FRESATURA

MILLING / FRÄSEN / FRAISAGE / FRESADO

SAU
QUALITY TOOLS ENGINEERING

SAU
QUALITY TOOLS ENGINEERING

FRESATURA
MILLING
FRÄSEN
FRAISAGE
FRESADO

- FRESE INTEGRALI IN METALLO DURO
- SOLID CARBIDE MILLING CUTTERS
- HM FRÄSER
- FRAISES EN CARBURE MONOBLOC
- FRESAS INTEGRALES EN METAL DURO

Pag. 179

- FRESE PER SPIANATURA E SMUSSI
- FACE AND CHAMFERRING MILLING CUTTERS
- FRÄSER ZUM PLANEN UND ZUM FASEN
- FRAISES À SURFACER ET ARRONDIR
- FRESAS PARA PLANEAR Y BISELES

Pag. 340

- FRESE PER SPALLAMENTI
- SHOULDER MILLING CUTTERS
- ECKFRAESER
- FRAISES À DRESSER
- FRESAS PARA ESCUADRAR

Pag. 356

- ELIFRESE-FRESE PER SCANALATURA
FRESE FORANTI
- HELICAL END MILLS-GROOVING END MILLS
DRILLING END MILLS
- SCHAFTSCHRUPPFRÄSER ZUM NUTENFRÄSEN
BORHNUTENFRÄSER, SCHEIBENFRÄSER
- FRAISES HÉLICOÏDALES-FRAISES À CANNELER
FRAISES À PERCER
- FRESA HELICOIDALES-FRESAS PARA RANURAS
FRESAS TALADRADORAS

Pag. 384

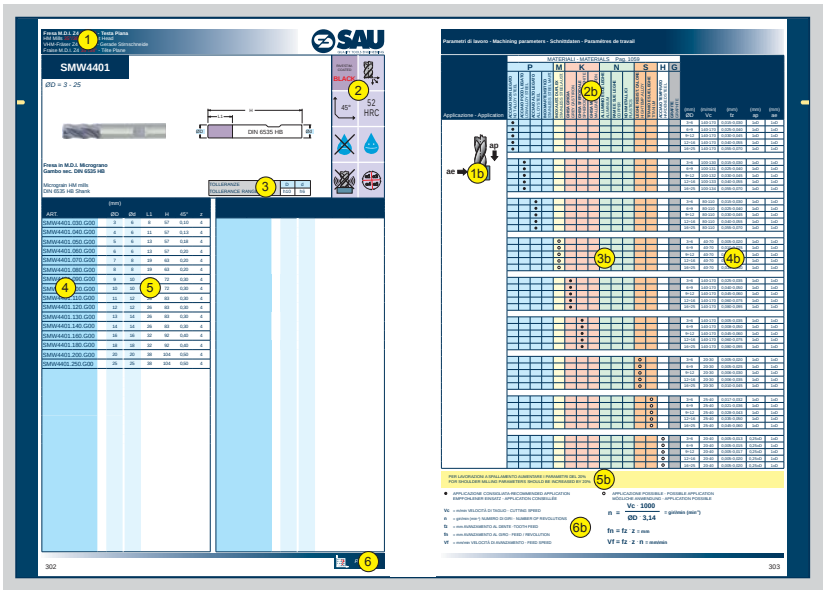
- FRESE PER COPIATURA
- COPY MILLING CUTTERS
- KOPIERFRAESER
- FRAISE À COPIAGE
- FRESAS COPIADORAS

Pag. 402

- INSERTI PER FRESATURA
- MILLING INSERTS
- WENDEPLATTEN ZUM FRÄSEN
- PLAQUÉTTES DE FRAISAGE
- PLAQUITAS DE FRESADO

Pag. 425

INDICAZIONI DI LETTURA
READING INSTRUCTIONS
HINWEISE ZUR ABLESUNG
INDICATIONS DE LÉCTURE



1 = NUMERO TAGLIENTI E ANGOLO ELICA
2 = CARATTERISTICHE TECNICHE (PAG. 183)
3 = TOLLERANZE COSTRUTTIVE
4 = ELENCO ARTICOLI
5 = MISURE E DATI
6 = ULTERIORI DATI TECNICI E CONSIGLIO D'USO

1b = LAVORAZIONI ESEGUIBILI
2b = GRUPPI MATERIALI
3b = INDICAZIONE MATERIALI LAVORABILI E CAMPI D'IMPIEGO
4b = PARAMETRI DI LAVORO
5b = NOTA PER PARAMETRI EVENTUALI ALTRE LAVORAZIONI
6b = FORMULE E PARAMETRI

1 = NUMBER OF FLUTES AND HELIX ANGLE
2 = TECHNICAL FEATURES (PAG. 183)
3 = CONSTRUCTIVES TOLERANCE
4 = ITEM
5 = MEASURES AND DATA
6 = FURTHER TECHNICAL DATA AND SUGGESTIONS

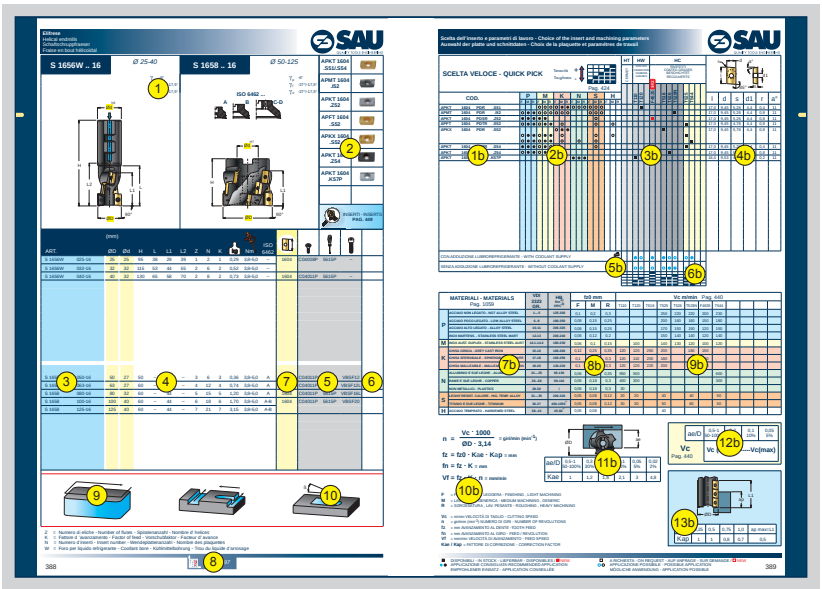
1b = POSSIBLE MACHINING OPERATIONS
2b = MATERIAL GROUPS
3b = INFORMATION ON WORKABLE MATERIALS AND FIELDS OF APPLICATION
4b = MACHINING PARAMETERS
5b = NOTE ON PARAMETERS FOR POSSIBLE ADDITIONAL APPLICATIONS
6b = FORMULAS AND PARAMETERS

1 = ANZAHL SCHNEIDEN UND SPIRALWINKEL
2 = TECHNISCHE HAUPTMERKMALE (PAG. 183)
3 = KONSTRUKTIONSTOLERANZEN
4 = ARTIKEL
5 = ABMESSUNGEN UND DATEN
6 = WEITERE TECHNISCHE DATEN UND TIPPS

1b = MÖGLICHE BEARBEITUNGEN
2b = MATERIALGRUPPEN
3b = ANGABE DER BEARBEITBAREN MATERIALIEN UND ANWENDUNGSGEBIETE
4b = SCHNITTDATEN
5b = ANMERKUNG ZU DEN PARAMETERN FÜR EVENTUELLE WEITERE BEARBEITUNGEN
6b = FORMELN UND PARAMETER

1 = NOMBRE TRANCHANTS ET ANGLE HELICE
2 = CARACTERISTIQUES TECHNIQUES (PAG. 183)
3 = TOLÉRANCE CONSTRUCTIVES
4 = ARTICLES
5 = DIMENSIONES ET DONNÉES
6 = ULTÉRIEURES DONNÉES TECHNIQUE ET CONSEILLE D'USAGE

1b = USINAGES A EXECUTER
2b = GROUPES DE MATERIAUX
3b = INDICATION MATERIAUX A USINER ET PLAGES D'APPLICATION
4b = PARAMÉTRES DE TRAVAIL
5b = NOTE POUR PARAMETRES EVENTUELS D'AUTRES USINAGES
6b = FORMULES ET PARAMÈTRES



1 = ANGOLI COSTRUTTIVI
2 = INSERTI CONSIGLIATI
3 = ELENCO ARTICOLI
4 = MISURE, DATI, INDICAZIONI
5 = ACCESSORI IN DOTAZIONE
6 = ACCESSORI E RICAMBI OPZIONALI A RICHIESTA
7 = GRANDEZZA INSERTO
8 = DATI TECNICI E CONSIGLI D'USO
9 = LAVORAZIONI POSSIBILI
10 = ANGOLO DI PENETR. OBLIQUA

1b = ELENCO INSERTI
2b = INDICAZIONE MATERIALI LAVORABILI E CAMPI D'IMPIEGO
3b = DISPONIBILITÀ GRADI
4b = MISURE E DATI
5b = USO DEL REFRIGERANTE
6b = SCELTA DEL GRADO (QUICK PICK)
7b = GRUPPI MATERIALI
8b = AVANZAMENTO DI BASE Fz0
9b = VELOCITÀ DI TAGLIO Vc
10b = FORMULE E PARAMETRI
11b = CORREZIONE AVANZAMENTO Fz0
12b = INTERPRETAZIONE VELOCITÀ DI TAGLIO SECONDO LA LAVORAZIONE
13b = INDICAZIONI ULTERIORI

1 = CONSTRUCTIVE ANGLES
2 = RECOMMENDED INSERTS
3 = ITEM
4 = MEASURES,DATA,INDICATIONS
5 = ACCESSORIES EQUIPMENT
6 = OPTIONAL ACCESORIES AND SPARE PARTS ON REQUEST
7 = INSERT SIZE
8 = TECHNICAL DATA AND SUGGESTIONS
9 = POSSIBLE TYPES OF MACHINING
10 = OBLIQUE PENETRATION ANGLE

1b = AVAILABLE INSERTS
2b = RECOMMENDED MACHINING MATERIALS AND FIELDS OF APPLICATION
3b = AVAILABLE GRADES
4b = MEASURES AND DATA
5b = USE OF COOLANT
6b = GRADE CHOICE(QUICK PICK)
7b = MATERIAL GROUPS
8b = BASIC FEED RATE Fz0
9b = CUTTING SPEED Vc
10b = FORMULAS AND PARAMETERS
11b = FEED RATE CORRECTION Fz0
12b = CUTTING SPEED INTERPRETATION ACCORDING TO MACHINING
13b = FURTHER INDICATIONS

1 = KONSTRUKTIONSWINKEL
2 = EMPFOHLENE WENDESCHNEIDPLATTEN
3 = ARTKEL
4 = ABMESSUNGEN,DATEN;HINWEISE
5 = ZUBEHÖRAUSSTATTUNG
6 = OPTIONALZUBEHÖR UND -ERSATZTEILE AUF ANFRAGE
7 = WENDEPLATTENGRÖSSE
8 = TECHNISCHE DATEN UND TIPPS
9 = MÖGLICHE BEARBEITUNGSARTEN
10 = EINTAUCHWINKEL

1b = LIEFERBARE WENDEPLATTEN
2b = EMPFOHLENE WERKSTOFFE UND EINSATZBEREICHE
3b = LIEFERBARE HM-QUALITÄTEN
4b = ABMESSUNGEN UND DATEN
5b = KÜHLMITTELVERWENDUNG
6b = SORTENAUSWAHL(QUICK PICK)
7b = MATERIALGRUPPEN
8b = GRUNDVORSCHUB Fz0
9b = SCHNITTGESCHWINDIGKEIT Vc
10b = FORMELN UND PARAMETER
11b = VORSCHUBKORREKTUR Fz0
12b = INTERPRETATION DER SCHNITT GESCHWINDIGKEIT NACH BEARBEI TUNG
13b = WEITERE HINWEISE

1 = ANGLES CONSTRUCTIVES
2 = PLAQUETTES CONSEILLÉES
3 = ARTICLES
4 = DIMENSIONES,DONNÉES,INDICATIONS
5 = ACCESSOIRES EN DOTATION
6 = ACCESSOIRES ET RECHANGE OPTIONNEL SUR DEMANDE
7 = DIMENSION DE LA PLAQUETTE
8 = DONNÉES TECHNIQUES ET CONSEILLES D'USAGE
9 = USINAGES POSSIBLES
10 = ANGLE DE PÉNÉTRATION OBLIQUE

1b = PLAQUETTES DISPONIBLES
2b = INDICATIONS SUR LES MATERIAUX USINABLE ET CHAMPS D'USINAGE
3b = DISONIBILITÉ DE DEGRÉS
4b = DIMENSIONES ET DONNÉES
5b = UTILISATION DU RÉFRIGÉRANTE
6b = CHOIX DU DEGRÉ(QUICK PICK)
7b = GROUPES DE MATERIAUX
8b = DÉPLACEMENT Fz0
9b = VITESSE DE COUPE Vc
10b = FORMULES ET PARAMÈTRES
11b = CORRECTION DÉPLACEMENT Fz0
12b = INTERPRÉTATION VITESSE DE COUPE SELÓN L'USINAGE
13b = INDICATIONS ULTÉRIEURES

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FRESE INTEGRALI IN METALLO DURO
SOLID CARBIDE MILLING
HM FRAESER
FRAISES EN CARBURE MONOBLOC
FRESAS INTEGRALES EN METAL DURO

				ART.	LUNGHEZZA FRESA MILLING CUTTER LENGTH	SPIGOLO FRESA CORNER SHAPE	ØD	z	ANGOLO ELICA ANGLE FLUTES	Materiali - Materials Pag. 1063 P	M	K	N	S	H	G	Pag.
MICROFRESE - MICRO-MILLS																	
		BLACK		ST2201			0,4-3	2	30°	●	○	●	●				186
				STN2201			0,4-3	2	30°	●	○	●	●				188
		BLACK		ST2205			0,4-3	2	30°	●	○	●	○				190
				STN2205			0,4-3	2	30°	●	○	●	○				192
FRESE PER ALLUMINIO - MILLING CUTTERS FOR ALUMINIUM																	
				SM1200			1-6	1	30°				●				196
				SM1300			2-16	1	30°				●				198
		SILVER		SMW2317			4-20	2	55°				●				200
				SMW2317..N01			3-20	2	55°				●				202
	NEW			SM2315..N01			8-25	2	30°				●				204
		SILVER		SM2417			4-12	2	40°				●				206
				SM2417..01			3-12	2	40°				●				208
	NEW			SM3315..N01			6-16	3	43°-45°				●				210
		SILVER		SM3417			6-25	3	45°				●				212
				SM3417..N01			6-25	3	45°				●				214
		GOLD		SMW3414			8-25	3	40°				●				216
				SMW3414..N01			8-25	3	40°				●				218
HSC		GOLD		SM3510			4-20	3	43°-45°				●				220
HSC				SM3510..N01			4-20	3	43°-45°				●				222

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

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FRESE INTEGRALI IN METALLO DURO
SOLID CARBIDE MILLING
HM FRAESER
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FRESAS INTEGRALES EN METAL DURO

				ART.	LUNGHEZZA FRESA MILLING CUTTER LENGTH	SPIGOLO FRESA CORNER SHAPE	ØD	Z	ANGOLO ELICA ANGLE FLUTES	Materiali - Materials Pag. 1063 P	M	K	N	S	H	G	Pag.
2 TAGLI - 2 CUTTINGS																	
		BLACK		SMW2200			2-20	2	30°	●	●	●				○	226
		BLACK		SMW2300			2-20	2	30°	●	●	●				○	228
		BLACK		SMW2203			2,5-20	2	30°	●	●	●				○	230
	NEW	BLACK		SM2203			2,5-20	2	30°	●	●	●				○	232
HSC		GRAY		SM2424			2-12	2	30°	●		●		●	●	○	234
3 TAGLI - 3 CUTTINGS																	
		BLACK		SMW3100			2-20	3	30°	●	●	●				○	238
		RED		SMW3231			2-20	3	30°	●	●	●				○	240
		BLACK		SMW3300			2-20	3	30°	●	●	●				○	242

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

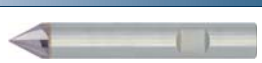
			ART.	LUNGHEZZA FRESA MILLING CUTTER LENGTH	SPIGOLO FRESA CORNER SHAPE	ØD	Z	ANGOLO ELICA ANGLE FLUTES	Materiali - Materials Pag. 1063 P	M	K	N	S	H	G	Pag.
4/6/8 TAGLI - 4/6/8 CUTTINGS																
		BLACK	SMW4300		90°	5,5-20	4	30°	●	●	●				○	246
		BLACK	SM4300		90°	2-20	4	30°	●	●	●				○	248
		BLACK	SMW4400		90°	3-20	4	30°	●	●	●				○	250
		BLACK	SMW4402		45°	2-20	4	45°	●	●	●				○	252
HSC		GRAY	SM4330		45°	4-20	4	52°	●	●	●			●	○	254
		GRAY	SMW4304		90°	3-20	4	25°	●	●	●					256
		GRAY	SMW3304		90°	4-25	3-4 5-6	45°	●	●			●			258
		GRAY	SMW4404		90°	6-20	4	45°	●	●	●		●			260
		GRAY	SM4325		R	3-20	4	30°	●	○	○			●	○	262
HSC		GRAY	SM4215		R	2-16	4	30°	●	○	○			●	○	264
		GRAY	SM4525		R	3-20	4	30°	●	○	○			●	○	266
		BLACK	SMW4403		R	3-20	4	30°	●	●	●				○	268
		GRAY	SM6402		45°	4-20	6-8	45°	●	●	●	●	●		○	270
		GRAY	SM6502		45°	4-20	6-8	45°	●	●	●	●	●		○	272
		GRAY	SM6432		90°	4-20	6-8	52°	●					●	○	274
		GRAY	SM6532		90°	6-20	6-8	52°	●					●	○	276
	NEW	ORANGE	SM7215..TI		R	6-16	5-9	38°	○	●			●	○		278
PASSO VARIABILE - VARIABLE PITCH																
HSC		GRAY	SMW3400		45°	3-20	3	45°-48°	●	○	●			○	○	282
		ORANGE	SMW3400..TI		45°	3-20	3	45°-48°	○	●			●	○		284
HSC		GRAY	SM3415		45°	3-20	3	45°-48°	●	○	●			○	○	286
		ORANGE	SM3415..TI		45°	3-20	3	45°-48°	○	●			●	○		288
		GRAY	SM3515		R	4-10	3	35°-38°	●	○	●		○	○	○	290

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU
QUALITY TOOLS ENGINEERING

FRESE INTEGRALI IN METALLO DURO
SOLID CARBIDE MILLING
HM FRAESER
FRAISES EN CARBURE MONOBLOC
FRESAS INTEGRALES EN METAL DURO

				ART.	LUNGHEZZA FRESA MILLING CUTTER LENGTH	SPIGOLO FRESA CORNER SHAPE	ØD	z	ANGOLO ELICA ANGLE FLUTES	Materiali - Materials Pag. 1063 P	M	K	N	S	H	G	Pag.
PASSO VARIABILE - VARIABLE PITCH																	
		ORANGE		SM3515..TI			4-10	3	35°-38°	○	●			●	○		292
		GRAY		SM3525			4-10	3	35°-38°	●	○	●		○	○	○	294
		ORANGE		SM3525..TI			4-10	3	35°-38°	○	●			●	○		296
		BLACK		SMW4501			5-20	4	35°-38°	●	○	●		○	○	○	298
		ORANGE		SMW4501..TI			5-20	4	35°-38°	○	●			●	○		300
		BLACK		SMW4401			3-25	4	35°-38°	●	○	●		○	○	○	302
		ORANGE		SMW4401..TI			3-25	4	35°-38°	○	●			●	○		304
		BLACK		SM4415			3-25	4	35°-38°	●	○	●		○	○	○	306
		ORANGE		SM4415..TI			3-25	4	35°-38°	○	●			●	○		308
		GRAY		SMW4305			4-20	4	35°-38°	●	○	●		○	○	○	310
		ORANGE		SMW4305..TI			4-20	4	35°-38°	○	●			●	○		312
		GRAY		SM4315			4-20	4	35°-38°	●	○	●		○	○	○	314
		ORANGE		SM4315..TI			4-20	4	35°-38°	○	●			●	○		316
	NEW	GRAY		SM4313			2,5-16	4	35°-38°	●	○	●			○	○	318
	NEW	ORANGE		SM4313..TI			2,5-16	4	35°-38°	○	●			●	○		320
	NEW	GRAY		SM4413..LX			3-16	4	35°-38°	●	○	●			○	○	322
SEDI CHIAVETTE - KEYSLOTS																	
		BLACK		SMW3301			1,8-15,7	3	30°	●	●	●				○	326
SVASATORI/SMUSSATORI - COUNTERSINK AND CHAMFER MILLS																	
		BLACK		SCR0183			4-20	4-6	0°	●	●	●	●			○	330
		BLACK		SCR0187			4-20	4-5-6	0°	●	●	●	●			○	332
		BLACK		SMR0110			4-16	4	0°	●	●	●	●			○	334
				SS230			3-20	2	30°				●				336
		BLACK		SM4701			6-10	4	0°	●	●	●	●				338

