

**Indexable
Milling**

No. 319.2

AHU High-Feed **Ultra** End Mill
AHUM High-Feed **Ultra** End Mill Modular Type
AHUB High-Feed **Ultra** Bore Type
 $\varnothing 16 \sim \varnothing 63 \cdot$ High Feed Cutting (HFC)



Indexable Milling Tools



HIGH-FEED ULTRA END MILL

- 1 Main cutting forces are reduced by the unique high rake geometry
- 2 Ramp milling is possible
- 3 30% increased rigidity over conventional indexable end-mills due to the utilization of a special steel material and chip pocket geometry
- 4 Through tool coolant is available
- 5 New substrate and coating technology has been adopted which allows longer tool-life and the ability to use higher cutting speeds



HIGH-FEED ULTRA END MILL

- 1 Durch die einzigartige hochpositive Schneidengeometrie des AHU High Feed Ultra wird der Schnittdruck erheblich reduziert
- 2 Auch Fräsoptionen über Rampe sind möglich
- 3 Die Verwendung eines speziellen Stahls und einer neu entwickelten Spannkammer-Geometrie erhöhte die Steifigkeit des AHU High Feed Ultra gegenüber konventionellen WSP-Haltern um 30%
- 4 Zusätzlich verfügt der AHU High Feed Ultra über innen liegende Kühlkanäle
- 5 Durch das neue Substrat der Wendeschneidplatten in Verbindung mit einer neuen Beschichtungstechnologie ermöglicht der AHU High Feed Ultra wesentlich höhere Schnittgeschwindigkeiten bei gleichzeitig längeren Standzeiten



HIGH-FEED ULTRA END MILL

- 1 Maggiore stabilità e minori forze di taglio grazie alla nuova geometria positiva della spoglia.
- 2 La fresatura in rampa è possibile
- 3 30 % maggiore rigidità a confronto con frese convenzionali grazie alla particolare geometria del collo rompitrucolo e una microfusione di acciaio del corpo fresa.
- 4 Refrigerante attraverso il corpo fresa disponibile
- 5 La combinazione dello sviluppo di una micrograna particolare con l'ultimo sviluppo di rivestimenti rende possibile un grande allungamento di vita dell'utensile e l'utilizzo di velocità di taglio più elevate.



HIGH-FEED ULTRA END MILL

- 1 El esfuerzo de corte se reduce gracias a una exclusiva geometría altamente positiva.
- 2 Capaz de mecanizar en rampa
- 3 30% más de rigidez que herramientas de plaqueta convencionales gracias a la utilización de un acero especial y a la geometría del canal de evacuación de viruta
- 4 Dispone de canal de refrigeración interior.
- 5 La combinación de sustratos y recubrimientos de última tecnología permite una mayor vida de herramienta y la capacidad de usar velocidades de corte mayores



HIGH-FEED ULTRA END MILL

- 1 L'angle de dépouille très prononcé permet à lui seul de réduire la majeure partie des efforts de coupe.
- 2 L'usinage de rampes est possible (ramping).
- 3 Rigidité accrue de 30% par rapport aux fraises à plaquettes rapportées due à l'utilisation d'un acier spécial et à la forme des poches à copeaux.
- 4 Deux versions de corps sont disponibles : avec ou sans arrosage au centre.
- 5 Nous avons développés une nouvelle nuance et une nouvelle technologie de revêtement générant une durée de vie supérieure et une augmentation significative des vitesses de coupe.



Indexable Milling Tools

Nano Coating (TiSiN) **TH**



TH (TiSiN) Nano PVD Coating

The new "Nano-composite" coating material offers extraordinary heat resistance and hardness due to its new composite layer consisting of Nano-crystal material.



Die neue TH (TiSiN) Nano PVD-Beschichtung

Das neue "Nano-composite"-Beschichtungsmaterial, eine neuartige Misch-Beschichtung bestehend aus einem Nano-Kristall-Material, bietet eine bemerkenswert hohe Hitzebeständigkeit und Härte



TH (TiSiN) Nano PVD Rivestimento

Il nuovo nano-rivestimento rende possibile una resistenza al calore e alla durezza straordinaria a causa di una nano-cristallo composizione dello strato.



