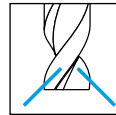
Rundlauf
Run-out



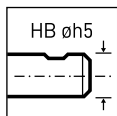
Effektive Nutzlänge
Effective neck length



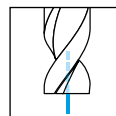
Schaft DIN 6535 HA
Shank DIN 6535 HA



Innenkühlung
Internal cooling



Schaft DIN 6535 HB
Shank DIN 6535 HB



Innenkühlung, zentral
Internal cooling, centered