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

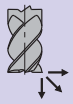
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SIMBOLOGIA - SYMBOL - SYMBOLE - SYMBOLES

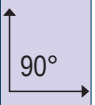
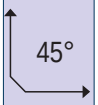
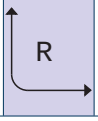
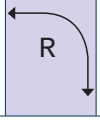
RIVESTIMENTI - COATED - BESCHICHTUNG - RECOUVREMENT

RIVESTIM. COATED **BLACK**	BLACK: L'elevata durezza del rivestimento offre una protezione eccellente contro l'usura abrasiva e l'erosione *BLACK:* The high hardness of the coating offers an excellent protection against abrasive wear and erosion	RIVESTIM. COATED **GRAY**	GRAY: Le notevoli migliorie di resistenza all'usura, così come la resistenza all'ossidazione e la durezza a caldo, rendono questo rivestimento la scelta naturale per le frese *GRAY:* A considerably improved resistance to wear, as well as good oxidation stability and hot hardness make this coating ideally suitable for the milling cutters
RIVESTIM. COATED **GOLD**	GOLD: Rivestimento molto adatto alla lavorazione dell'alluminio e le sue leghe. Permette di utilizzare parametri di taglio più elevati. *GOLD:* This coating is particularly suitable for aluminum and relevant alloys It enables the use of higher cutting parameters	RIVESTIM. COATED **SILVER**	SILVER: Particolarmente indicato per lavorazioni di alluminio, bronzo, ottone e rame. *SILVER:* Particularly suitable to machining aluminum, bronze and copper.
RIVESTIM. COATED **RED**	RED: Lavorazione ad alta velocità di materiali difficilmente lavorabili. *RED:* High speed machining of hardly machinable materials.	RIVESTIM. COATED **ORANGE**	ORANGE: Rivestimento multistrato ottimizzato per la lavorazione di acciai inossidabili, Titanio, Inconel e superleghe. *ORANGE:* Optimized multi-layer coating for stainless steel, titanium, inconel and super alloys.

DIREZIONE DI LAVORAZIONE - WORKING DIRECTION - ARBEITSRICHTUNG - ORENTATION D'EXECUTION

	- N2 Direzioni di utilizzo possibili - 2 Possible usage orientation - 2 Mögliche vorschubrichtung - N2 orientations d'usage possibles		- N3 Direzioni di utilizzo possibili - 3 Possible usage orientation - 3 Mögliche vorschubrichtung - N3 orientations d'usage possibles

SPIGOLO FRESA - CORNER SHAPE - FRÄSERKANTE - ARETE FRAISE

	- 90°		- Angolo di testa 90° - 90° Head angle - Kopfwinkel 90° - Angle en tete 90°		- Angolo di testa 60° - 60° Head angle - Kopfwinkel 60° - Angle en tete 60°		- Spigolo a 45° - 45° Corner shape - Ecke 45° - Arête 45°
	- Sferico - Spherical - Kugelförmig - Sphérique		- Torico - Toric - Torisch - Torique		- Raggiato - Radius - Mit eckenradius - Radiaire		

DUREZZA MATERIALE - HARDNESS MATERIAL - MATERIALHÄRTE - DURETE MATERIAU

42 HRC	- 42 HRC	52 HRC	- 52 HRC	58 HRC	- 58 HRC	60 HRC	- 60 HRC
62 HRC	- 62 HRC	64 HRC	- 64 HRC	ALU ≤5% Si	- Alluminio con Silicio ≤ 5% - Aluminium with silicon ≤ 5% - Aluminium avec silicium ≤ 5% - Aluminium mit Siliziumgehalt ≤ 5%	ALU >5% Si	- Alluminio con Silicio > 5% - Aluminium with silicon > 5% - Aluminium avec silicium > 5% - Aluminium mit Siliziumgehalt > 5%

LUNGHEZZA FRESA - MILLING CUTTER LENGHT - FRÄSERLÄNGE - LONGUEUR DE LA FRAISE

	- Corta - Short - Kurz - Courte		- Media - Medium - Mittel - Moyenne		- Lunga - Long - Lang - Longue

SIMBOLI GENERALI - GENERAL SYMBOLS - ALLGEMEINE SYMBOLE - SYMBOLES GÉNÉRAUX

HSC	- Per lavorazioni ad alta velocità - For high speed machining - Für hochgeschwindigkeitsbearbei tungen geeignet - Pour usinage à haute vitesse		- Lavorazioni a secco - Dry machining - Trockenbearbeitung - Usinage a sec		- Lavorazioni con refrigerante - Machining operations with coolant - Bearbeitungen mit Kühlmittel - Usinages avec réfrigérant		- Basse vibrazioni - Low vibrations - Vibrationsarm - Faibles vibrations
	- Divisione irregolare - Irregular helix angles - Unregelmäßige Teilung der Schneiden - Division Irrégulière						

NOTE - NOTES

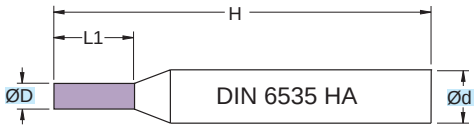
MICROFRESE

MICRO-MILLS / MIKROFRAESER / MICRO-FRAISES / MICROFRESAS

SAU
QUALITY TOOLS ENGINEERING

ST2201

ØD = 0,4 - 3



RIVESTIM. COATED
BLACK

90°

42 HRC

Microfresa in M.D.I. Micrograno
Gambo Cilindrico HA

Micrograin HM Micro-mill
Cilindrical Shank HA

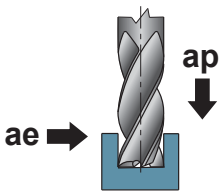
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
ST2201.040.N00	0,4	3,0	1,5	38	2
ST2201.050.N00	0,5	3,0	1,5	38	2
ST2201.060.N00	0,6	3,0	2,0	38	2
ST2201.070.N00	0,7	3,0	3,0	38	2
ST2201.080.N00	0,8	3,0	3,0	38	2
ST2201.090.N00	0,9	3,0	3,0	38	2
ST2201.100.N00	1,0	3,0	4,0	38	2
ST2201.110.N00	1,1	3,0	4,0	38	2
ST2201.120.N00	1,2	3,0	4,0	38	2
ST2201.130.N00	1,3	3,0	4,0	38	2
ST2201.140.N00	1,4	3,0	4,0	38	2
ST2201.150.N00	1,5	3,0	5,0	38	2
ST2201.160.N00	1,6	3,0	5,0	38	2
ST2201.180.N00	1,8	3,0	5,0	38	2
ST2201.200.N00	2,0	3,0	6,0	38	2
ST2201.250.N00	2,5	3,0	7,0	38	2
ST2201.300.N00	3,0	3,0	8,0	38	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													0,4÷0,6	65-100	0,003-0,011	0,5xD	1xD
			●													0,6÷0,8	65-100	0,003-0,015	0,5xD	1xD
			●													0,8÷1,0	65-100	0,002-0,017	0,5xD	1xD
			●													1,0÷1,2	65-100	0,005-0,020	0,5xD	1xD
			●													1,2÷1,4	65-100	0,007-0,022	0,5xD	1xD
			●													1,4÷1,6	65-100	0,010-0,025	0,5xD	1xD
			●													1,6÷2,0	65-100	0,012-0,027	0,5xD	1xD
			●													2,0÷3,0	65-100	0,015-0,030	0,5xD	1xD
					○											0,4÷0,6	35-55	0,003-0,011	0,5xD	1xD
					○											0,6÷0,8	35-55	0,003-0,015	0,5xD	1xD
					○											0,8÷1,0	35-55	0,002-0,017	0,5xD	1xD
					○											1,0÷1,2	35-55	0,005-0,020	0,5xD	1xD
					○											1,2÷1,4	35-55	0,007-0,022	0,5xD	1xD
					○											1,4÷1,6	35-55	0,010-0,025	0,5xD	1xD
					○											1,6÷2,0	35-55	0,012-0,027	0,5xD	1xD
					○											2,0÷3,0	35-55	0,015-0,030	0,5xD	1xD
						●										0,4÷0,6	80-120	0,003-0,011	0,5xD	1xD
						●										0,6÷0,8	80-120	0,003-0,015	0,5xD	1xD
						●										0,8÷1,0	80-120	0,002-0,017	0,5xD	1xD
						●										1,0÷1,2	80-120	0,005-0,020	0,5xD	1xD
						●										1,2÷1,4	80-120	0,007-0,022	0,5xD	1xD
						●										1,4÷1,6	80-120	0,010-0,025	0,5xD	1xD
						●										1,6÷2,0	80-120	0,012-0,027	0,5xD	1xD
						●										2,0÷3,0	80-120	0,015-0,030	0,5xD	1xD
									●							0,4÷0,6	160-400	0,003-0,012	0,5xD	1xD
									●							0,6÷0,8	160-400	0,005-0,020	0,5xD	1xD
									●							0,8÷1,0	160-400	0,007-0,022	0,5xD	1xD
									●							1,0÷1,2	160-400	0,010-0,025	0,5xD	1xD
									●							1,2÷1,4	160-400	0,012-0,027	0,5xD	1xD
									●							1,4÷1,6	160-400	0,020-0,035	0,5xD	1xD
									●							1,6÷2,0	160-400	0,022-0,037	0,5xD	1xD
									●							2,0÷3,0	160-400	0,025-0,040	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

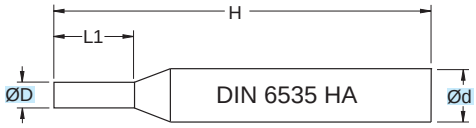
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

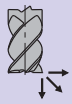
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

STN2201

ØD = 0,4 - 3





42 HRC

Microfresa in M.D.I. Micrograno
Gambo Cilindrico HA

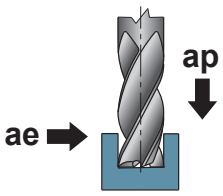
Micrograin HM Micro-mill
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
STN2201.040.N00	0,4	3,0	1,5	38	2
STN2201.050.N00	0,5	3,0	1,5	38	2
STN2201.060.N00	0,6	3,0	2,0	38	2
STN2201.070.N00	0,7	3,0	3,0	38	2
STN2201.080.N00	0,8	3,0	3,0	38	2
STN2201.090.N00	0,9	3,0	3,0	38	2
STN2201.100.N00	1,0	3,0	4,0	38	2
STN2201.110.N00	1,1	3,0	4,0	38	2
STN2201.120.N00	1,2	3,0	4,0	38	2
STN2201.130.N00	1,3	3,0	4,0	38	2
STN2201.140.N00	1,4	3,0	4,0	38	2
STN2201.150.N00	1,5	3,0	5,0	38	2
STN2201.160.N00	1,6	3,0	5,0	38	2
STN2201.180.N00	1,8	3,0	5,0	38	2
STN2201.200.N00	2,0	3,0	6,0	38	2
STN2201.250.N00	2,5	3,0	7,0	38	2
STN2201.300.N00	3,0	3,0	8,0	38	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													0,4÷0,6	50-80	0,003-0,011	0,5xD	1xD
			●													0,6÷0,8	50-80	0,003-0,015	0,5xD	1xD
			●													0,8÷1,0	50-80	0,002-0,017	0,5xD	1xD
			●													1,0÷1,2	50-80	0,005-0,020	0,5xD	1xD
			●													1,2÷1,4	50-80	0,007-0,022	0,5xD	1xD
			●													1,4÷1,6	50-80	0,010-0,025	0,5xD	1xD
			●													1,6÷2,0	50-80	0,012-0,027	0,5xD	1xD
			●													2,0÷3,0	50-80	0,015-0,030	0,5xD	1xD
					○											0,4÷0,6	25-45	0,003-0,011	0,5xD	1xD
					○											0,6÷0,8	25-45	0,003-0,015	0,5xD	1xD
					○											0,8÷1,0	25-45	0,002-0,017	0,5xD	1xD
					○											1,0÷1,2	25-45	0,005-0,020	0,5xD	1xD
					○											1,2÷1,4	25-45	0,007-0,022	0,5xD	1xD
					○											1,4÷1,6	25-45	0,010-0,025	0,5xD	1xD
					○											1,6÷2,0	25-45	0,012-0,027	0,5xD	1xD
					○											2,0÷3,0	25-45	0,015-0,030	0,5xD	1xD
						●										0,4÷0,6	65-95	0,003-0,011	0,5xD	1xD
						●										0,6÷0,8	65-95	0,003-0,015	0,5xD	1xD
						●										0,8÷1,0	65-95	0,002-0,017	0,5xD	1xD
						●										1,0÷1,2	65-95	0,005-0,020	0,5xD	1xD
						●										1,2÷1,4	65-95	0,007-0,022	0,5xD	1xD
						●										1,4÷1,6	65-95	0,010-0,025	0,5xD	1xD
						●										1,6÷2,0	65-95	0,012-0,027	0,5xD	1xD
						●										2,0÷3,0	65-95	0,015-0,030	0,5xD	1xD
									●							0,4÷0,6	130-320	0,003-0,012	0,5xD	1xD
									●							0,6÷0,8	130-320	0,005-0,020	0,5xD	1xD
									●							0,8÷1,0	130-320	0,007-0,022	0,5xD	1xD
									●							1,0÷1,2	130-320	0,010-0,025	0,5xD	1xD
									●							1,2÷1,4	130-320	0,012-0,027	0,5xD	1xD
									●							1,4÷1,6	130-320	0,020-0,035	0,5xD	1xD
									●							1,6÷2,0	130-320	0,022-0,037	0,5xD	1xD
									●							2,0÷3,0	130-320	0,025-0,040	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

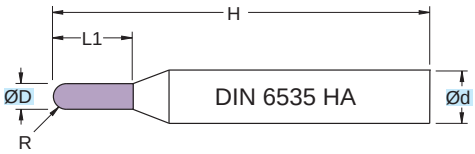
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

ST2205

ØD = 0,4 - 3



RIVESTIM. COATED
BLACK

R

42 HRC

Microfresa in M.D.I. Micrograno
Gambo cilindrico HA

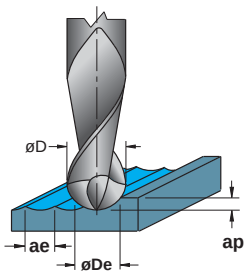
Micrograin HM Micro-mill
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
ST2205.040.S020	0,4	3,0	1,5	38	0,20	2
ST2205.050.S025	0,5	3,0	1,5	38	0,25	2
ST2205.060.S030	0,6	3,0	2,0	38	0,30	2
ST2205.070.S035	0,7	3,0	3,0	38	0,35	2
ST2205.080.S040	0,8	3,0	3,0	38	0,40	2
ST2205.090.S045	0,9	3,0	3,0	38	0,45	2
ST2205.100.S050	1,0	3,0	4,0	38	0,50	2
ST2205.110.S055	1,1	3,0	4,0	38	0,55	2
ST2205.120.S060	1,2	3,0	4,0	38	0,60	2
ST2205.130.S065	1,3	3,0	4,0	38	0,65	2
ST2205.140.S070	1,4	3,0	4,0	38	0,70	2
ST2205.150.S075	1,5	3,0	5,0	38	0,75	2
ST2205.160.S080	1,6	3,0	5,0	38	0,80	2
ST2205.180.S090	1,8	3,0	5,0	38	0,90	2
ST2205.200.S100	2,0	3,0	6,0	38	1,00	2
ST2205.250.S125	2,5	3,0	7,0	38	1,25	2
ST2205.300.S150	3,0	3,0	8,0	38	1,50	2

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													0,4÷0,6	50-100	0,010-0,025	0,05xD	0,05xD
			●													0,6÷0,8	50-100	0,020-0,035	0,05xD	0,05xD
			●													0,8÷1,0	50-100	0,030-0,045	0,05xD	0,05xD
			●													1,0÷1,2	50-100	0,035-0,050	0,05xD	0,05xD
			●													1,2÷1,4	50-100	0,040-0,055	0,05xD	0,05xD
			●													1,4÷1,6	50-100	0,050-0,065	0,05xD	0,05xD
			●													1,6÷2,0	50-100	0,060-0,075	0,05xD	0,05xD
			●													2,0÷3,0	50-100	0,070-0,085	0,05xD	0,05xD
					○											0,4÷0,6	20-40	0,010-0,025	0,05xD	0,05xD
					○											0,6÷0,8	20-40	0,020-0,035	0,05xD	0,05xD
					○											0,8÷1,0	20-40	0,030-0,045	0,05xD	0,05xD
					○											1,0÷1,2	20-40	0,035-0,050	0,05xD	0,05xD
					○											1,2÷1,4	20-40	0,040-0,055	0,05xD	0,05xD
					○											1,4÷1,6	20-40	0,050-0,065	0,05xD	0,05xD
					○											1,6÷2,0	20-40	0,060-0,075	0,05xD	0,05xD
					○											2,0÷3,0	20-40	0,070-0,085	0,05xD	0,05xD
						●										0,4÷0,6	70-110	0,010-0,025	0,05xD	0,05xD
						●										0,6÷0,8	70-110	0,025-0,040	0,05xD	0,05xD
						●										0,8÷1,0	70-110	0,040-0,055	0,05xD	0,05xD
						●										1,0÷1,2	70-110	0,050-0,065	0,05xD	0,05xD
						●										1,2÷1,4	70-110	0,060-0,075	0,05xD	0,05xD
						●										1,4÷1,6	70-110	0,070-0,085	0,05xD	0,05xD
						●										1,6÷2,0	70-110	0,080-0,095	0,05xD	0,05xD
						●										2,0÷3,0	70-110	0,090-0,105	0,05xD	0,05xD
									○							0,4÷0,6	150-300	0,010-0,025	0,05xD	0,05xD
									○							0,6÷0,8	150-300	0,030-0,045	0,05xD	0,05xD
									○							0,8÷1,0	150-300	0,050-0,065	0,05xD	0,05xD
									○							1,0÷1,2	150-300	0,070-0,085	0,05xD	0,05xD
									○							1,2÷1,4	150-300	0,085-0,100	0,05xD	0,05xD
									○							1,4÷1,6	150-300	0,100-0,115	0,05xD	0,05xD
									○							1,6÷2,0	150-300	0,120-0,135	0,05xD	0,05xD
									○							2,0÷3,0	150-300	0,140-0,155	0,05xD	0,05xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

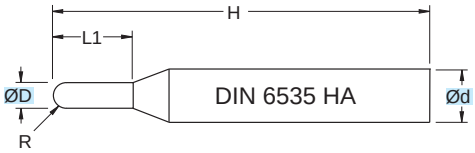
$$n = \frac{Vc \cdot 1000}{\text{ØDe} \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

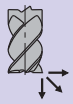
$$fn = fz \cdot z = \text{mm}$$

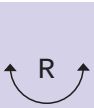
$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

STN2205

ØD = 0,4 - 3







42 HRC

Microfresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM Micro-mill
Cilindrical Shank HA