TH (TiSiN) Nano Recubrimiento PVD

El nuevo "Nano-Recubrimiento" ofrece una extraordinaria dureza y resistencia al calor gracias a su composición basada en materiales Nano-Cristalinos.



TH (TiSiN) Revêtement Nano PVD

Le nouveau revêtement "Nano-composite" apporte une extraordinaire résistance en terme de dureté et de température grâce à sa structure Nano-crystalline.

Hybrid Coating (TiBoN) **TB**

TB (TiBoN) Hybrid Coating

This new "Hybrid" coating offers excellent lubrication under high temperature applications. It is the worlds first development to create this type of "Hybrid" material

Die neue TB (TiBoN) Hybrid-Beschichtung

Diese neue, und bislang einmalige, "Hybrid"-Beschichtung bietet eine exzellente Schmierung bei Fräsoptionen mit hohen Temperaturen

TB (TiBoN) Hybrid Rivestimento

Il nuovo "Hybrid"-rivestimento rende possibile una lubrificazione straordinaria sotto temperature di taglio elevate. HITACHI TOOL ha sviluppato come prima azienda mondiale questo tipo di "Hybrid"-rivestimento (TiBoN).

TB (TiBoN) Recubrimiento Híbrido

Este nuevo recubrimiento "Híbrido" ofrece una excelente lubricación en aplicaciones a altas temperaturas. Es el primer recubrimiento en el mundo que utiliza este tipo de material "Híbrido"

TB (TiBoN) Revêtement Hybride

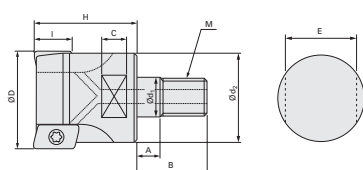
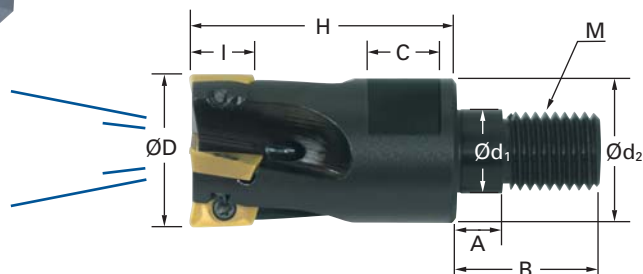
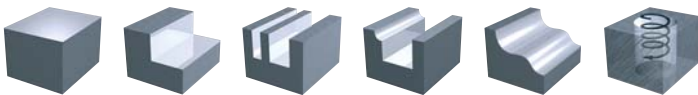
Ce nouveau revêtement "Hybride" apporte un excellent coefficient de glissement lors d'opérations générant de hautes températures. Ce développement est une première mondiale, en effet, jusqu'à ce jours personne n'avait encore créé de matière « Hybride ».

P10	P20	P30	P40
	TB6045		
	PTH30E		
		PTH40H	
K10	K20	K30	K40
PTH13S			
	PTH30E		
		PTH40H	
M10	M20	M30	M40
		PTH30E	
			PTH40H
S10	S20	S30	S40
		PTH30E	

Indexable Milling Tools

AHUM | High-Feed Ultra End Mill Modular

Q max		No. of Teeth	No. of Teeth	No. of Teeth	No. of Teeth
High Efficient	Roughing	2	3	4	5



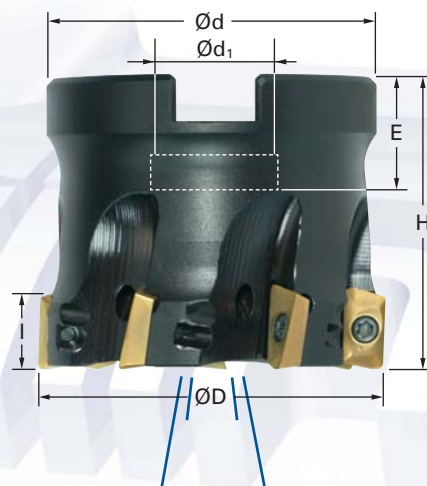
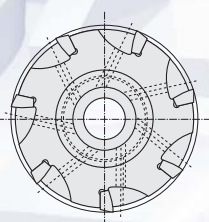
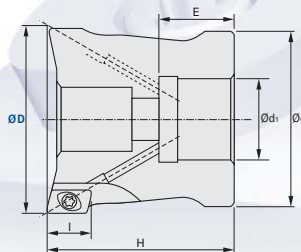
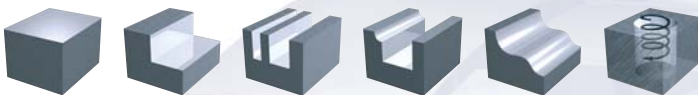
ØD	-0.05 / -0.2
CR	+0.08 / -0.08