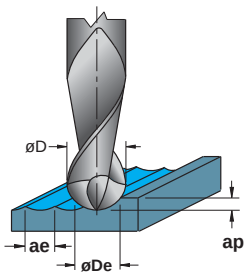
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
STN2205.040.N00	0,4	3,0	1,5	38	0,20	2
STN2205.050.N00	0,5	3,0	1,5	38	0,25	2
STN2205.060.N00	0,6	3,0	2,0	38	0,30	2
STN2205.070.N00	0,7	3,0	3,0	38	0,35	2
STN2205.080.N00	0,8	3,0	3,0	38	0,40	2
STN2205.090.N00	0,9	3,0	3,0	38	0,45	2
STN2205.100.N00	1,0	3,0	4,0	38	0,50	2
STN2205.110.N00	1,1	3,0	4,0	38	0,55	2
STN2205.120.N00	1,2	3,0	4,0	38	0,60	2
STN2205.130.N00	1,3	3,0	4,0	38	0,65	2
STN2205.140.N00	1,4	3,0	4,0	38	0,70	2
STN2205.150.N00	1,5	3,0	5,0	38	0,75	2
STN2205.160.N00	1,6	3,0	5,0	38	0,80	2
STN2205.180.N00	1,8	3,0	5,0	38	0,90	2
STN2205.200.N00	2,0	3,0	6,0	38	1,00	2
STN2205.250.N00	2,5	3,0	7,0	38	1,25	2
STN2205.300.N00	3,0	3,0	8,0	38	1,50	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													0,4÷0,6	40-80	0,010-0,025	0,05xD	0,05xD
			●													0,6÷0,8	40-80	0,020-0,035	0,05xD	0,05xD
			●													0,8÷1,0	40-80	0,030-0,045	0,05xD	0,05xD
			●													1,0÷1,2	40-80	0,035-0,050	0,05xD	0,05xD
			●													1,2÷1,4	40-80	0,040-0,055	0,05xD	0,05xD
			●													1,4÷1,6	40-80	0,050-0,065	0,05xD	0,05xD
			●													1,6÷2,0	40-80	0,060-0,075	0,05xD	0,05xD
			●													2,0÷3,0	40-80	0,070-0,085	0,05xD	0,05xD
					○											0,4÷0,6	15-35	0,010-0,025	0,05xD	0,05xD
					○											0,6÷0,8	15-35	0,020-0,035	0,05xD	0,05xD
					○											0,8÷1,0	15-35	0,030-0,045	0,05xD	0,05xD
					○											1,0÷1,2	15-35	0,035-0,050	0,05xD	0,05xD
					○											1,2÷1,4	15-35	0,040-0,055	0,05xD	0,05xD
					○											1,4÷1,6	15-35	0,050-0,065	0,05xD	0,05xD
					○											1,6÷2,0	15-35	0,060-0,075	0,05xD	0,05xD
					○											2,0÷3,0	15-35	0,070-0,085	0,05xD	0,05xD
						●										0,4÷0,6	55-90	0,010-0,025	0,05xD	0,05xD
						●										0,6÷0,8	55-90	0,025-0,040	0,05xD	0,05xD
						●										0,8÷1,0	55-90	0,040-0,055	0,05xD	0,05xD
						●										1,0÷1,2	55-90	0,050-0,065	0,05xD	0,05xD
						●										1,2÷1,4	55-90	0,060-0,075	0,05xD	0,05xD
						●										1,4÷1,6	55-90	0,070-0,085	0,05xD	0,05xD
						●										1,6÷2,0	55-90	0,080-0,095	0,05xD	0,05xD
						●										2,0÷3,0	55-90	0,090-0,105	0,05xD	0,05xD
									○							0,4÷0,6	120-250	0,010-0,025	0,05xD	0,05xD
									○							0,6÷0,8	120-250	0,030-0,045	0,05xD	0,05xD
									○							0,8÷1,0	120-250	0,050-0,065	0,05xD	0,05xD
									○							1,0÷1,2	120-250	0,070-0,085	0,05xD	0,05xD
									○							1,2÷1,4	120-250	0,085-0,100	0,05xD	0,05xD
									○							1,4÷1,6	120-250	0,100-0,115	0,05xD	0,05xD
									○							1,6÷2,0	120-250	0,120-0,135	0,05xD	0,05xD
									○							2,0÷3,0	120-250	0,140-0,155	0,05xD	0,05xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{\text{ØDe} \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

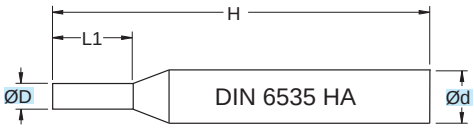
FRESE PER ALLUMINIO

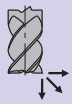
MILLING CUTTERS FOR ALUMINIUM / FRAESER FÜR ALUMINIUM /
FRAISES POUR ALUMINIUM / FRESAS PARA ALUMINIO

SAU
QUALITY TOOLS ENGINEERING

SM1200

ØD = 1 - 6





ALU
≤5% Si

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

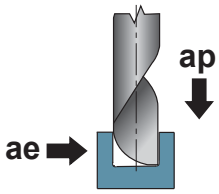
Micrograin HM minimills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h11	h6

(mm)

ART.	ØD	Ød	L1	H	z
SM1200.010.N00	1,0	6,0	5	40	1
SM1200.015.N00	1,5	6,0	7	40	1
SM1200.020.N00	2,0	6,0	7	40	1
SM1200.025.N00	2,5	6,0	8	40	1
SM1200.030.N00	3,0	6,0	8	40	1
SM1200.035.N00	3,5	6,0	10	40	1
SM1200.040.N00	4,0	6,0	10	40	1
SM1200.045.N00	4,5	6,0	12	50	1
SM1200.050.N00	5,0	6,0	12	50	1
SM1200.055.N00	5,5	6,0	14	50	1
SM1200.060.N00	6,0	6,0	14	50	1

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							1÷2	250-350	0,003-0,010	0,5xD	1xD
									●							2÷3	250-350	0,005-0,020	0,5xD	1xD
									●							3÷4	250-350	0,015-0,030	0,5xD	1xD
									●							4÷5	250-350	0,020-0,035	0,5xD	1xD
									●							5÷6	250-350	0,025-0,040	0,5xD	1xD
										●						1÷2	130-160	0,003-0,007	0,5xD	1xD
										●						2÷3	130-160	0,003-0,015	0,5xD	1xD
										●						3÷4	130-160	0,008-0,023	0,5xD	1xD
										●						4÷5	130-160	0,013-0,028	0,5xD	1xD
										●						5÷6	130-160	0,018-0,033	0,5xD	1xD
											●					1÷2	80-110	0,010-0,025	0,5xD	1xD
											●					2÷3	80-110	0,015-0,030	0,5xD	1xD
											●					3÷4	80-110	0,020-0,035	0,5xD	1xD
											●					4÷5	80-110	0,030-0,045	0,5xD	1xD
											●					5÷6	80-110	0,040-0,055	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

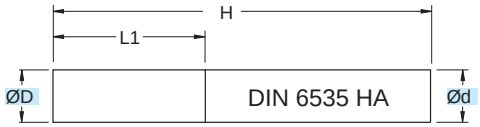
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

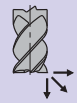
$$fn = fz \cdot z = \text{mm}$$

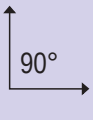
$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM1300

ØD = 2 - 16







ALU
≤5% Si

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM minimills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h11	h6

(mm)

ART.	ØD	Ød	L1	H	z
SM1300.020.N00	2,0	3,0	10	38	1
SM1300.025.N00	2,5	3,0	12	38	1
SM1300.030.N00	3,0	3,0	12	38	1
SM1300.040.N00	4,0	4,0	15	40	1
SM1300.050.N00	5,0	5,0	16	50	1
SM1300.061.N00	6,0	6,0	18	50	1
SM1300.062.N00	6,0	6,0	25	60	1
SM1300.081.N00	8,0	8,0	22	63	1
SM1300.082.N00	8,0	8,0	40	80	1
SM1300.100.N00	10,0	10,0	30	72	1
SM1300.120.N00	12,0	12,0	30	73	1
SM1300.140.N00	14,0	14,0	30	75	1
SM1300.160.N00	16,0	16,0	35	82	1

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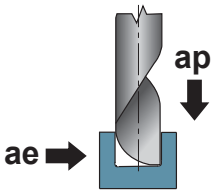
Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	**ACCIAIO POCO LEGATO** LOW ALLOY STEEL	**ACCIAIO ALTO LEGATO** ALLOY STEEL	**INOX MARTENSITICO** STAINLESS STEEL MART.	**INOX AUST. DUPLEX** STAINLESS STEEL AUST.	**GHISA GRIGIA** GREY CAST IRON	**GHISA SFEROIDALE** SPHEROIDAL GRAPHITE	**GHISA MALLEABILE** MALLEABLE CAST IRON	**ALLUMINIO Si ≤ 12%** ALUMINIUM 12 ≤ 12%	**ALLUMINIO Si > 12%** ALUMINIUM 12 > 12%	**NON METALLICI** PLASTICS	**LEGHE RESIST. CALORE** HIGH TEMP. ALLOY	**TITANIO E SUE LEGHE** TITANIUM	**ACCIAIO TEMPRATO** HARDENED STEEL	**GRAFITE** GRAPHITE					
									●							2÷4	250-350	0,005-0,020	0,5xD	1xD
									●							4÷6	250-350	0,015-0,030	0,5xD	1xD
									●							6÷8	250-350	0,025-0,040	0,5xD	1xD
									●							8÷10	250-350	0,035-0,050	0,5xD	1xD
									●							10÷12	250-350	0,045-0,060	0,5xD	1xD
									●							12÷14	250-350	0,060-0,075	0,5xD	1xD
									●							14÷16	250-350	0,075-0,090	0,5xD	1xD
										●						2÷4	130-160	0,003-0,015	0,5xD	1xD
										●						4÷6	130-160	0,008-0,023	0,5xD	1xD
										●						6÷8	130-160	0,018-0,033	0,5xD	1xD
										●						8÷10	130-160	0,025-0,040	0,5xD	1xD
										●						10÷12	130-160	0,030-0,045	0,5xD	1xD
										●						12÷14	130-160	0,040-0,055	0,5xD	1xD
										●						14÷16	130-160	0,045-0,060	0,5xD	1xD
											●					2÷4	80-110	0,015-0,030	0,5xD	1xD
											●					4÷6	80-110	0,020-0,035	0,5xD	1xD
											●					6÷8	80-110	0,040-0,055	0,5xD	1xD
											●					8÷10	80-110	0,050-0,065	0,5xD	1xD
											●					10÷12	80-110	0,070-0,085	0,5xD	1xD
											●					12÷14	80-110	0,090-0,105	0,5xD	1xD
											●					14÷16	80-110	0,110-0,125	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

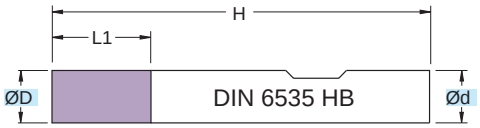
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW2317

ØD = 4 - 20



RIVESTIM. COATED
SILVER

90°

ALU
>5% Si

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

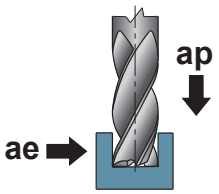
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW2317.040.N00	4	6	11	57	2
SMW2317.050.N00	5	6	13	57	2
SMW2317.060.N00	6	6	13	57	2
SMW2317.080.N00	8	8	19	63	2
SMW2317.100.N00	10	10	22	72	2
SMW2317.120.N00	12	12	26	83	2
SMW2317.140.N00	14	14	26	83	2
SMW2317.160.N00	16	16	32	92	2
SMW2317.180.N00	18	18	32	92	2
SMW2317.200.N00	20	20	38	104	2

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							4÷6	250-350	0,015-0,030	0,5xD	1xD
									●							6÷8	250-350	0,030-0,045	0,5xD	1xD
									●							8÷10	250-350	0,040-0,055	0,5xD	1xD
									●							10÷12	250-350	0,050-0,065	0,5xD	1xD
									●							12÷14	250-350	0,090-0,105	0,5xD	1xD
									●							14÷16	250-350	0,110-0,125	0,5xD	1xD
									●							16÷18	250-350	0,130-0,145	0,5xD	1xD
									●							18÷20	250-350	0,150-0,165	0,5xD	1xD
										●						4÷6	130-160	0,015-0,030	0,5xD	1xD
										●						6÷8	130-160	0,030-0,045	0,5xD	1xD
										●						8÷10	130-160	0,040-0,055	0,5xD	1xD
										●						10÷12	130-160	0,050-0,065	0,5xD	1xD
										●						12÷14	130-160	0,090-0,105	0,5xD	1xD
										●						14÷16	130-160	0,110-0,125	0,5xD	1xD
										●						16÷18	130-160	0,130-0,145	0,5xD	1xD
										●						18÷20	130-160	0,150-0,165	0,5xD	1xD
											●					4÷6	80-110	0,030-0,045	0,5xD	1xD
											●					6÷8	80-110	0,045-0,060	0,5xD	1xD
											●					8÷10	80-110	0,060-0,075	0,5xD	1xD
											●					10÷12	80-110	0,080-0,095	0,5xD	1xD
											●					12÷14	80-110	0,100-0,115	0,5xD	1xD
											●					14÷16	80-110	0,130-0,145	0,5xD	1xD
											●					16÷18	80-110	0,150-0,165	0,5xD	1xD
											●					18÷20	80-110	0,170-0,185	0,5xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

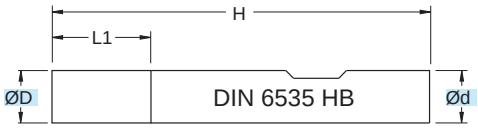
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

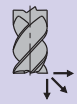
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW2317..N01

ØD = 3 - 20





ALU
≤5% Si

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

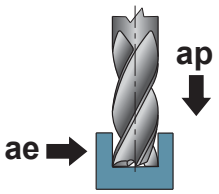
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW2317.030.N01	3	6	8	57	2
SMW2317.040.N01	4	6	11	57	2
SMW2317.050.N01	5	6	13	57	2
SMW2317.060.N01	6	6	13	57	2
SMW2317.080.N01	8	8	19	63	2
SMW2317.100.N01	10	10	22	72	2
SMW2317.120.N01	12	12	26	83	2
SMW2317.140.N01	14	14	26	83	2
SMW2317.160.N01	16	16	32	92	2
SMW2317.180.N01	18	18	32	92	2
SMW2317.200.N01	20	20	38	104	2

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							3	250-350	0,005-0,020	0,5xD	1xD
									●							4÷6	250-350	0,015-0,030	0,5xD	1xD
									●							6÷8	250-350	0,030-0,045	0,5xD	1xD
									●							8÷10	250-350	0,040-0,055	0,5xD	1xD
									●							10÷12	250-350	0,050-0,065	0,5xD	1xD
									●							12÷14	250-350	0,090-0,105	0,5xD	1xD
									●							14÷16	250-350	0,110-0,125	0,5xD	1xD
									●							16÷18	250-350	0,130-0,145	0,5xD	1xD
									●							18÷20	250-350	0,150-0,165	0,5xD	1xD
										●						3	130-160	0,005-0,020	0,5xD	1xD
										●						4÷6	130-160	0,015-0,030	0,5xD	1xD
										●						6÷8	130-160	0,030-0,045	0,5xD	1xD
										●						8÷10	130-160	0,040-0,055	0,5xD	1xD
										●						10÷12	130-160	0,050-0,065	0,5xD	1xD
										●						12÷14	130-160	0,090-0,105	0,5xD	1xD
										●						14÷16	130-160	0,110-0,125	0,5xD	1xD
										●						16÷18	130-160	0,130-0,145	0,5xD	1xD
										●						18÷20	130-160	0,150-0,165	0,5xD	1xD
											●					3	80-110	0,015-0,030	0,5xD	1xD
											●					4÷6	80-110	0,030-0,045	0,5xD	1xD
											●					6÷8	80-110	0,045-0,060	0,5xD	1xD
											●					8÷10	80-110	0,060-0,075	0,5xD	1xD
											●					10÷12	80-110	0,080-0,095	0,5xD	1xD
											●					12÷14	80-110	0,100-0,115	0,5xD	1xD
											●					14÷16	80-110	0,130-0,145	0,5xD	1xD
											●					16÷18	80-110	0,150-0,165	0,5xD	1xD
											●					18÷20	80-110	0,170-0,185	0,5xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

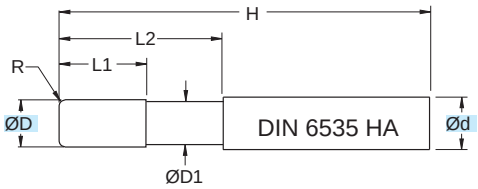
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM2315..N01

ØD = 8 - 25 **NEW**



R

ALU ≤5% Si

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM2315.0801.R050.N01	8	8	7,8	8	27	64	0,5	2
SM2315.0802.R250.N01	8	8	7,8	8	27	64	2,5	2
SM2315.0811.R300.N01	8	8	7,8	8	27	64	3,0	2
SM2315.0803.R400.N01	8	8	7,8	8	27	64	4,0	2
SM2315.0813.R050.N01	8	8	7,8	8	32	70	0,5	2
SM2315.0814.R250.N01	8	8	7,8	8	32	70	2,5	2
SM2315.0815.R300.N01	8	8	7,8	8	32	70	3,0	2
SM2315.0816.R400.N01	8	8	7,8	8	32	70	4,0	2
SM2315.0804.R050.N01	8	8	7,8	8	38	74	0,5	2
SM2315.0805.R250.N01	8	8	7,8	8	38	74	2,5	2
SM2315.0855.R300.N01	8	8	7,8	8	38	74	3,0	2
SM2315.0806.R400.N01	8	8	7,8	8	38	74	4,0	2
SM2315.1001.R050.N01	10	10	9,8	10	32	70	0,5	2
SM2315.1002.R250.N01	10	10	9,8	10	32	70	2,5	2
SM2315.1003.R300.N01	10	10	9,8	10	32	70	3,0	2
SM2315.1004.R400.N01	10	10	9,8	10	32	70	4,0	2
SM2315.1005.R050.N01	10	10	9,8	10	43	80	0,5	2
SM2315.1006.R250.N01	10	10	9,8	10	43	80	2,5	2
SM2315.1007.R300.N01	10	10	9,8	10	43	80	3,0	2
SM2315.1008.R400.N01	10	10	9,8	10	43	80	4,0	2
SM2315.1201.R050.N01	12	12	11,8	12	30	70	0,5	2
SM2315.1202.R250.N01	12	12	11,8	12	30	70	2,5	2
SM2315.1203.R300.N01	12	12	11,8	12	30	70	3,0	2
SM2315.1204.R400.N01	12	12	11,8	12	30	70	4,0	2
SM2315.1205.R050.N01	12	12	11,8	12	40	80	0,5	2
SM2315.1206.R250.N01	12	12	11,8	12	40	80	2,5	2
SM2315.1207.R300.N01	12	12	11,8	12	40	80	3,0	2
SM2315.1208.R400.N01	12	12	11,8	12	40	80	4,0	2
SM2315.1209.R050.N01	12	12	11,8	12	55	95	0,5	2
SM2315.1210.R250.N01	12	12	11,8	12	55	95	2,5	2
SM2315.1211.R300.N01	12	12	11,8	12	55	95	3,0	2
SM2315.1212.R400.N01	12	12	11,8	12	55	95	4,0	2
SM2315.1601.R050.N01	16	16	15,8	16	41	85	0,5	2
SM2315.1602.R250.N01	16	16	15,8	16	41	85	2,5	2
SM2315.1603.R300.N01	16	16	15,8	16	41	85	3,0	2
SM2315.1604.R400.N01	16	16	15,8	16	41	85	4,0	2
SM2315.1605.R050.N01	16	16	15,8	16	50	94	0,5	2
SM2315.1606.R250.N01	16	16	15,8	16	50	94	2,5	2
SM2315.1607.R300.N01	16	16	15,8	16	50	94	3,0	2
SM2315.1608.R400.N01	16	16	15,8	16	50	94	4,0	2

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM2315.1609.R050.N01	16	16	15,8	16	62	106	0,5	2
SM2315.1610.R250.N01	16	16	15,8	16	62	106	2,5	2
SM2315.1611.R300.N01	16	16	15,8	16	62	106	3,0	2
SM2315.1612.R400.N01	16	16	15,8	16	62	106	4,0	2
SM2315.2001.R050.N01	20	20	19,8	20	45	92	0,5	2
SM2315.2002.R250.N01	20	20	19,8	20	45	92	2,5	2
SM2315.2003.R300.N01	20	20	19,8	20	45	92	3,0	2
SM2315.2004.R400.N01	20	20	19,8	20	45	92	4,0	2
SM2315.2005.R050.N01	20	20	19,8	20	60	108	0,5	2
SM2315.2006.R250.N01	20	20	19,8	20	60	108	2,5	2
SM2315.2007.R300.N01	20	20	19,8	20	60	108	3,0	2
SM2315.2008.R400.N01	20	20	19,8	20	60	108	4,0	2
SM2315.2009.R050.N01	20	20	19,8	20	75	123	0,5	2
SM2315.2010.R250.N01	20	20	19,8	20	75	123	2,5	2
SM2315.2011.R300.N01	20	20	19,8	20	75	123	3,0	2
SM2315.2012.R400.N01	20	20	19,8	20	75	123	4,0	2
SM2315.2501.R050.N01	25	25	24,8	25	55	105	0,5	2
SM2315.2502.R250.N01	25	25	24,8	25	55	105	2,5	2
SM2315.2503.R300.N01	25	25	24,8	25	55	105	3,0	2
SM2315.2504.R400.N01	25	25	24,8	25	55	105	4,0	2
SM2315.2570.R050.N01	25	25	24,8	25	75	125	0,5	2
SM2315.2592.R250.N01	25	25	24,8	25	75	125	2,5	2
SM2315.2573.R300.N01	25	25	24,8	25	75	125	3,0	2
SM2315.2549.R400.N01	25	25	24,8	25	75	125	4,0	2
SM2315.2548.R050.N01	25	25	24,8	25	90	140	0,5	2
SM2315.2545.R250.N01	25	25	24,8	25	90	140	2,5	2
SM2315.2508.R300.N01	25	25	24,8	25	90	140	3,0	2
SM2315.2538.R400.N01	25	25	24,8	25	90	140	4,0	2
SM2315.2576.R050.N01	25	25	24,8	25	110	160	0,5	2
SM2315.2571.R250.N01	25	25	24,8	25	110	160	2,5	2
SM2315.2559.R300.N01	25	25	24,8	25	110	160	3,0	2
SM2315.2578.R400.N01	25	25	24,8	25	110	160	4,0	2
SM2315.2587.R050.N01	25	25	24,8	25	130	180	0,5	2
SM2315.2593.R250.N01	25	25	24,8	25	130	180	2,5	2
SM2315.2521.R300.N01	25	25	24,8	25	130	180	3,0	2
SM2315.2584.R400.N01	25	25	24,8	25	130	180	4,0	2

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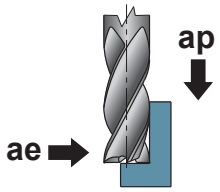
MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							8	350-480	0,120-0,135	4,8	2,0
									●							10	350-480	0,150-0,165	6,0	2,5
									●							12	350-480	0,165-0,180	7,2	3,0
									●							16	350-480	0,185-0,200	9,6	4,0
									●							20	350-480	0,220-0,235	12,0	5,0
									●							25	350-480	0,250-0,265	15,0	6,0
										●						8	250-350	0,095-0,110	4,8	2,0
										●						10	250-350	0,120-0,135	6,0	2,5
										●						12	250-350	0,130-0,145	7,2	3,0
										●						16	250-350	0,145-0,160	9,6	4,0
										●						20	250-350	0,175-0,190	12,0	5,0
										●						25	250-350	0,205-0,220	15,0	6,0
											●					8	640-760	0,120-0,135	4,8	2,0
											●					10	640-760	0,150-0,165	6,0	2,5
											●					12	640-760	0,165-0,180	7,2	3,0
											●					16	640-760	0,185-0,200	9,6	4,0
											●					20	640-760	0,220-0,235	12,0	5,0
											●					25	640-760	0,250-0,265	15,0	6,0

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

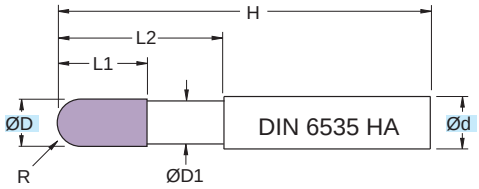
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM2417

ØD = 4 - 12



RIVESTIM. COATED
SILVER

R

ALU
>5% Si

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

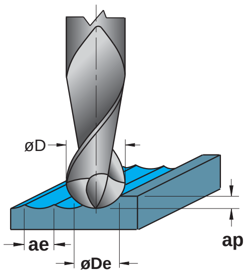
(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM2417.040.S200	4	6	3,7	8	25	70	2,0	2
SM2417.050.S250	5	6	4,6	10	25	70	2,5	2
SM2417.060.S300	6	6	5,5	12	35	80	3,0	2
SM2417.080.S400	8	8	7,4	16	35	80	4,0	2
SM2417.100.S500	10	10	9,2	20	45	90	5,0	2
SM2417.120.S600	12	12	11,0	24	50	100	6,0	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P: ACCIAIO NON LEGATO NOT ALLOY STEEL	P: ACCIAIO POCO LEGATO LOW ALLOY STEEL	P: ACCIAIO ALTO LEGATO ALLOY STEEL	P: INOX MARTENSITICO STAINLESS STEEL MART.	M: INOX AUST. DUPLEX STAINLESS STEEL AUST.	K: GHISA GRIGIA GREY CAST IRON	K: GHISA SFEROIDALE SPHEROIDAL GRAPHITE	K: GHISA MALLEABILE MALLEABLE CAST IRON	N: ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	N: ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	N: NON METALLICI PLASTICS	S: LEGHE RESIST. CALORE HIGH TEMP. ALLOY	S: TITANIO E SUE LEGHE TITANIUM	H: ACCIAIO TEMPRATO HARDENED STEEL	G: GRAFITE GRAPHITE	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
									●							4	250-350	0,050-0,065	0,20	0,4
									●							5	250-350	0,060-0,075	0,25	0,5
									●							6	250-350	0,070-0,085	0,30	0,6
									●							8	250-350	0,080-0,095	0,40	0,8
									●							10	250-350	0,090-0,105	0,50	1,0
									●							12	250-350	0,110-0,125	0,60	1,2
										●						4	180-250	0,050-0,065	0,20	0,4
										●						5	180-250	0,060-0,075	0,25	0,5
										●						6	180-250	0,070-0,085	0,30	0,6
										●						8	180-250	0,080-0,095	0,40	0,8
										●						10	180-250	0,090-0,105	0,50	1,0
										●						12	180-250	0,110-0,125	0,60	1,2



● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

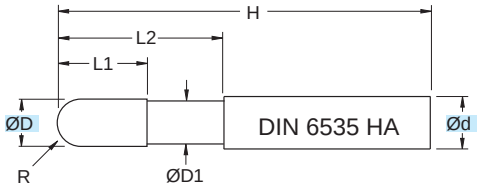
$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

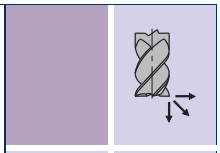
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM2417..01

ØD = 3 - 12





Fresa in M.D.I. Micrograno
Gambo cilindrico HA

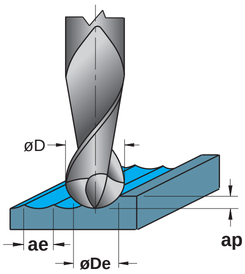
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM2417.030.S150.01	3	6	2,8	6	25	70	1,5	2
SM2417.040.S200.01	4	6	3,7	8	25	70	2,0	2
SM2417.050.S250.01	5	6	4,6	10	25	70	2,5	2
SM2417.060.S300.01	6	6	5,5	12	35	80	3,0	2
SM2417.080.S400.01	8	8	7,4	16	35	80	4,0	2
SM2417.100.S500.01	10	10	9,2	20	45	90	5,0	2
SM2417.120.S600.01	12	12	11,0	24	50	100	6,0	2

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P: ACCIAIO NON LEGATO NOT ALLOY STEEL	P: ACCIAIO POCO LEGATO LOW ALLOY STEEL	P: ACCIAIO ALTO LEGATO ALLOY STEEL	P: INOX MARTENSITICO STAINLESS STEEL MART.	M: INOX AUST. DUPLEX STAINLESS STEEL AUST.	K: GHISA GRIGIA GREY CAST IRON	K: GHISA SFEROIDALE SPHEROIDAL GRAPHITE	K: GHISA MALLEABILE MALLEABLE CAST IRON	N: ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	N: ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	N: NON METALLICI PLASTICS	S: LEGHE RESIST. CALORE HIGH TEMP. ALLOY	S: TITANIO E SUE LEGHE TITANIUM	H: ACCIAIO TEMPRATO HARDENED STEEL	G: GRAFITE GRAPHITE	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
									●							3	250-350	0,040-0,055	0,15	0,3
									●							4	250-350	0,050-0,065	0,20	0,4
									●							5	250-350	0,060-0,075	0,25	0,5
									●							6	250-350	0,070-0,085	0,30	0,6
									●							8	250-350	0,080-0,095	0,40	0,8
									●							10	250-350	0,090-0,105	0,50	1,0
									●							12	250-350	0,110-0,125	0,60	1,2
										●						3	180-250	0,040-0,055	0,15	0,3
										●						4	180-250	0,050-0,065	0,20	0,4
										●						5	180-250	0,060-0,075	0,25	0,5
										●						6	180-250	0,070-0,085	0,30	0,6
										●						8	180-250	0,080-0,095	0,40	0,8
										●						10	180-250	0,090-0,105	0,50	1,0
										●						12	180-250	0,110-0,125	0,60	1,2

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

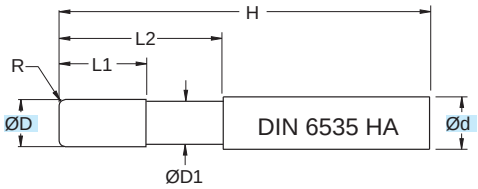
$$fn = fz \cdot z = mm$$

$$Vf = fz \cdot z \cdot n = mm/min$$

SM3315..N01

ØD = 6 - 16

NEW



R

ALU
≤5% Si

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
ilindrical Shank HA

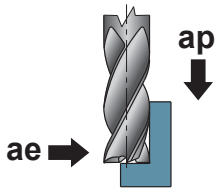
TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3315.060.R050.N01	6	6	5,5	12	27	63	0,50	3
SM3315.060.R100.N01	6	6	5,5	12	27	63	1,00	3
SM3315.060.R150.N01	6	6	5,5	12	27	63	1,50	3
SM3315.080.R050.N01	8	8	7,4	16	33	70	0,50	3
SM3315.080.R100.N01	8	8	7,4	16	33	70	1,00	3
SM3315.080.R200.N01	8	8	7,4	16	33	70	2,00	3
SM3315.100.R050.N01	10	10	9,2	20	35	75	0,50	3
SM3315.100.R150.N01	10	10	9,2	20	35	75	1,50	3
SM3315.100.R250.N01	10	10	9,2	20	35	75	2,50	3
SM3315.100.R300.N01	10	10	9,2	20	35	75	3,00	3
SM3315.100.R400.N01	10	10	9,2	20	35	75	4,00	3
SM3315.120.R050.N01	12	12	11,0	24	39	84	0,50	3
SM3315.120.R150.N01	12	12	11,0	24	39	84	1,50	3
SM3315.120.R250.N01	12	12	11,0	24	39	84	2,50	3
SM3315.120.R300.N01	12	12	11,0	24	39	84	3,00	3
SM3315.120.R400.N01	12	12	11,0	24	39	84	4,00	3
SM3315.160.R050.N01	16	16	15,0	32	50	100	0,50	3
SM3315.160.R200.N01	16	16	15,0	32	50	100	2,00	3
SM3315.160.R250.N01	16	16	15,0	32	50	100	2,50	3
SM3315.160.R300.N01	16	16	15,0	32	50	100	3,00	3
SM3315.160.R400.N01	16	16	15,0	32	50	100	4,00	3

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							6	350-480	0,085-0,100	3,6	1,5
									●							8	350-480	0,120-0,135	4,8	2,0
									●							10	350-480	0,150-0,165	6,0	2,5
									●							12	350-480	0,165-0,180	7,2	3,0
									●							16	350-480	0,185-0,200	9,6	4,0
										●						6	250-350	0,065-0,080	3,6	1,5
										●						8	250-350	0,095-0,110	4,8	2,0
										●						10	250-350	0,120-0,135	6,0	2,5
										●						12	250-350	0,130-0,145	7,2	3,0
										●						16	250-350	0,145-0,160	9,6	4,0
											●					6	640-760	0,085-0,100	3,6	1,5
											●					8	640-760	0,120-0,135	4,8	2,0
											●					10	640-760	0,150-0,165	6,0	2,5
											●					12	640-760	0,165-0,180	7,2	3,0
											●					16	640-760	0,185-0,200	9,6	4,0

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

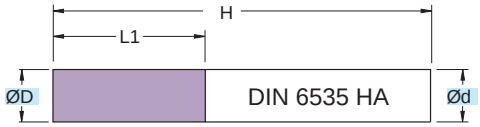
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3417

ØD = 6 - 25



RIVESTIM. COATED
SILVER

90°

ALU
>5% Si

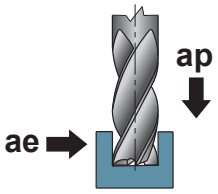
Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SM3417.060.N00	6	6	16	60	3
SM3417.080.N00	8	8	25	78	3
SM3417.100.N00	10	10	28	78	3
SM3417.120.N00	12	12	32	89	3
SM3417.140.N00	14	14	32	89	3
SM3417.160.N00	16	16	36	96	3
SM3417.200.N00	20	20	45	111	3
SM3417.250.N00	25	25	50	126	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							6÷8	250-350	0,030-0,045	0,5xD	1xD
									●							8÷10	250-350	0,040-0,055	0,5xD	1xD
									●							10÷12	250-350	0,050-0,065	0,5xD	1xD
									●							12÷14	250-350	0,090-0,105	0,5xD	1xD
									●							14÷16	250-350	0,110-0,125	0,5xD	1xD
									●							16÷18	250-350	0,130-0,145	0,5xD	1xD
									●							18÷20	250-350	0,150-0,165	0,5xD	1xD
									●							20÷25	250-350	0,170-0,185	0,5xD	1xD
																6÷8	130-160	0,030-0,045	0,5xD	1xD
										●						8÷10	130-160	0,040-0,055	0,5xD	1xD
										●						10÷12	130-160	0,050-0,065	0,5xD	1xD
										●						12÷14	130-160	0,090-0,105	0,5xD	1xD
										●						14÷16	130-160	0,110-0,125	0,5xD	1xD
										●						16÷18	130-160	0,130-0,145	0,5xD	1xD
										●						18÷20	130-160	0,150-0,165	0,5xD	1xD
										●						20÷25	130-160	0,170-0,185	0,5xD	1xD
											●					6÷8	80-110	0,045-0,060	0,5xD	1xD
											●					8÷10	80-110	0,060-0,075	0,5xD	1xD
											●					10÷12	80-110	0,080-0,095	0,5xD	1xD
											●					12÷14	80-110	0,100-0,115	0,5xD	1xD
											●					14÷16	80-110	0,130-0,145	0,5xD	1xD
											●					16÷18	80-110	0,150-0,165	0,5xD	1xD
											●					18÷20	80-110	0,170-0,185	0,5xD	1xD
											●					20÷25	80-110	0,190-0,205	0,5xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

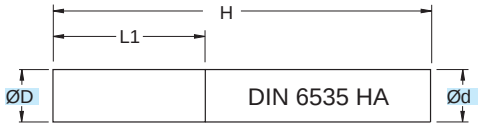
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

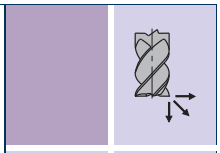
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3417..N01

ØD = 6 - 25





Fresa in M.D.I. Micrograno
Gambo cilindrico HA

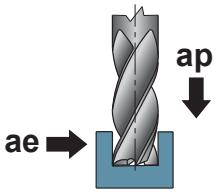
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SM3417.060.N01	6	6	16	60	3
SM3417.080.N01	8	8	25	78	3
SM3417.100.N01	10	10	28	78	3
SM3417.120.N01	12	12	32	89	3
SM3417.140.N01	14	14	32	89	3
SM3417.160.N01	16	16	36	96	3
SM3417.200.N01	20	20	45	111	3
SM3417.250.N01	25	25	50	126	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							6÷8	250-350	0,030-0,045	0,5xD	1xD
									●							8÷10	250-350	0,040-0,055	0,5xD	1xD
									●							10÷12	250-350	0,050-0,065	0,5xD	1xD
									●							12÷14	250-350	0,090-0,105	0,5xD	1xD
									●							14÷16	250-350	0,110-0,125	0,5xD	1xD
									●							16÷18	250-350	0,130-0,145	0,5xD	1xD
									●							18÷20	250-350	0,150-0,165	0,5xD	1xD
									●							20÷25	250-350	0,170-0,185	0,5xD	1xD
																6÷8	130-160	0,030-0,045	0,5xD	1xD
										●						8÷10	130-160	0,040-0,055	0,5xD	1xD
										●						10÷12	130-160	0,050-0,065	0,5xD	1xD
										●						12÷14	130-160	0,090-0,105	0,5xD	1xD
										●						14÷16	130-160	0,110-0,125	0,5xD	1xD
										●						16÷18	130-160	0,130-0,145	0,5xD	1xD
										●						18÷20	130-160	0,150-0,165	0,5xD	1xD
										●						20÷25	130-160	0,170-0,185	0,5xD	1xD
																6÷8	80-110	0,045-0,060	0,5xD	1xD
											●					8÷10	80-110	0,060-0,075	0,5xD	1xD
											●					10÷12	80-110	0,080-0,095	0,5xD	1xD
											●					12÷14	80-110	0,100-0,115	0,5xD	1xD
											●					14÷16	80-110	0,130-0,145	0,5xD	1xD
											●					16÷18	80-110	0,150-0,165	0,5xD	1xD
											●					18÷20	80-110	0,170-0,185	0,5xD	1xD
											●					20÷25	80-110	0,190-0,205	0,5xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

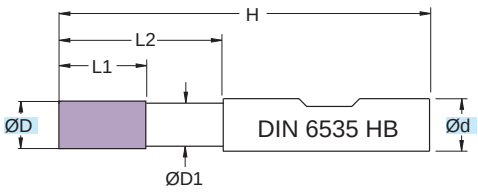
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW3414

ØD = 8 - 25



RIVESTIM. COATED **GOLD**

90°

ALU >5% Si

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

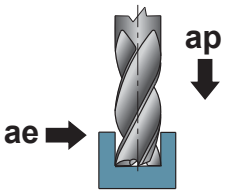
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	z
SMW3414.080.N00	8	8	7,4	19	35	70	3
SMW3414.100.N00	10	10	9,2	22	43	78	3
SMW3414.120.N00	12	12	11,0	26	51	95	3
SMW3414.160.N00	16	16	15,0	32	59	100	3
SMW3414.200.N00	20	20	19,0	38	71	120	3
SMW3414.250.N00	25	25	24,0	45	87	144	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	**ACCIAIO POCO LEGATO** LOW ALLOY STEEL	**ACCIAIO ALTO LEGATO** ALLOY STEEL	**INOX MARTENSITICO** STAINLESS STEEL MART.	**INOX AUST. DUPLEX** STAINLESS STEEL AUST.	**GHISA GRIGIA** GREY CAST IRON	**GHISA SFEROIDALE** SPHEROIDAL GRAPHITE	**GHISA MALLEABILE** MALLEABLE CAST IRON	**ALLUMINIO E SUE LEGHE** ALUMINIUM	**RAME E SUE LEGHE** COPPER	**NON METALLICI** PLASTICS	**LEGHE RESIST. CALORE** HIGH TEMP. ALLOY	**TITANIO E SUE LEGHE** TITANIUM	**ACCIAIO TEMPRATO** HARDENED STEEL	**GRAFITE** GRAPHITE					
									●							8	450-550	0,070-0,085	6,4	1xD
									●							10	450-550	0,090-0,105	8,0	1xD
									●							12	450-550	0,110-0,125	9,6	1xD
									●							16	450-550	0,150-0,165	12,8	1xD
									●							20	450-550	0,190-0,205	16,0	1xD
									●							25	450-550	0,240-0,255	20,0	1xD
										●						8	240-300	0,070-0,085	6,4	1xD
										●						10	240-300	0,090-0,105	8,0	1xD
										●						12	240-300	0,110-0,125	9,6	1xD
										●						16	240-300	0,150-0,165	12,8	1xD
										●						20	240-300	0,190-0,205	16,0	1xD
										●						25	240-300	0,240-0,255	20,0	1xD
											●					8	650-900	0,070-0,085	6,4	1xD
											●					10	650-900	0,090-0,105	8,0	1xD
											●					12	650-900	0,110-0,125	9,6	1xD
											●					16	650-900	0,150-0,165	12,8	1xD
											●					20	650-900	0,190-0,205	16,0	1xD
											●					25	650-900	0,240-0,255	20,0	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