ID Code	Item Code	Stock	Flutes	ØD	I	H	Ød1	M	Ød2	A	B	C	E	Inserts
FH 525	AHUM-1016R-2	■	2	16	9	30	8.5	M8	13	5.5	17	8	10	JDMT1003. .R
FH 526	AHUM-1020R-3	■	3	20	9	30	10.5	M10	18	5.5	19	10	15	JDMT1003. .R
FH 527	AHUM-1025R-4	■	4	25	9	35	12.5	M12	21	5.5	22	10	17	JDMT1003. .R
FH 528	AHUM-1032R-5	■	5	32	9	40	17	M16	29	6	23	12	22	JDMT1003. .R

■ = Stock | Germany

AHUB | High-Feed Ultra Bore Type

Q max		No. of Teeth	No. of Teeth	No. of Teeth
High Efficient	Roughing	6	7	8



ØD	-0.1 / -0.2
CR	+0.08 / -0.08

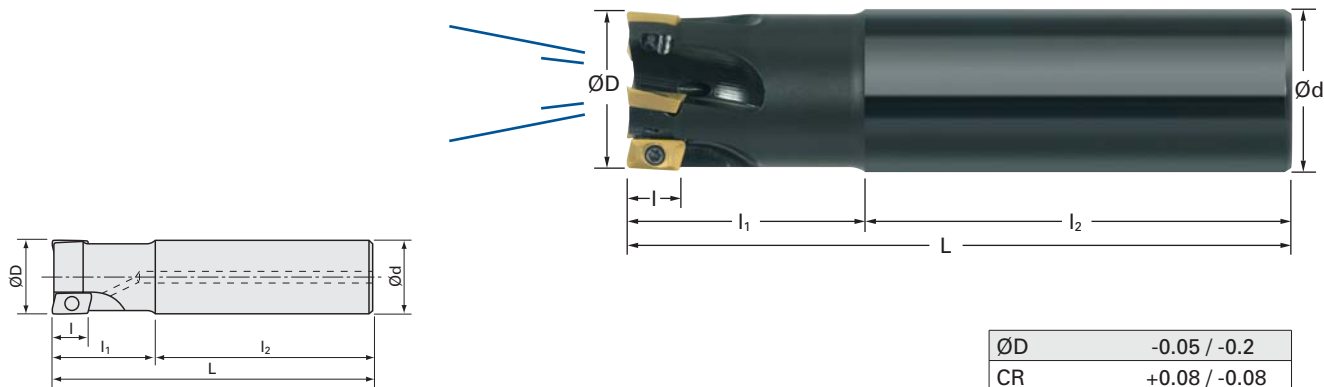
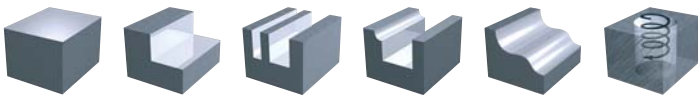
ID Code	Item Code	Stock	Flutes	ØD	I	H	Ød1	Ød2	E	Inserts
FH 534	AHUB-1040RM-6	■	6	40	9	40	16	32	19	JDMT1003. .R
FH 535	AHUB-1050RM-7	■	7	50	9	40	22	47	20	JDMT1003. .R
FH 536	AHUB-1063RM-8	■	8	63	9	40	22	47	20	JDMT1003. .R

■ = Stock | Germany

Indexable Milling Tools

AHU | High-Feed Ultra End Mill

Q max		No. of Teeth	No. of Teeth	No. of Teeth	No. of Teeth
High Efficient	Roughing	2	3	4	5