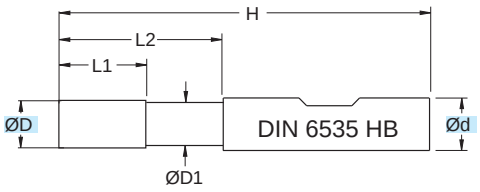
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

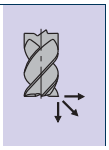
$$fn = fz \cdot z = \text{mm}$$

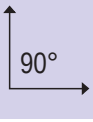
$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW3414..N01

ØD = 8 - 25







ALU
≤5% Si

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

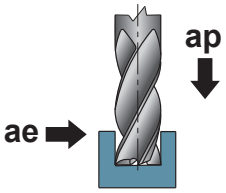
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	z
SMW3414.080.N01	8	8	7,4	19	35	70	3
SMW3414.100.N01	10	10	9,2	22	43	78	3
SMW3414.120.N01	12	12	11,0	26	51	95	3
SMW3414.160.N01	16	16	15,0	32	59	100	3
SMW3414.200.N01	20	20	19,0	38	71	120	3
SMW3414.250.N01	25	25	24,0	45	87	144	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							8	450-550	0,070-0,085	6,4	1xD
									●							10	450-550	0,090-0,105	8,0	1xD
									●							12	450-550	0,110-0,125	9,6	1xD
									●							16	450-550	0,150-0,165	12,8	1xD
									●							20	450-550	0,190-0,205	16,0	1xD
									●							25	450-550	0,240-0,255	20,0	1xD
										●						8	240-300	0,070-0,085	6,4	1xD
										●						10	240-300	0,090-0,105	8,0	1xD
										●						12	240-300	0,110-0,125	9,6	1xD
										●						16	240-300	0,150-0,165	12,8	1xD
										●						20	240-300	0,190-0,205	16,0	1xD
										●						25	240-300	0,240-0,255	20,0	1xD
											●					8	650-900	0,070-0,085	6,4	1xD
											●					10	650-900	0,090-0,105	8,0	1xD
											●					12	650-900	0,110-0,125	9,6	1xD
											●					16	650-900	0,150-0,165	12,8	1xD
											●					20	650-900	0,190-0,205	16,0	1xD
											●					25	650-900	0,240-0,255	20,0	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

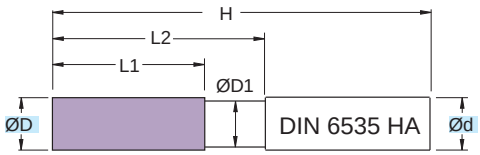
SM3510

ØD = 4 - 20

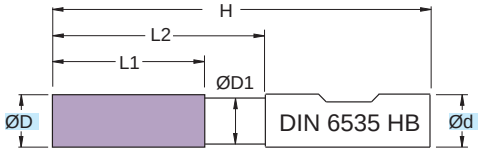
Fresa in M.D.I. Micrograno
Gambo cilindrico HA/HB

Micrograin HM mills
Cilindrical Shank HA/HB

Fino a diametro 12
Up to diameter 12



Oltre diametro 12
Over diameter 12



TOLLERANZE / TOLLERANCE RANGE	D	d
	h6	h6

RIVESTIM. COATED GOLD

45°

ALU >5% Si

HSC

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	z	45°
SM3510.040.N00	4	6	3,7	11	18	57	3	0,1
SM3510.050.N00	5	6	4,7	13	18	57	3	0,1
SM3510.060.N00	6	6	5,7	13	18	57	3	0,2
SM3510.080.N00	8	8	7,4	21	25	63	3	0,2
SM3510.100.N00	10	10	9,2	22	30	72	3	0,2
SM3510.120.N00	12	12	11,0	26	36	83	3	0,2
SM3510.160.N00	16	16	15,0	36	42	92	3	0,2
SM3510.180.N00	18	18	17,0	36	42	92	3	0,2
SM3510.200.N00	20	20	19,0	41	52	104	3	0,2

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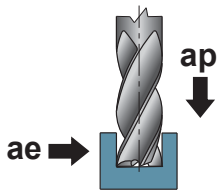
MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							4÷6	400-550	0,040-0,055	1xD	1xD
									●							6÷8	400-550	0,050-0,065	1xD	1xD
									●							8÷10	400-550	0,060-0,075	1xD	1xD
									●							10÷12	400-550	0,070-0,085	1xD	1xD
									●							12÷14	400-550	0,080-0,095	1xD	1xD
									●							14÷16	400-550	0,090-0,105	1xD	1xD
									●							16÷18	400-550	0,100-0,115	1xD	1xD
									●							18÷20	400-550	0,110-0,125	1xD	1xD
										●						4÷6	190-270	0,025-0,040	1xD	1xD
										●						6÷8	190-270	0,030-0,045	1xD	1xD
										●						8÷10	190-270	0,040-0,055	1xD	1xD
										●						10÷12	190-270	0,050-0,065	1xD	1xD
										●						12÷14	190-270	0,060-0,075	1xD	1xD
										●						14÷16	190-270	0,110-0,125	1xD	1xD
										●						16÷18	190-270	0,140-0,155	1xD	1xD
										●						18÷20	190-270	0,160-0,175	1xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

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MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
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Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

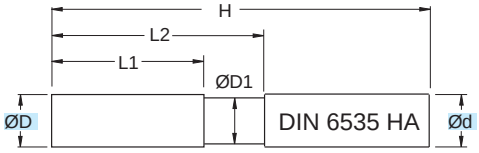
SM3510..N01

ØD = 4 - 20

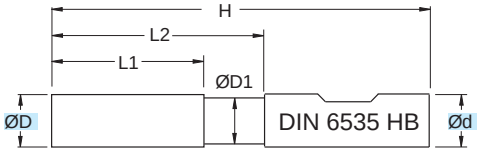
Fresa in M.D.I. Micrograno
Gambo cilindrico HA/HB

Micrograin HM mills
Cilindrical Shank HA/HB

Fino a diametro 12
Up to diameter 12



Oltre diametro 12
Over diameter 12



TOLLERANZE / TOLLERANCE RANGE	D	d
	h6	h6

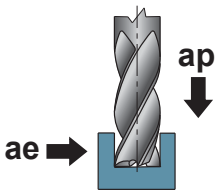
45° ALU ≤5% Si HSC

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	z	45°
SM3510.040.N01	4	6	3,7	11	18	57	3	0,1
SM3510.050.N01	5	6	4,7	13	18	57	3	0,1
SM3510.060.N01	6	6	5,7	13	18	57	3	0,2
SM3510.080.N01	8	8	7,4	21	25	63	3	0,2
SM3510.100.N01	10	10	9,2	22	30	72	3	0,2
SM3510.120.N01	12	12	11,0	26	36	83	3	0,2
SM3510.160.N01	16	16	15,0	36	42	92	3	0,2
SM3510.180.N01	18	18	17,0	36	42	92	3	0,2
SM3510.200.N01	20	20	19,0	41	52	104	3	0,2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							4÷6	400-550	0,040-0,055	1xD	1xD
									●							6÷8	400-550	0,050-0,065	1xD	1xD
									●							8÷10	400-550	0,060-0,075	1xD	1xD
									●							10÷12	400-550	0,070-0,085	1xD	1xD
									●							12÷14	400-550	0,080-0,095	1xD	1xD
									●							14÷16	400-550	0,090-0,105	1xD	1xD
									●							16÷18	400-550	0,100-0,115	1xD	1xD
									●							18÷20	400-550	0,110-0,125	1xD	1xD
										●						4÷6	190-270	0,025-0,040	1xD	1xD
										●						6÷8	190-270	0,030-0,045	1xD	1xD
										●						8÷10	190-270	0,040-0,055	1xD	1xD
										●						10÷12	190-270	0,050-0,065	1xD	1xD
										●						12÷14	190-270	0,060-0,075	1xD	1xD
										●						14÷16	190-270	0,110-0,125	1xD	1xD
										●						16÷18	190-270	0,140-0,155	1xD	1xD
										●						18÷20	190-270	0,160-0,175	1xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

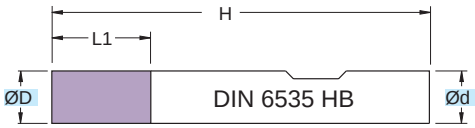
FRESE A 2 TAGLI

MILLING 2 CUTTINGS / ZWEISCHNEIDER / FRAISES A 2 COUPES /
FRESAS DE 2 FILOS

SAU
QUALITY TOOLS ENGINEERING

SMW2200

ØD = 2 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

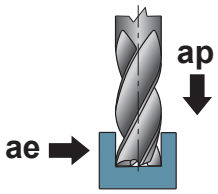
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW2200.020.N00	2	3	3	38	2
SMW2200.030.N00	3	3	4	38	2
SMW2200.040.N00	4	6	5	54	2
SMW2200.050.N00	5	6	6	54	2
SMW2200.060.N00	6	6	7	54	2
SMW2200.080.N00	8	8	9	58	2
SMW2200.100.N00	10	10	11	66	2
SMW2200.120.N00	12	12	12	73	2
SMW2200.140.N00	14	14	14	75	2
SMW2200.160.N00	16	16	16	82	2
SMW2200.180.N00	18	18	18	84	2
SMW2200.200.N00	20	20	20	92	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2	80-110	0,003-0,013	0,5xD	1xD
	●															3	80-110	0,003-0,015	0,5xD	1xD
	●															4	80-110	0,005-0,020	0,5xD	1xD
	●															5	80-110	0,008-0,023	0,5xD	1xD
	●															6	80-110	0,010-0,025	0,5xD	1xD
	●															8	80-110	0,015-0,030	0,5xD	1xD
	●															10	80-110	0,020-0,035	0,5xD	1xD
	●															12	80-110	0,025-0,040	0,5xD	1xD
	●															14	80-110	0,030-0,045	0,5xD	1xD
	●															16	80-110	0,035-0,050	0,5xD	1xD
	●															18	80-110	0,040-0,055	0,5xD	1xD
	●															20	80-110	0,050-0,065	0,5xD	1xD
		●														2	50-80	0,003-0,013	0,5xD	1xD
		●														3	50-80	0,003-0,015	0,5xD	1xD
		●														4	50-80	0,005-0,020	0,5xD	1xD
		●														5	50-80	0,008-0,023	0,5xD	1xD
		●														6	50-80	0,010-0,025	0,5xD	1xD
		●														8	50-80	0,012-0,027	0,5xD	1xD
		●														10	50-80	0,015-0,030	0,5xD	1xD
		●														12	50-80	0,020-0,035	0,5xD	1xD
		●														14	50-80	0,025-0,040	0,5xD	1xD
		●														16	50-80	0,030-0,045	0,5xD	1xD
		●														18	50-80	0,035-0,050	0,5xD	1xD
		●														20	50-80	0,040-0,055	0,5xD	1xD
					●											2	25-50	0,003-0,011	0,5xD	1xD
					●											3	25-50	0,003-0,013	0,5xD	1xD
					●											4	25-50	0,003-0,015	0,5xD	1xD
					●											5	25-50	0,002-0,017	0,5xD	1xD
					●											6	25-50	0,005-0,020	0,5xD	1xD
					●											8	25-50	0,008-0,023	0,5xD	1xD
					●											10	25-50	0,010-0,025	0,5xD	1xD
					●											12	25-50	0,015-0,030	0,5xD	1xD
					●											14	25-50	0,020-0,035	0,5xD	1xD
					●											16	25-50	0,025-0,040	0,5xD	1xD
					●											18	25-50	0,030-0,045	0,5xD	1xD
					●											20	25-50	0,035-0,050	0,5xD	1xD
						●										2	100-130	0,003-0,013	0,5xD	1xD
						●										3	100-130	0,003-0,015	0,5xD	1xD
						●										4	100-130	0,003-0,015	0,5xD	1xD
						●										5	100-130	0,005-0,020	0,5xD	1xD
						●										6	100-130	0,010-0,025	0,5xD	1xD
						●										8	100-130	0,015-0,030	0,5xD	1xD
						●										10	100-130	0,020-0,035	0,5xD	1xD
						●										12	100-130	0,025-0,040	0,5xD	1xD
						●										14	100-130	0,030-0,045	0,5xD	1xD
						●										16	100-130	0,040-0,055	0,5xD	1xD
						●										18	100-130	0,045-0,060	0,5xD	1xD
						●										20	100-130	0,050-0,065	0,5xD	1xD
							●									2	100-130	0,003-0,013	0,5xD	1xD
							●									3	100-130	0,003-0,015	0,5xD	1xD
							●									4	100-130	0,003-0,015	0,5xD	1xD
							●									5	100-130	0,005-0,020	0,5xD	1xD
							●									6	100-130	0,010-0,025	0,5xD	1xD
							●									8	100-130	0,015-0,030	0,5xD	1xD
							●									10	100-130	0,020-0,035	0,5xD	1xD
							●									12	100-130	0,025-0,040	0,5xD	1xD
							●									14	100-130	0,030-0,045	0,5xD	1xD
							●									16	100-130	0,040-0,055	0,5xD	1xD
							●									18	100-130	0,045-0,060	0,5xD	1xD
							●									20	100-130	0,050-0,065	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

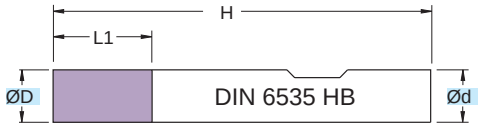
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW2300

ØD = 2 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

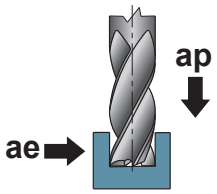
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW2300.020.N00	2,0	3	6	38	2
SMW2300.025.N00	2,5	3	6	38	2
SMW2300.030.N00	3,0	3	7	38	2
SMW2300.035.N00	3,5	6	8	57	2
SMW2300.040.N00	4,0	6	8	57	2
SMW2300.045.N00	4,5	6	10	57	2
SMW2300.047.N00	4,7	6	10	57	2
SMW2300.050.N00	5,0	6	10	57	2
SMW2300.055.N00	5,5	6	10	57	2
SMW2300.057.N00	5,7	6	10	57	2
SMW2300.060.N00	6,0	6	10	57	2
SMW2300.070.N00	7,0	8	16	63	2
SMW2300.077.N00	7,7	8	16	63	2
SMW2300.080.N00	8,0	8	16	63	2
SMW2300.097.N00	9,7	10	19	72	2
SMW2300.100.N00	10,0	10	19	72	2
SMW2300.117.N00	11,7	12	22	83	2
SMW2300.120.N00	12,0	12	22	83	2
SMW2300.137.N00	13,7	14	22	83	2
SMW2300.140.N00	14,0	14	22	83	2
SMW2300.157.N00	15,7	16	26	92	2
SMW2300.160.N00	16,0	16	26	92	2
SMW2300.180.N00	18,0	18	26	92	2
SMW2300.200.N00	20,0	20	32	104	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2÷3	80-110	0,003-0,013	0,5xD	1xD
	●															3÷4	80-110	0,003-0,015	0,5xD	1xD
	●															4÷5	80-110	0,005-0,020	0,5xD	1xD
	●															5÷6	80-110	0,008-0,023	0,5xD	1xD
	●															6÷8	80-110	0,010-0,025	0,5xD	1xD
	●															8÷10	80-110	0,015-0,030	0,5xD	1xD
	●															10÷12	80-110	0,020-0,035	0,5xD	1xD
	●															12÷14	80-110	0,025-0,040	0,5xD	1xD
	●															14÷16	80-110	0,030-0,045	0,5xD	1xD
	●															16÷20	80-110	0,035-0,050	0,5xD	1xD
		●														2÷3	50-80	0,003-0,013	0,5xD	1xD
		●														3÷4	50-80	0,003-0,015	0,5xD	1xD
		●														4÷5	50-80	0,005-0,020	0,5xD	1xD
		●														5÷6	50-80	0,008-0,023	0,5xD	1xD
		●														6÷8	50-80	0,010-0,025	0,5xD	1xD
		●														8÷10	50-80	0,012-0,027	0,5xD	1xD
		●														10÷12	50-80	0,015-0,030	0,5xD	1xD
		●														12÷14	50-80	0,020-0,035	0,5xD	1xD
		●														14÷16	50-80	0,025-0,040	0,5xD	1xD
		●														16÷20	50-80	0,030-0,045	0,5xD	1xD
					●											2÷3	25-50	0,003-0,011	0,5xD	1xD
					●											3÷4	25-50	0,003-0,013	0,5xD	1xD
					●											4÷5	25-50	0,003-0,015	0,5xD	1xD
					●											5÷6	25-50	0,002-0,017	0,5xD	1xD
					●											6÷8	25-50	0,005-0,020	0,5xD	1xD
					●											8÷10	25-50	0,008-0,023	0,5xD	1xD
					●											10÷12	25-50	0,010-0,025	0,5xD	1xD
					●											12÷14	25-50	0,015-0,030	0,5xD	1xD
					●											14÷16	25-50	0,020-0,035	0,5xD	1xD
					●											16÷20	25-50	0,025-0,040	0,5xD	1xD
						●										2÷3	100-130	0,003-0,013	0,5xD	1xD
						●										3÷4	100-130	0,003-0,015	0,5xD	1xD
						●										4÷5	100-130	0,003-0,015	0,5xD	1xD
						●										5÷6	100-130	0,005-0,020	0,5xD	1xD
						●										6÷8	100-130	0,010-0,025	0,5xD	1xD
						●										8÷10	100-130	0,015-0,030	0,5xD	1xD
						●										10÷12	100-130	0,020-0,035	0,5xD	1xD
						●										12÷14	100-130	0,025-0,040	0,5xD	1xD
						●										14÷16	100-130	0,030-0,045	0,5xD	1xD
						●										16÷20	100-130	0,040-0,055	0,5xD	1xD
							●									2÷3	100-130	0,003-0,013	0,5xD	1xD
							●									3÷4	100-130	0,003-0,015	0,5xD	1xD
							●									4÷5	100-130	0,003-0,015	0,5xD	1xD
							●									5÷6	100-130	0,005-0,020	0,5xD	1xD
							●									6÷8	100-130	0,010-0,025	0,5xD	1xD
							●									8÷10	100-130	0,015-0,030	0,5xD	1xD
							●									10÷12	100-130	0,020-0,035	0,5xD	1xD
							●									12÷14	100-130	0,025-0,040	0,5xD	1xD
							●									14÷16	100-130	0,030-0,045	0,5xD	1xD
							●									16÷20	100-130	0,040-0,055	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

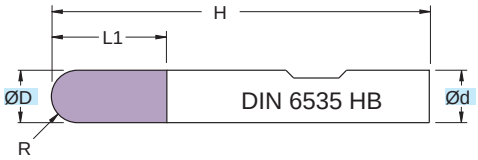
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW2203

ØD = 2,5 - 20



RIVESTIM. COATED
BLACK

R

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6527 Shank HB

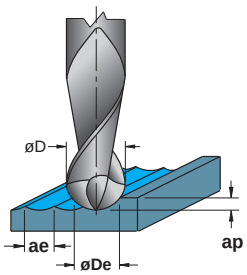
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
SMW2203.025.S012	2,5	6	4	50	1,25	2
SMW2203.030.S015	3,0	6	5	50	1,5	2
SMW2203.035.S017	3,5	6	5	50	1,75	2
SMW2203.040.S020	4,0	6	6	54	2,0	2
SMW2203.045.S022	4,5	6	6	54	2,25	2
SMW2203.050.S025	5,0	6	7	54	2,5	2
SMW2203.060.S030	6,0	6	9	54	3,0	2
SMW2203.080.S040	8,0	8	12	58	4,0	2
SMW2203.100.S050	10,0	10	14	66	5,0	2
SMW2203.120.S060	12,0	12	14	73	6,0	2
SMW2203.140.S070	14,0	14	16	75	7,0	2
SMW2203.160.S080	16,0	16	18	82	8,0	2
SMW2203.180.S090	18,0	18	20	92	9,0	2
SMW2203.200.S100	20,0	20	22	92	10,0	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
		●														2,5	140-170	0,020-0,035	0,05xD	0,06xD
		●														3÷4	140-170	0,035-0,050	0,05xD	0,06xD
		●														4÷5	140-170	0,035-0,050	0,05xD	0,06xD
		●														5÷8	140-170	0,035-0,050	0,05xD	0,06xD
		●														8÷12	140-170	0,040-0,055	0,05xD	0,06xD
		●														12÷16	140-170	0,070-0,085	0,05xD	0,06xD
		●														16÷20	140-170	0,080-0,095	0,05xD	0,06xD
			●													2,5	110-140	0,005-0,020	0,05xD	0,06xD
			●													3÷4	110-140	0,020-0,035	0,05xD	0,06xD
			●													4÷5	110-140	0,020-0,035	0,05xD	0,06xD
			●													5÷8	110-140	0,020-0,035	0,05xD	0,06xD
			●													8÷12	110-140	0,030-0,045	0,05xD	0,06xD
			●													12÷16	110-140	0,050-0,065	0,05xD	0,06xD
			●													16÷20	110-140	0,060-0,075	0,05xD	0,06xD
					●											2,5	50-80	0,003-0,015	0,05xD	0,06xD
					●											3÷4	50-80	0,010-0,025	0,05xD	0,06xD
					●											4÷5	50-80	0,010-0,025	0,05xD	0,06xD
					●											5÷8	50-80	0,010-0,025	0,05xD	0,06xD
					●											8÷12	50-80	0,020-0,035	0,05xD	0,06xD
					●											12÷16	50-80	0,040-0,055	0,05xD	0,06xD
					●											16÷20	50-80	0,050-0,065	0,05xD	0,06xD
						●										2,5	100-130	0,025-0,040	0,05xD	0,06xD
						●										3÷4	100-130	0,050-0,065	0,05xD	0,06xD
						●										4÷5	100-130	0,050-0,065	0,05xD	0,06xD
						●										5÷8	100-130	0,050-0,065	0,05xD	0,06xD
						●										8÷12	100-130	0,060-0,075	0,05xD	0,06xD
						●										12÷16	100-130	0,110-0,125	0,05xD	0,06xD
						●										16÷20	100-130	0,130-0,145	0,05xD	0,06xD
							●									2,5	100-130	0,020-0,035	0,05xD	0,06xD
							●									3÷4	100-130	0,035-0,050	0,05xD	0,06xD
							●									4÷5	100-130	0,035-0,050	0,05xD	0,06xD
							●									5÷8	100-130	0,035-0,050	0,05xD	0,06xD
							●									8÷12	100-130	0,040-0,055	0,05xD	0,06xD
							●									12÷16	100-130	0,070-0,085	0,05xD	0,06xD
							●									16÷20	100-130	0,080-0,095	0,05xD	0,06xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{\text{ØDe} \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM2203

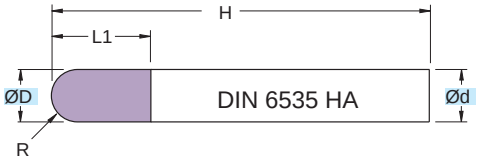
ØD = 2 - 12

NEW

RIVESTIM. COATED
BLACK

R

42 HRC



Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6527 Shank HB

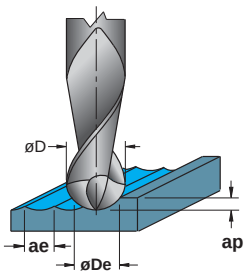
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
SM2203.025.S012	2,5	6	4	50	1,25	2
SM2203.030.S015	3,0	6	5	50	1,5	2
SM2203.035.S017	3,5	6	5	50	1,75	2
SM2203.040.S020	4,0	6	6	54	2,0	2
SM2203.045.S022	4,5	6	6	54	2,25	2
SM2203.050.S025	5,0	6	7	54	2,5	2
SM2203.060.S030	6,0	6	9	54	3,0	2
SM2203.080.S040	8,0	8	12	58	4,0	2
SM2203.100.S050	10,0	10	14	66	5,0	2
SM2203.120.S060	12,0	12	14	73	6,0	2
SM2203.140.S070	14,0	14	16	75	7,0	2
SM2203.160.S080	16,0	16	18	82	8,0	2
SM2203.180.S090	18,0	18	20	92	9,0	2
SM2203.200.S100	20,0	20	22	92	10,0	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
		●														2,5	140-170	0,020-0,035	0,05xD	0,06xD
		●														3÷4	140-170	0,035-0,050	0,05xD	0,06xD
		●														4÷5	140-170	0,035-0,050	0,05xD	0,06xD
		●														5÷8	140-170	0,035-0,050	0,05xD	0,06xD
		●														8÷12	140-170	0,040-0,055	0,05xD	0,06xD
		●														12÷16	140-170	0,070-0,085	0,05xD	0,06xD
		●														16÷20	140-170	0,080-0,095	0,05xD	0,06xD
			●													2,5	110-140	0,005-0,020	0,05xD	0,06xD
			●													3÷4	110-140	0,020-0,035	0,05xD	0,06xD
			●													4÷5	110-140	0,020-0,035	0,05xD	0,06xD
			●													5÷8	110-140	0,020-0,035	0,05xD	0,06xD
			●													8÷12	110-140	0,030-0,045	0,05xD	0,06xD
			●													12÷16	110-140	0,050-0,065	0,05xD	0,06xD
			●													16÷20	110-140	0,060-0,075	0,05xD	0,06xD
					●											2,5	50-80	0,003-0,015	0,05xD	0,06xD
					●											3÷4	50-80	0,010-0,025	0,05xD	0,06xD
					●											4÷5	50-80	0,010-0,025	0,05xD	0,06xD
					●											5÷8	50-80	0,010-0,025	0,05xD	0,06xD
					●											8÷12	50-80	0,020-0,035	0,05xD	0,06xD
					●											12÷16	50-80	0,040-0,055	0,05xD	0,06xD
					●											16÷20	50-80	0,050-0,065	0,05xD	0,06xD
						●										2,5	100-130	0,025-0,040	0,05xD	0,06xD
						●										3÷4	100-130	0,050-0,065	0,05xD	0,06xD
						●										4÷5	100-130	0,050-0,065	0,05xD	0,06xD
						●										5÷8	100-130	0,050-0,065	0,05xD	0,06xD
						●										8÷12	100-130	0,060-0,075	0,05xD	0,06xD
						●										12÷16	100-130	0,110-0,125	0,05xD	0,06xD
						●										16÷20	100-130	0,130-0,145	0,05xD	0,06xD
							●									2,5	100-130	0,020-0,035	0,05xD	0,06xD
							●									3÷4	100-130	0,035-0,050	0,05xD	0,06xD
							●									4÷5	100-130	0,035-0,050	0,05xD	0,06xD
							●									5÷8	100-130	0,035-0,050	0,05xD	0,06xD
							●									8÷12	100-130	0,040-0,055	0,05xD	0,06xD
							●									12÷16	100-130	0,070-0,085	0,05xD	0,06xD
							●									16÷20	100-130	0,080-0,095	0,05xD	0,06xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

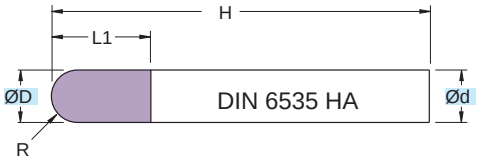
$$n = \frac{Vc \cdot 1000}{\text{ØDe} \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM2424

ØD = 2 - 12



RIVESTIM. COATED
GRAY

R

60 HRC

HSC

Fresa in M.D.I. Micrograno
Gambo Cilindrico HA

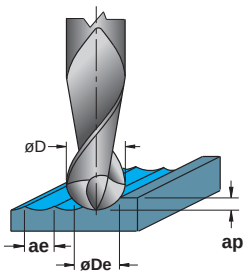
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
SM2424.020.S010	2,0	6,0	5	60	1,0	2
SM2424.030.S015	3,0	6,0	7	60	1,5	2
SM2424.040.S020	4,0	6,0	10	75	2,0	2
SM2424.050.S025	5,0	6,0	12	75	2,5	2
SM2424.060.S030	6,0	6,0	12	100	3,0	2
SM2424.080.S040	8,0	8,0	14	100	4,0	2
SM2424.100.S050	10,0	10,0	18	100	5,0	2
SM2424.120.S060	12,0	12,0	22	100	6,0	2

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2	430-460	0,014-0,029	0,06	0,1
	●															3	430-460	0,022-0,037	0,09	0,15
	●															4	430-460	0,030-0,045	0,12	0,2
	●															6	430-460	0,050-0,065	0,18	0,3
	●															8	430-460	0,070-0,085	0,24	0,4
	●															10	430-460	0,090-0,105	0,3	0,5
	●															12	430-460	0,110-0,125	0,36	0,6
		●														2	250-280	0,008-0,023	0,03	0,08
		●														3	250-280	0,015-0,030	0,045	0,12
		●														4	250-280	0,025-0,040	0,06	0,16
		●														6	250-280	0,040-0,055	0,09	0,24
		●														8	250-280	0,050-0,065	0,12	0,32
		●														10	250-280	0,055-0,070	0,15	0,4
		●														12	250-280	0,060-0,075	0,18	0,48
						●										2	540-575	0,014-0,029	0,06	0,1
						●										3	540-575	0,022-0,037	0,09	0,15
						●										4	540-575	0,030-0,045	0,12	0,2
						●										6	540-575	0,050-0,065	0,18	0,3
						●										8	540-575	0,070-0,085	0,24	0,4
						●										10	540-575	0,090-0,105	0,3	0,5
						●										12	540-575	0,110-0,125	0,36	0,6
							●									2	450-480	0,014-0,029	0,06	0,1
							●									3	450-480	0,022-0,037	0,09	0,15
							●									4	450-480	0,030-0,045	0,12	0,2
							●									6	450-480	0,050-0,065	0,18	0,3
							●									8	450-480	0,070-0,085	0,24	0,4
							●									10	450-480	0,090-0,105	0,3	0,5
							●									12	450-480	0,110-0,125	0,36	0,6
												●				2	30-50	0,008-0,023	0,016	0,04
												●				3	30-50	0,015-0,030	0,024	0,06
												●				4	30-50	0,025-0,040	0,032	0,08
												●				6	30-50	0,040-0,055	0,048	0,12
												●				8	30-50	0,050-0,065	0,064	0,16
												●				10	30-50	0,055-0,070	0,08	0,2
												●				12	30-50	0,060-0,075	0,096	0,24
													●			2	45-65	0,014-0,029	0,06	0,1
													●			3	45-65	0,022-0,037	0,09	0,15
													●			4	45-65	0,030-0,045	0,12	0,2
													●			6	45-65	0,050-0,065	0,18	0,3
													●			8	45-65	0,070-0,085	0,24	0,4
													●			10	45-65	0,090-0,105	0,3	0,5
													●			12	45-65	0,110-0,125	0,36	0,6
														●		2	60-90	0,008-0,023	0,016	0,04
														●		3	60-90	0,015-0,030	0,024	0,06
														●		4	60-90	0,025-0,040	0,032	0,08
														●		6	60-90	0,040-0,055	0,048	0,12
														●		8	60-90	0,050-0,065	0,064	0,16
														●		10	60-90	0,055-0,070	0,08	0,2
														●		12	60-90	0,060-0,075	0,096	0,24

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
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DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

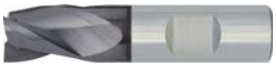
FRESE A 3 TAGLI

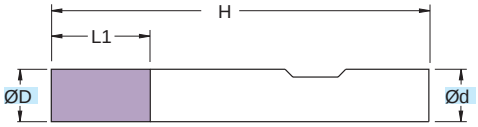
MILLING 3 CUTTINGS / DREISCHNEIDER / FRAISES A 3 COUPES / FRESAS DE 3 FILOS

SAU
QUALITY TOOLS ENGINEERING

SMW3100

ØD = 2 - 20





RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. norma di fabbrica

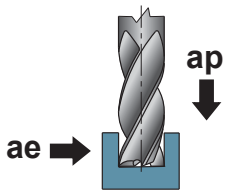
Micrograin HM mills
Shank according to factory standard

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW3100.020.N00	2	6	4	38	3
SMW3100.030.N00	3	6	5	38	3
SMW3100.040.N00	4	6	7	38	3
SMW3100.050.N00	5	6	8	38	3
SMW3100.060.N00	6	6	8	38	3
SMW3100.080.N00	8	8	11	43	3
SMW3100.100.N00	10	10	13	50	3
SMW3100.120.N00	12	12	15	55	3
SMW3100.160.N00	16	16	18	62	3
SMW3100.200.N00	20	20	22	75	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2	100-130	0,003-0,013	1,0	1xD
	●															3	100-130	0,003-0,015	1,5	1xD
	●															4	100-130	0,005-0,020	2,0	1xD
	●															5	100-130	0,008-0,023	2,5	1xD
	●															6	100-130	0,010-0,025	3,0	1xD
	●															8	100-130	0,015-0,030	4,0	1xD
	●															10	100-130	0,020-0,035	5,0	1xD
	●															12	100-130	0,025-0,040	6,0	1xD
	●															16	100-130	0,030-0,045	8,0	1xD
	●															20	100-130	0,035-0,050	10,0	1xD
		●														2	60-90	0,003-0,013	1,0	1xD
		●														3	60-90	0,003-0,015	1,5	1xD
		●														4	60-90	0,005-0,020	2,0	1xD
		●														5	60-90	0,008-0,023	2,5	1xD
		●														6	60-90	0,010-0,025	3,0	1xD
		●														8	60-90	0,015-0,030	4,0	1xD
		●														10	60-90	0,020-0,035	5,0	1xD
		●														12	60-90	0,025-0,040	6,0	1xD
		●														16	60-90	0,030-0,045	8,0	1xD
		●														20	60-90	0,035-0,050	10,0	1xD
			●													2	40-70	0,003-0,013	1,0	1xD
			●													3	40-70	0,003-0,015	1,5	1xD
			●													4	40-70	0,005-0,020	2,0	1xD
			●													5	40-70	0,008-0,023	2,5	1xD
			●													6	40-70	0,010-0,025	3,0	1xD
			●													8	40-70	0,015-0,030	4,0	1xD
			●													10	40-70	0,020-0,035	5,0	1xD
			●													12	40-70	0,025-0,040	6,0	1xD
			●													16	40-70	0,030-0,045	8,0	1xD
			●													20	40-70	0,035-0,050	10,0	1xD
					●											2	30-60	0,003-0,010	1,0	1xD
					●											3	30-60	0,003-0,013	1,5	1xD
					●											4	30-60	0,003-0,015	2,0	1xD
					●											5	30-60	0,002-0,017	2,5	1xD
					●											6	30-60	0,005-0,020	3,0	1xD
					●											8	30-60	0,008-0,023	4,0	1xD
					●											10	30-60	0,010-0,025	5,0	1xD
					●											12	30-60	0,015-0,030	6,0	1xD
					●											16	30-60	0,020-0,035	8,0	1xD
					●											20	30-60	0,025-0,040	10,0	1xD
						●										2	125-155	0,003-0,013	1,0	1xD
						●										3	125-155	0,003-0,015	1,5	1xD
						●										4	125-155	0,005-0,020	2,0	1xD
						●										5	125-155	0,008-0,023	2,5	1xD
						●										6	125-155	0,010-0,025	3,0	1xD
						●										8	125-155	0,015-0,030	4,0	1xD
						●										10	125-155	0,020-0,035	5,0	1xD
						●										12	125-155	0,025-0,040	6,0	1xD
						●										16	125-155	0,030-0,045	8,0	1xD
						●										20	125-155	0,035-0,050	10,0	1xD
							●									2	100-130	0,003-0,013	1,0	1xD
							●									3	100-130	0,003-0,015	1,5	1xD
							●									4	100-130	0,005-0,020	2,0	1xD
							●									5	100-130	0,008-0,023	2,5	1xD
							●									6	100-130	0,010-0,025	3,0	1xD
							●									8	100-130	0,015-0,030	4,0	1xD
							●									10	100-130	0,020-0,035	5,0	1xD
							●									12	100-130	0,025-0,040	6,0	1xD
							●									16	100-130	0,030-0,045	8,0	1xD
							●									20	100-130	0,035-0,050	10,0	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

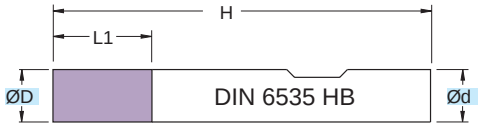
SMW3231

ØD = 2 - 20

RIVESTIM. COATED
RED

90°

58 HRC



Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

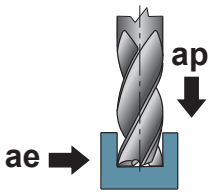
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW3231.020.N00	2	6	4	50	3
SMW3231.030.N00	3	6	5	50	3
SMW3231.040.N00	4	6	7	50	3
SMW3231.050.N00	5	6	8	50	3
SMW3231.060.N00	6	6	8	50	3
SMW3231.070.N00	7	8	11	57	3
SMW3231.080.N00	8	8	11	57	3
SMW3231.090.N00	9	10	15	63	3
SMW3231.100.N00	10	10	15	63	3
SMW3231.120.N00	12	12	21	72	3
SMW3231.160.N00	16	16	26	82	3
SMW3231.200.N00	20	20	32	92	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2	120-150	0,003-0,013	0,5xD	1xD
	●															3	120-150	0,003-0,015	0,5xD	1xD
	●															4	120-150	0,005-0,020	0,5xD	1xD
	●															5	120-150	0,008-0,023	0,5xD	1xD
	●															6	120-150	0,010-0,025	0,5xD	1xD
	●															7	120-150	0,012-0,027	0,5xD	1xD
	●															8	120-150	0,015-0,030	0,5xD	1xD
	●															9	120-150	0,018-0,033	0,5xD	1xD
	●															10	120-150	0,020-0,035	0,5xD	1xD
	●															12	120-150	0,025-0,040	0,5xD	1xD
	●															16	120-150	0,030-0,045	0,5xD	1xD
	●															20	120-150	0,035-0,050	0,5xD	1xD
		●														2	80-120	0,003-0,013	0,5xD	1xD
		●														3	80-120	0,003-0,015	0,5xD	1xD
		●														4	80-120	0,005-0,020	0,5xD	1xD
		●														5	80-120	0,008-0,023	0,5xD	1xD
		●														6	80-120	0,010-0,025	0,5xD	1xD
		●														7	80-120	0,012-0,027	0,5xD	1xD
		●														8	80-120	0,015-0,030	0,5xD	1xD
		●														9	80-120	0,018-0,033	0,5xD	1xD
		●														10	80-120	0,020-0,035	0,5xD	1xD
		●														12	80-120	0,025-0,040	0,5xD	1xD
		●														16	80-120	0,030-0,045	0,5xD	1xD
		●														20	80-120	0,035-0,050	0,5xD	1xD
					●											2	30-60	0,003-0,010	0,5xD	1xD
					●											3	30-60	0,003-0,013	0,5xD	1xD
					●											4	30-60	0,003-0,015	0,5xD	1xD
					●											5	30-60	0,002-0,017	0,5xD	1xD
					●											6	30-60	0,005-0,020	0,5xD	1xD
					●											7	30-60	0,006-0,021	0,5xD	1xD
					●											8	30-60	0,008-0,023	0,5xD	1xD
					●											9	30-60	0,009-0,024	0,5xD	1xD
					●											10	30-60	0,010-0,025	0,5xD	1xD
					●											12	30-60	0,015-0,030	0,5xD	1xD
					●											16	30-60	0,020-0,035	0,5xD	1xD
					●											20	30-60	0,025-0,040	0,5xD	1xD
						●										2	120-150	0,003-0,013	0,5xD	1xD
						●										3	120-150	0,003-0,015	0,5xD	1xD
						●										4	120-150	0,003-0,015	0,5xD	1xD
						●										5	120-150	0,005-0,020	0,5xD	1xD
						●										6	120-150	0,010-0,025	0,5xD	1xD
						●										7	120-150	0,012-0,027	0,5xD	1xD
						●										8	120-150	0,015-0,030	0,5xD	1xD
						●										9	120-150	0,017-0,032	0,5xD	1xD
						●										10	120-150	0,020-0,035	0,5xD	1xD
						●										12	120-150	0,025-0,040	0,5xD	1xD
						●										16	120-150	0,030-0,045	0,5xD	1xD
						●										20	120-150	0,035-0,050	0,5xD	1xD
							●									2	100-130	0,003-0,013	0,5xD	1xD
							●									3	100-130	0,003-0,015	0,5xD	1xD
							●									4	100-130	0,003-0,015	0,5xD	1xD
							●									5	100-130	0,005-0,020	0,5xD	1xD
							●									6	100-130	0,010-0,025	0,5xD	1xD
							●									7	100-130	0,012-0,027	0,5xD	1xD
							●									8	100-130	0,015-0,030	0,5xD	1xD
							●									9	100-130	0,017-0,032	0,5xD	1xD
							●									10	100-130	0,020-0,035	0,5xD	1xD
							●									12	100-130	0,025-0,040	0,5xD	1xD
							●									16	100-130	0,030-0,045	0,5xD	1xD
							●									20	100-130	0,035-0,050	0,5xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