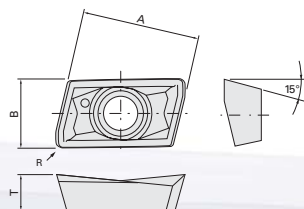


ØD	-0.05 / -0.2
CR	+0.08 / -0.08

ID Code	Item Code	Stock	Flutes	ØD	l	l ₁	l ₂	L	Ød	Inserts
FH 506	AHU-1016R-2	■	2	16	9	30	70	100	16	JDMT1003. .R
FH 507	AHU-1020R-3	■	3	20	9	30	80	110	20	JDMT1003. .R
FH 508	AHU-1025R-4	■	4	25	9	35	85	120	25	JDMT1003. .R
FH 509	AHU-1032R-5	■	5	32	9	45	85	130	32	JDMT1003. .R

■ = Stock | Germany

INSERTS



ID Code	Item No.	Grade	NEW Coating	Stock	Tolerance	A	B	T	R
WF 637	JDMT100304R	PTH13S	Nano PVD Coating	■	M	11	6.1	3.5	0.4
WF 633	JDMT100304R	PTH30E	Nano PVD Coating	■	M	11	6.1	3.5	0.4
WF 634	JDMT100304R	TB6045	Hybrid Coating	■	M	11	6.1	3.5	0.4
WF 638	JDMT100308R	PTH13S	Nano PVD Coating	■	M	11	6.1	3.5	0.8
WF 631	JDMT100308R	PTH30E	Nano PVD Coating	■	M	11	6.1	3.5	0.8
WF 636	JDMT100308R	PTH40H	Nano PVD Coating	■	M	11	6.1	3.5	0.8
WF 635	JDMT100308R	TB6045	Hybrid Coating	■	M	11	6.1	3.5	0.8
WF 632	JDMT100320R	PTH30E	Nano PVD Coating	■	M	11	6.1	3.5	2.0

SPARE PARTS		Clamp screw	Wrench
Cutter body		Item Code	Item Code
AHU-1016R-2		250-141	104-T8
AHU-1020R-3 ~ AHU-1032R-5		251-141	104-T8
AHUB-1040RM-6 ~ AHUB-1063RM-8		251-141	104-T8

Indexable Milling Tools



Ramping

Ramping is possible please use the following data for direct milling without pre-drilling any starter holes.



Fräsoperationen über Rampe

Für Fräsoperationen über Rampe nutzen Sie bitte die nachfolgend abgebildeten Schnittwerte für die direkte Bearbeitung ohne Startlochbohrung.



Lavorazioni in rampa

È possibile lavorare in rampa senza alcun preforo. Usate per questa lavorazione i seguenti dati.



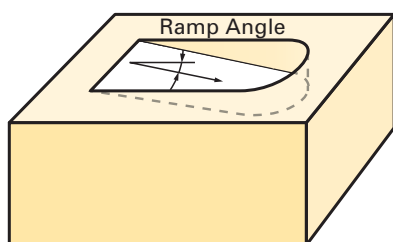
Rampa

El mecanizado en rampa es posible. Por favor, utilizar las condiciones siguientes para mecanizado directo sin pretaladrado.

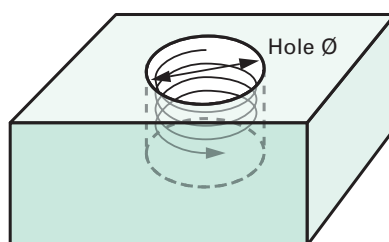


Usinage de rampes

Cette application est possible, utilisez les données suivantes pour un fraisage direct, sans avant trou.



Ramping



Helical Milling

AHU10

Cutting edge Ø (mm)	16	20	25	32	40	50	63
Ramp Angle	4°	3°	2.5°	2°	1.5°	1°	1°
Hole Ø (mm)	21~29	29~37	39~47	53~61	68~80	85~100	107~126

Product Range

Solid Carbide End Mills

Epoch21

MINIATURE

3D-Cut

CARBIDE

Indexable Milling Tools

**Indexable
Milling**

ESM Speed End Mills
EMC Power Drills

ESM
SPEED

Milling Chucks

**Milling
Chucks**

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R 0.8
R 2.0

Hitachi Tool Engineering Europe GmbH

Itterpark 12 · 40724 Hilden · Germany · Phone +49 (0) 21 03 – 24 82-0 · Fax +49 (0) 21 03 – 24 82-30

e-Mail info@hitachitool-eu.com · Internet www.hitachitool-eu.com

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