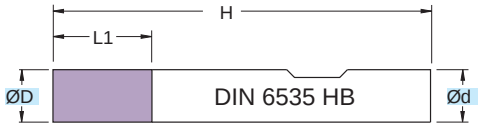
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW3300

ØD = 2 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

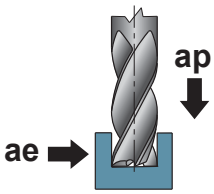
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW3300.020.N00	2,00	3	7	38	3
SMW3300.025.N00	2,50	3	7	38	3
SMW3300.030.N00	3,00	3	8	38	3
SMW3300.035.N00	3,50	4	11	50	3
SMW3300.040.N00	4,00	4	11	50	3
SMW3300.045.N00	4,50	5	11	50	3
SMW3300.050.N00	5,00	5	10	50	3
SMW3300.055.N00	5,50	6	10	50	3
SMW3300.060.N00	6,00	6	10	57	3
SMW3300.065.N00	6,50	8	13	63	3
SMW3300.070.N00	7,00	8	13	63	3
SMW3300.075.N00	7,50	8	16	63	3
SMW3300.080.N00	8,00	8	16	63	3
SMW3300.085.N00	8,50	10	16	72	3
SMW3300.090.N00	9,00	10	16	72	3
SMW3300.095.N00	9,50	10	19	72	3
SMW3300.100.N00	10,00	10	19	72	3
SMW3300.110.N00	11,00	12	19	72	3
SMW3300.120.N00	12,00	12	22	83	3
SMW3300.130.N00	13,00	14	22	83	3
SMW3300.140.N00	14,00	14	22	83	3
SMW3300.150.N00	15,00	16	26	83	3
SMW3300.160.N00	16,00	16	26	83	3
SMW3300.170.N00	17,00	18	26	92	3
SMW3300.180.N00	18,00	18	26	92	3
SMW3300.190.N00	19,00	20	32	104	3
SMW3300.200.N00	20,00	20	32	104	3

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2÷4	80-110	0,003-0,015	0,05xD	1xD
	●															4÷6	80-110	0,008-0,023	0,05xD	1xD
	●															6÷8	80-110	0,012-0,027	0,05xD	1xD
	●															8÷10	80-110	0,017-0,032	0,05xD	1xD
	●															10÷14	80-110	0,025-0,040	0,05xD	1xD
	●															14÷18	80-110	0,035-0,050	0,05xD	1xD
	●															18÷20	80-110	0,050-0,065	0,05xD	1xD
		●														2÷4	50-80	0,003-0,015	0,05xD	1xD
		●														4÷6	50-80	0,008-0,023	0,05xD	1xD
		●														6÷8	50-80	0,012-0,027	0,05xD	1xD
		●														8÷10	50-80	0,017-0,032	0,05xD	1xD
		●														10÷14	50-80	0,025-0,040	0,05xD	1xD
		●														14÷18	50-80	0,035-0,050	0,05xD	1xD
		●														18÷20	50-80	0,050-0,065	0,05xD	1xD
			●													2÷4	30-60	0,003-0,015	0,05xD	1xD
			●													4÷6	30-60	0,008-0,023	0,05xD	1xD
			●													6÷8	30-60	0,012-0,027	0,05xD	1xD
			●													8÷10	30-60	0,017-0,032	0,05xD	1xD
			●													10÷14	30-60	0,025-0,040	0,05xD	1xD
			●													14÷18	30-60	0,035-0,050	0,05xD	1xD
			●													18÷20	30-60	0,050-0,065	0,05xD	1xD
					●											2÷4	30-50	0,003-0,013	0,05xD	1xD
					●											4÷6	30-50	0,002-0,017	0,05xD	1xD
					●											6÷8	30-50	0,006-0,021	0,05xD	1xD
					●											8÷10	30-50	0,009-0,024	0,05xD	1xD
					●											10÷14	30-50	0,015-0,030	0,05xD	1xD
					●											14÷18	30-50	0,025-0,040	0,05xD	1xD
					●											18÷20	30-50	0,040-0,055	0,05xD	1xD
						●										2÷4	125-155	0,003-0,015	0,05xD	1xD
						●										4÷6	125-155	0,008-0,023	0,05xD	1xD
						●										6÷8	125-155	0,012-0,027	0,05xD	1xD
						●										8÷10	125-155	0,017-0,032	0,05xD	1xD
						●										10÷14	125-155	0,025-0,040	0,05xD	1xD
						●										14÷18	125-155	0,035-0,050	0,05xD	1xD
						●										18÷20	125-155	0,050-0,065	0,05xD	1xD
							●									2÷4	100-130	0,003-0,015	0,05xD	1xD
							●									4÷6	100-130	0,008-0,023	0,05xD	1xD
							●									6÷8	100-130	0,012-0,027	0,05xD	1xD
							●									8÷10	100-130	0,017-0,032	0,05xD	1xD
							●									10÷14	100-130	0,025-0,040	0,05xD	1xD
							●									14÷18	100-130	0,035-0,050	0,05xD	1xD
							●									18÷20	100-130	0,050-0,065	0,05xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

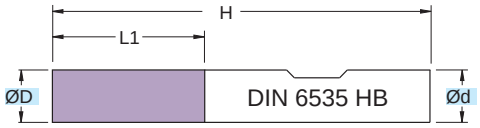
FRESE A 4 TAGLI

MILLING 4 CUTTINGS / VIERSCHNEIDER / FRAISES A 4 COUPES / FRESAS DE 4 FILOS

SAU
QUALITY TOOLS ENGINEERING

SMW4300

ØD = 5,5 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

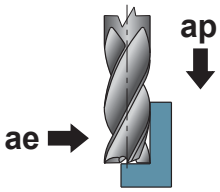
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW4300.055.N00	5,5	6	10	57	4
SMW4300.060.N00	6,0	6	10	57	4
SMW4300.070.N00	7,0	8	13	63	4
SMW4300.080.N00	8,0	8	16	63	4
SMW4300.090.N00	9,0	10	16	72	4
SMW4300.100.N00	10,0	10	19	72	4
SMW4300.110.N00	11,0	12	19	72	4
SMW4300.120.N00	12,0	12	22	83	4
SMW4300.140.N00	14,0	14	22	83	4
SMW4300.160.N00	16,0	16	26	83	4
SMW4300.180.N00	18,0	18	26	92	4
SMW4300.200.N00	20,0	20	32	104	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2÷3	60-90	0,003-0,015	4,5	0,3
	●															3÷4	60-90	0,003-0,017	6,0	0,4
	●															4÷5	60-90	0,005-0,020	7,5	0,5
	●															5÷6	60-90	0,010-0,025	9,0	0,6
	●															6÷8	60-90	0,015-0,030	12,0	0,8
	●															8÷10	60-90	0,020-0,035	15,0	1,0
	●															10÷12	60-90	0,030-0,045	18,0	1,2
	●															12÷16	60-90	0,040-0,055	24,0	1,6
	●															16÷20	60-90	0,050-0,065	30,0	2,0
			●													2÷3	40-70	0,003-0,015	4,5	0,3
			●													3÷4	40-70	0,003-0,017	6,0	0,4
			●													4÷5	40-70	0,005-0,020	7,5	0,5
			●													5÷6	40-70	0,010-0,025	9,0	0,6
			●													6÷8	40-70	0,015-0,030	12,0	0,8
			●													8÷10	40-70	0,020-0,035	15,0	1,0
			●													10÷12	40-70	0,030-0,045	18,0	1,2
			●													12÷16	40-70	0,040-0,055	24,0	1,6
			●													16÷20	40-70	0,050-0,065	30,0	2,0
					●											2÷3	25-55	0,003-0,013	4,5	0,3
					●											3÷4	25-55	0,003-0,015	6,0	0,4
					●											4÷5	25-55	0,003-0,015	7,5	0,5
					●											5÷6	25-55	0,005-0,020	9,0	0,6
					●											6÷8	25-55	0,010-0,025	12,0	0,8
					●											8÷10	25-55	0,015-0,030	15,0	1,0
					●											10÷12	25-55	0,020-0,035	18,0	1,2
					●											12÷16	25-55	0,030-0,045	24,0	1,6
					●											16÷20	25-55	0,040-0,055	30,0	2,0
							●									2÷3	100-130	0,003-0,013	4,5	0,3
							●									3÷4	100-130	0,003-0,015	6,0	0,4
							●									4÷5	100-130	0,003-0,015	7,5	0,5
							●									5÷6	100-130	0,005-0,020	9,0	0,6
							●									6÷8	100-130	0,010-0,025	12,0	0,8
							●									8÷10	100-130	0,015-0,030	15,0	1,0
							●									10÷12	100-130	0,020-0,035	18,0	1,2
							●									12÷16	100-130	0,030-0,045	24,0	1,6
							●									16÷20	100-130	0,040-0,055	30,0	2,0

PER LAVORAZIONI IN CAVA DIMINUIRE I PARAMETRI DEL 20%
FOR SLOT CUTTING PARAMETERS SHOULD BE REDUCED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

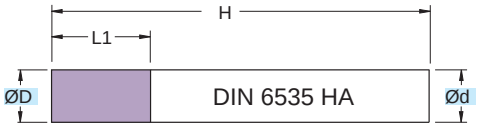
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = mm$$

$$Vf = fz \cdot z \cdot n = mm/min$$

SM4300

ØD = 2 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SM4300.020.N00	2,0	3	7	38	4
SM4300.025.N00	2,5	3	7	38	4
SM4300.030.N00	3,0	3	8	38	4
SM4300.035.N00	3,5	4	11	50	4
SM4300.040.N00	4,0	4	11	50	4
SM4300.045.N00	4,5	5	11	50	4
SM4300.050.N00	5,0	5	10	50	4
SM4300.055.N00	5,5	6	10	57	4
SM4300.060.N00	6,0	6	10	57	4
SM4300.070.N00	7,0	8	13	63	4
SM4300.080.N00	8,0	8	16	63	4
SM4300.090.N00	9,0	10	16	72	4
SM4300.100.N00	10,0	10	19	72	4
SM4300.110.N00	11,0	12	19	72	4
SM4300.120.N00	12,0	12	22	83	4
SM4300.140.N00	14,0	14	22	83	4
SM4300.160.N00	16,0	16	26	83	4
SM4300.180.N00	18,0	18	26	92	4
SM4300.200.N00	20,0	20	32	104	4

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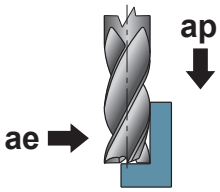
MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
		●														2÷3	60-90	0,003-0,015	4,5	0,3
		●														3÷4	60-90	0,003-0,017	6,0	0,4
		●														4÷5	60-90	0,005-0,020	7,5	0,5
		●														5÷6	60-90	0,010-0,025	9,0	0,6
		●														6÷8	60-90	0,015-0,030	12,0	0,8
		●														8÷10	60-90	0,020-0,035	15,0	1,0
		●														10÷12	60-90	0,030-0,045	18,0	1,2
		●														12÷16	60-90	0,040-0,055	24,0	1,6
		●														16÷20	60-90	0,050-0,065	30,0	2,0
			●													2÷3	40-70	0,003-0,015	4,5	0,3
			●													3÷4	40-70	0,003-0,017	6,0	0,4
			●													4÷5	40-70	0,005-0,020	7,5	0,5
			●													5÷6	40-70	0,010-0,025	9,0	0,6
			●													6÷8	40-70	0,015-0,030	12,0	0,8
			●													8÷10	40-70	0,020-0,035	15,0	1,0
			●													10÷12	40-70	0,030-0,045	18,0	1,2
			●													12÷16	40-70	0,040-0,055	24,0	1,6
			●													16÷20	40-70	0,050-0,065	30,0	2,0
					●											2÷3	25-55	0,003-0,013	4,5	0,3
					●											3÷4	25-55	0,003-0,015	6,0	0,4
					●											4÷5	25-55	0,003-0,015	7,5	0,5
					●											5÷6	25-55	0,005-0,020	9,0	0,6
					●											6÷8	25-55	0,010-0,025	12,0	0,8
					●											8÷10	25-55	0,015-0,030	15,0	1,0
					●											10÷12	25-55	0,020-0,035	18,0	1,2
					●											12÷16	25-55	0,030-0,045	24,0	1,6
					●											16÷20	25-55	0,040-0,055	30,0	2,0
							●									2÷3	100-130	0,003-0,013	4,5	0,3
							●									3÷4	100-130	0,003-0,015	6,0	0,4
							●									4÷5	100-130	0,003-0,015	7,5	0,5
							●									5÷6	100-130	0,005-0,020	9,0	0,6
							●									6÷8	100-130	0,010-0,025	12,0	0,8
							●									8÷10	100-130	0,015-0,030	15,0	1,0
							●									10÷12	100-130	0,020-0,035	18,0	1,2
							●									12÷16	100-130	0,030-0,045	24,0	1,6
							●									16÷20	100-130	0,040-0,055	30,0	2,0

PER LAVORAZIONI IN CAVA DIMINUIRE I PARAMETRI DEL 20%
FOR SLOT CUTTING PARAMETERS SHOULD BE REDUCED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

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MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
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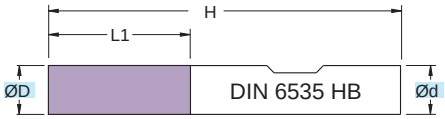
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4400

ØD = 3 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

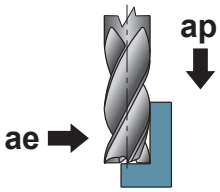
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW4400.030.N00	3	6	20	60	4
SMW4400.040.N00	4	6	25	75	4
SMW4400.050.N00	5	6	25	75	4
SMW4400.060.N00	6	6	30	75	4
SMW4400.080.N00	8	8	45	100	4
SMW4400.100.N00	10	10	45	100	4
SMW4400.120.N00	12	12	45	100	4
SMW4400.120.NL02	12	12	65	150	4
SMW4400.140.N00	14	14	45	100	4
SMW4400.160.N00	16	16	45	100	4
SMW4400.160.NL02	16	16	65	150	4
SMW4400.180.N00	18	18	45	100	4
SMW4400.200.N00	20	20	45	104	4
SMW4400.200.NL02	20	20	65	150	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															3÷4	60-90	0,003-0,017	6,0	0,4
	●															4÷5	60-90	0,005-0,020	7,5	0,5
	●															5÷6	60-90	0,010-0,025	9,0	0,6
	●															6÷8	60-90	0,015-0,030	12,0	0,8
	●															8÷10	60-90	0,020-0,035	15,0	1,0
	●															10÷12	60-90	0,030-0,045	18,0	1,2
	●															12÷16	60-90	0,040-0,055	24,0	1,6
	●															16÷20	60-90	0,050-0,065	30,0	2,0
			●													3÷4	35-65	0,003-0,017	6,0	0,4
			●													4÷5	35-65	0,005-0,020	7,5	0,5
			●													5÷6	35-65	0,010-0,025	9,0	0,6
			●													6÷8	35-65	0,015-0,030	12,0	0,8
			●													8÷10	35-65	0,020-0,035	15,0	1,0
			●													10÷12	35-65	0,030-0,045	18,0	1,2
			●													12÷16	35-65	0,040-0,055	24,0	1,6
			●													16÷20	35-65	0,050-0,065	30,0	2,0
					●											3÷4	25-55	0,003-0,015	6,0	0,4
					●											4÷5	25-55	0,003-0,015	7,5	0,5
					●											5÷6	25-55	0,005-0,020	9,0	0,6
					●											6÷8	25-55	0,010-0,025	12,0	0,8
					●											8÷10	25-55	0,015-0,030	15,0	1,0
					●											10÷12	25-55	0,020-0,035	18,0	1,2
					●											12÷16	25-55	0,030-0,045	24,0	1,6
					●											16÷20	25-55	0,040-0,055	30,0	2,0
							●									3÷4	100-130	0,003-0,015	6,0	0,4
							●									4÷5	100-130	0,003-0,015	7,5	0,5
							●									5÷6	100-130	0,005-0,020	9,0	0,6
							●									6÷8	100-130	0,010-0,025	12,0	0,8
							●									8÷10	100-130	0,015-0,030	15,0	1,0
							●									10÷12	100-130	0,020-0,035	18,0	1,2
							●									12÷16	100-130	0,030-0,045	24,0	1,6
							●									16÷20	100-130	0,040-0,055	30,0	2,0

PER LAVORAZIONI IN CAVA DIMINUIRE I PARAMETRI DEL 20%
FOR SLOT CUTTING PARAMETERS SHOULD BE REDUCED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

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Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

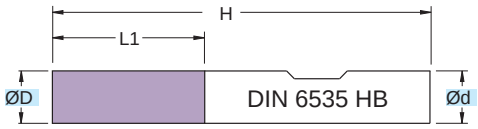
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4402

ØD = 2 - 20



RIVESTIM. COATED
BLACK

45°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

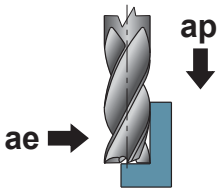
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW4402.020.N00	2	6	8	57	0,05	4
SMW4402.030.N00	3	6	14	57	0,05	4
SMW4402.040.N00	4	6	18	57	0,10	4
SMW4402.050.N00	5	6	20	57	0,10	4
SMW4402.060.N00	6	6	22	57	0,10	4
SMW4402.080.N00	8	8	30	63	0,15	4
SMW4402.100.N00	10	10	33	72	0,15	4
SMW4402.120.N00	12	12	34	83	0,20	4
SMW4402.160.N00	16	16	38	92	0,20	4
SMW4402.200.N00	20	20	47	104	0,30	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
		●														2	60-90	0,003-0,015	1,5xD	0,2xD
		●														3	60-90	0,003-0,015	1,5xD	0,2xD
		●														4	60-90	0,003-0,015	1,5xD	0,2xD
		●														5	60-90	0,003-0,015	1,5xD	0,2xD
		●														6	60-90	0,003-0,015	1,5xD	0,2xD
		●														8	60-90	0,010-0,025	1,5xD	0,2xD
		●														10	60-90	0,010-0,025	1,5xD	0,2xD
		●														12	60-90	0,020-0,035	1,5xD	0,2xD
		●														16	60-90	0,030-0,045	1,5xD	0,2xD
		●														20	60-90	0,030-0,045	1,5xD	0,2xD
			●													2	40-70	0,003-0,015	1,5xD	0,2xD
			●													3	40-70	0,003-0,015	1,5xD	0,2xD
			●													4	40-70	0,003-0,015	1,5xD	0,2xD
			●													5	40-70	0,003-0,015	1,5xD	0,2xD
			●													6	40-70	0,003-0,015	1,5xD	0,2xD
			●													8	40-70	0,010-0,025	1,5xD	0,2xD
			●													10	40-70	0,010-0,025	1,5xD	0,2xD
			●													12	40-70	0,020-0,035	1,5xD	0,2xD
			●													16	40-70	0,030-0,045	1,5xD	0,2xD
			●													20	40-70	0,030-0,045	1,5xD	0,2xD
					●											2	25-55	0,003-0,015	1,5xD	0,2xD
					●											3	25-55	0,003-0,015	1,5xD	0,2xD
					●											4	25-55	0,003-0,015	1,5xD	0,2xD
					●											5	25-55	0,003-0,015	1,5xD	0,2xD
					●											6	25-55	0,003-0,015	1,5xD	0,2xD
					●											8	25-55	0,010-0,025	1,5xD	0,2xD
					●											10	25-55	0,010-0,025	1,5xD	0,2xD
					●											12	25-55	0,020-0,035	1,5xD	0,2xD
					●											16	25-55	0,030-0,045	1,5xD	0,2xD
					●											20	25-55	0,030-0,045	1,5xD	0,2xD
							●									2	80-110	0,003-0,015	1,5xD	0,2xD
							●									3	80-110	0,003-0,015	1,5xD	0,2xD
							●									4	80-110	0,010-0,025	1,5xD	0,2xD
							●									5	80-110	0,010-0,025	1,5xD	0,2xD
							●									6	80-110	0,010-0,025	1,5xD	0,2xD
							●									8	80-110	0,030-0,045	1,5xD	0,2xD
							●									10	80-110	0,030-0,045	1,5xD	0,2xD
							●									12	80-110	0,030-0,045	1,5xD	0,2xD
							●									16	80-110	0,040-0,055	1,5xD	0,2xD
							●									20	80-110	0,040-0,055	1,5xD	0,2xD

PER LAVORAZIONI IN CAVA DIMINUIRE I PARAMETRI DEL 20%
FOR SLOT CUTTING PARAMETERS SHOULD BE REDUCED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

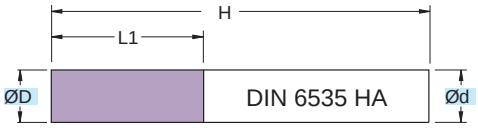
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4330

ØD = 4 - 20



RIVESTIM. COATED
GRAY

45°

52 HRC

HSC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

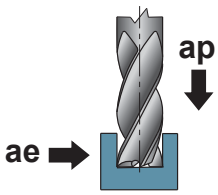
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SM4330.040.N00	4	6	11	57	0,10	4
SM4330.050.N00	5	6	13	57	0,10	4
SM4330.060.N00	6	6	13	57	0,10	4
SM4330.080.N00	8	8	19	63	0,15	4
SM4330.100.N00	10	10	22	72	0,15	4
SM4330.120.N00	12	12	26	83	0,20	4
SM4330.140.N00	14	14	26	83	0,20	4
SM4330.160.N00	16	16	32	92	0,20	4
SM4330.180.N00	18	18	32	92	0,30	4
SM4330.200.N00	20	20	38	104	0,30	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													4	160-190	0,030-0,045	0,5xD	1xD
			●													5	160-190	0,035-0,050	0,5xD	1xD
			●													6	160-190	0,040-0,055	0,5xD	1xD
			●													8	160-190	0,050-0,065	0,5xD	1xD
			●													10	160-190	0,060-0,075	0,5xD	1xD
			●													12	160-190	0,070-0,085	0,5xD	1xD
			●													14	160-190	0,080-0,095	0,5xD	1xD
			●													16	160-190	0,090-0,105	0,5xD	1xD
			●													18	160-190	0,090-0,105	0,5xD	1xD
			●													20	160-190	0,090-0,105	0,5xD	1xD
					●											4	100-130	0,015-0,030	0,5xD	1xD
					●											5	100-130	0,020-0,035	0,5xD	1xD
					●											6	100-130	0,025-0,040	0,5xD	1xD
					●											8	100-130	0,030-0,045	0,5xD	1xD
					●											10	100-130	0,030-0,045	0,5xD	1xD
					●											12	100-130	0,040-0,055	0,5xD	1xD
					●											14	100-130	0,050-0,065	0,5xD	1xD
					●											16	100-130	0,060-0,075	0,5xD	1xD
					●											18	100-130	0,060-0,075	0,5xD	1xD
					●											20	100-130	0,060-0,075	0,5xD	1xD
						●										4	180-210	0,035-0,050	0,5xD	1xD
						●										5	180-210	0,040-0,055	0,5xD	1xD
						●										6	180-210	0,045-0,060	0,5xD	1xD
						●										8	180-210	0,060-0,075	0,5xD	1xD
						●										10	180-210	0,070-0,085	0,5xD	1xD
						●										12	180-210	0,090-0,105	0,5xD	1xD
						●										14	180-210	0,100-0,115	0,5xD	1xD
						●										16	180-210	0,110-0,125	0,5xD	1xD
						●										18	180-210	0,110-0,125	0,5xD	1xD
						●										20	180-210	0,110-0,125	0,5xD	1xD
							●									4	160-190	0,035-0,050	0,5xD	1xD
							●									5	160-190	0,040-0,055	0,5xD	1xD
							●									6	160-190	0,045-0,060	0,5xD	1xD
							●									8	160-190	0,060-0,075	0,5xD	1xD
							●									10	160-190	0,070-0,085	0,5xD	1xD
							●									12	160-190	0,090-0,105	0,5xD	1xD
							●									14	160-190	0,100-0,115	0,5xD	1xD
							●									16	160-190	0,110-0,125	0,5xD	1xD
							●									18	160-190	0,110-0,125	0,5xD	1xD
							●									20	160-190	0,110-0,125	0,5xD	1xD
														●		4	20-40	0,003-0,011	0,5xD	1xD
														●		5	20-40	0,003-0,012	0,5xD	1xD
														●		6	20-40	0,003-0,013	0,5xD	1xD
														●		8	20-40	0,003-0,015	0,5xD	1xD
														●		10	20-40	0,005-0,020	0,5xD	1xD
														●		12	20-40	0,010-0,025	0,5xD	1xD
														●		14	20-40	0,015-0,030	0,5xD	1xD
														●		16	20-40	0,020-0,035	0,5xD	1xD
														●		18	20-40	0,025-0,040	0,5xD	1xD
														●		20	20-40	0,030-0,045	0,5xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

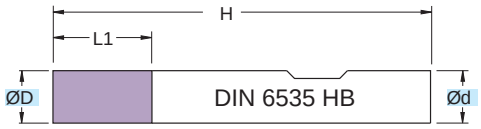
SMW4304

ØD = 3 - 20

RIVESTIM. COATED
GRAY

90°

42 HRC



Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

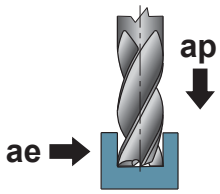
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW4304.030.N00	3	6	6	57	4
SMW4304.040.N00	4	6	8	57	4
SMW4304.050.N00	5	6	10	57	4
SMW4304.060.N00	6	6	13	57	4
SMW4304.080.N00	8	8	16	63	4
SMW4304.100.N00	10	10	22	72	4
SMW4304.120.N00	12	12	26	83	4
SMW4304.160.N00	16	16	32	92	4
SMW4304.200.N00	20	20	38	104	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															3	100-130	0,003-0,015	1xD	1xD
	●															4	100-130	0,005-0,020	1xD	1xD
	●															5	100-130	0,010-0,025	1xD	1xD
	●															6	100-130	0,020-0,035	1xD	1xD
	●															8	100-130	0,030-0,045	1xD	1xD
	●															10	100-130	0,035-0,050	1xD	1xD
	●															12	100-130	0,040-0,055	1xD	1xD
	●															16	100-130	0,050-0,065	1xD	1xD
	●															20	100-130	0,060-0,075	1xD	1xD
			●													3	50-80	0,003-0,015	1xD	1xD
			●													4	50-80	0,005-0,020	1xD	1xD
			●													5	50-80	0,010-0,025	1xD	1xD
			●													6	50-80	0,015-0,030	1xD	1xD
			●													8	50-80	0,020-0,035	1xD	1xD
			●													10	50-80	0,025-0,040	1xD	1xD
			●													12	50-80	0,030-0,045	1xD	1xD
			●													16	50-80	0,040-0,055	1xD	1xD
			●													20	50-80	0,050-0,065	1xD	1xD
					●											3	30-60	0,003-0,013	1xD	1xD
					●											4	30-60	0,003-0,015	1xD	1xD
					●											5	30-60	0,005-0,020	1xD	1xD
					●											6	30-60	0,005-0,020	1xD	1xD
					●											8	30-60	0,010-0,025	1xD	1xD
					●											10	30-60	0,015-0,030	1xD	1xD
					●											12	30-60	0,020-0,035	1xD	1xD
					●											16	30-60	0,030-0,045	1xD	1xD
					●											20	30-60	0,040-0,055	1xD	1xD
						●										3	125-155	0,005-0,020	1xD	1xD
						●										4	125-155	0,015-0,030	1xD	1xD
						●										5	125-155	0,025-0,040	1xD	1xD
						●										6	125-155	0,035-0,050	1xD	1xD
						●										8	125-155	0,050-0,065	1xD	1xD
						●										10	125-155	0,055-0,070	1xD	1xD
						●										12	125-155	0,060-0,075	1xD	1xD
						●										16	125-155	0,080-0,095	1xD	1xD
						●										20	125-155	0,110-0,125	1xD	1xD
							●									3	100-130	0,005-0,020	1xD	1xD
							●									4	100-130	0,015-0,030	1xD	1xD
							●									5	100-130	0,025-0,040	1xD	1xD
							●									6	100-130	0,035-0,050	1xD	1xD
							●									8	100-130	0,050-0,065	1xD	1xD
							●									10	100-130	0,055-0,070	1xD	1xD
							●									12	100-130	0,060-0,075	1xD	1xD
							●									16	100-130	0,080-0,095	1xD	1xD
							●									20	100-130	0,110-0,125	1xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

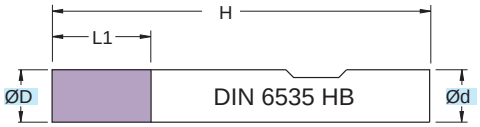
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW3304

ØD = 4 - 25



RIVESTIM. COATED
GRAY

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

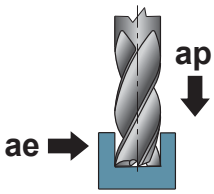
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW3304.040.N00	4	6	11	57	3
SMW3304.050.N00	5	6	13	57	4
SMW3304.060.N00	6	6	16	57	4
SMW3304.070.N00	7	8	16	63	4
SMW3304.080.N00	8	8	16	63	4
SMW3304.090.N00	9	10	19	72	4
SMW3304.100.N00	10	10	22	72	4
SMW3304.120.N00	12	12	26	83	4
SMW3304.140.N00	14	14	26	83	5
SMW3304.160.N00	16	16	32	92	5
SMW3304.200.N00	20	20	38	104	6
SMW3304.250.N00	25	25	45	121	6

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
		●														4	150-180	0,010-0,025	1xD	0,5xD
		●														5	150-180	0,015-0,030	1xD	0,5xD
		●														6	150-180	0,020-0,035	1xD	0,5xD
		●														7	150-180	0,025-0,040	1xD	0,5xD
		●														8	150-180	0,030-0,045	1xD	0,5xD
		●														9	150-180	0,040-0,055	1xD	0,5xD
		●														10	150-180	0,050-0,065	1xD	0,5xD
		●														12	150-180	0,070-0,085	1xD	0,5xD
		●														14	150-180	0,090-0,105	1xD	0,5xD
		●														16	150-180	0,110-0,125	1xD	0,5xD
		●														20	150-180	0,130-0,145	1xD	0,5xD
		●														25	150-180	0,150-0,165	1xD	0,5xD
					●											4	130-160	0,010-0,025	1xD	0,5xD
					●											5	130-160	0,015-0,030	1xD	0,5xD
					●											6	130-160	0,020-0,035	1xD	0,5xD
					●											7	130-160	0,025-0,040	1xD	0,5xD
					●											8	130-160	0,030-0,045	1xD	0,5xD
					●											9	130-160	0,040-0,055	1xD	0,5xD
					●											10	130-160	0,050-0,065	1xD	0,5xD
					●											12	130-160	0,070-0,085	1xD	0,5xD
					●											14	130-160	0,090-0,105	1xD	0,5xD
					●											16	130-160	0,110-0,125	1xD	0,5xD
					●											20	130-160	0,130-0,145	1xD	0,5xD
					●											25	130-160	0,150-0,165	1xD	0,5xD
												●				4	30-60	0,040-0,055	1xD	0,5xD
												●				5	30-60	0,040-0,055	1xD	0,5xD
												●				6	30-60	0,050-0,065	1xD	0,5xD
												●				7	30-60	0,050-0,065	1xD	0,5xD
												●				8	30-60	0,050-0,065	1xD	0,5xD
												●				9	30-60	0,060-0,075	1xD	0,5xD
												●				10	30-60	0,070-0,085	1xD	0,5xD
												●				12	30-60	0,090-0,105	1xD	0,5xD
												●				14	30-60	0,110-0,125	1xD	0,5xD
												●				16	30-60	0,140-0,155	1xD	0,5xD
												●				20	30-60	0,190-0,205	1xD	0,5xD
												●				25	30-60	0,190-0,205	1xD	0,5xD
													●			4	60-90	0,040-0,055	1xD	0,5xD
													●			5	60-90	0,040-0,055	1xD	0,5xD
													●			6	60-90	0,050-0,065	1xD	0,5xD
													●			7	60-90	0,050-0,065	1xD	0,5xD
													●			8	60-90	0,050-0,065	1xD	0,5xD
													●			9	60-90	0,060-0,075	1xD	0,5xD
													●			10	60-90	0,070-0,085	1xD	0,5xD
													●			12	60-90	0,090-0,105	1xD	0,5xD
													●			14	60-90	0,110-0,125	1xD	0,5xD
													●			16	60-90	0,140-0,155	1xD	0,5xD
													●			20	60-90	0,190-0,205	1xD	0,5xD
													●			25	60-90	0,190-0,205	1xD	0,5xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

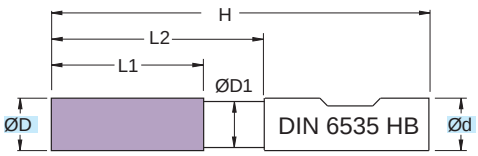
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4404

ØD = 6 - 20



RIVESTIM. COATED
GRAY

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

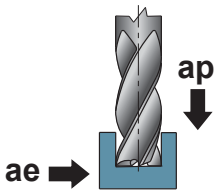
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	z
SMW4404.060.N00	6	6	5,8	13	20	57	4
SMW4404.080.N00	8	8	7,7	19	28	63	4
SMW4404.100.N00	10	10	9,5	22	33	72	4
SMW4404.120.N00	12	12	11,5	26	40	83	4
SMW4404.140.N00	14	14	13,5	26	40	83	4
SMW4404.160.N00	16	16	15,5	32	45	92	4
SMW4404.180.N00	18	18	17,5	32	45	92	4
SMW4404.200.N00	20	20	19,5	38	50	104	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															6	140-170	0,020-0,035	1xD	1xD
	●															8	140-170	0,030-0,045	1xD	1xD
	●															10	140-170	0,040-0,055	1xD	1xD
	●															12	140-170	0,050-0,065	1xD	1xD
	●															14	140-170	0,060-0,075	1xD	1xD
	●															16	140-170	0,070-0,085	1xD	1xD
	●															18	140-170	0,080-0,095	1xD	1xD
	●															20	140-170	0,090-0,105	1xD	1xD
		●														6	120-150	0,014-0,029	1xD	1xD
		●														8	120-150	0,022-0,037	1xD	1xD
		●														10	120-150	0,030-0,045	1xD	1xD
		●														12	120-150	0,038-0,053	1xD	1xD
		●														14	120-150	0,046-0,061	1xD	1xD
		●														16	120-150	0,054-0,069	1xD	1xD
		●														18	120-150	0,062-0,077	1xD	1xD
		●														20	120-150	0,070-0,085	1xD	1xD
			●													6	100-130	0,014-0,029	1xD	1xD
			●													8	100-130	0,022-0,037	1xD	1xD
			●													10	100-130	0,030-0,045	1xD	1xD
			●													12	100-130	0,038-0,053	1xD	1xD
			●													14	100-130	0,046-0,061	1xD	1xD
			●													16	100-130	0,054-0,069	1xD	1xD
			●													18	100-130	0,062-0,077	1xD	1xD
			●													20	100-130	0,070-0,085	1xD	1xD
					●											6	40-70	0,005-0,020	0,75xD	1xD
					●											8	40-70	0,010-0,025	0,75xD	1xD
					●											10	40-70	0,010-0,025	0,75xD	1xD
					●											12	40-70	0,015-0,030	0,75xD	1xD
					●											14	40-70	0,020-0,035	0,75xD	1xD
					●											16	40-70	0,025-0,040	0,75xD	1xD
					●											18	40-70	0,030-0,045	0,75xD	1xD
					●											20	40-70	0,035-0,050	0,75xD	1xD
						●										6	160-220	0,032-0,047	1xD	1xD
						●										8	160-220	0,046-0,061	1xD	1xD
						●										10	160-220	0,060-0,075	1xD	1xD
						●										12	160-220	0,074-0,089	1xD	1xD
						●										14	160-220	0,088-0,103	1xD	1xD
						●										16	160-220	0,102-0,117	1xD	1xD
						●										18	160-220	0,116-0,131	1xD	1xD
						●										20	160-220	0,130-0,145	1xD	1xD
							●									6	130-160	0,020-0,035	1xD	1xD
							●									8	130-160	0,030-0,045	1xD	1xD
							●									10	130-160	0,040-0,055	1xD	1xD
							●									12	130-160	0,050-0,065	1xD	1xD
							●									14	130-160	0,060-0,075	1xD	1xD
							●									16	130-160	0,070-0,085	1xD	1xD
							●									18	130-160	0,080-0,095	1xD	1xD
							●									20	130-160	0,090-0,105	1xD	1xD
												●				6	20-50	0,005-0,020	0,75xD	1xD
												●				8	20-50	0,010-0,025	0,75xD	1xD
												●				10	20-50	0,010-0,025	0,75xD	1xD
												●				12	20-50	0,015-0,030	0,75xD	1xD
												●				14	20-50	0,020-0,035	0,75xD	1xD
												●				16	20-50	0,025-0,040	0,75xD	1xD
												●				18	20-50	0,030-0,045	0,75xD	1xD
												●				20	20-50	0,035-0,050	0,75xD	1xD
													●			6	40-70	0,005-0,020	0,75xD	1xD
													●			8	40-70	0,010-0,025	0,75xD	1xD
													●			10	40-70	0,010-0,025	0,75xD	1xD
													●			12	40-70	0,015-0,030	0,75xD	1xD
													●			14	40-70	0,020-0,035	0,75xD	1xD
													●			16	40-70	0,025-0,040	0,75xD	1xD
													●			18	40-70	0,030-0,045	0,75xD	1xD
													●			20	40-70	0,035-0,050	0,75xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

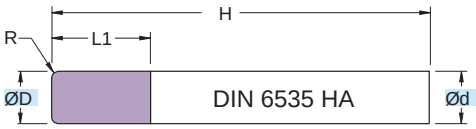
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4325

ØD = 3 - 20



RIVESTIM. COATED **GRAY**

R

62 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

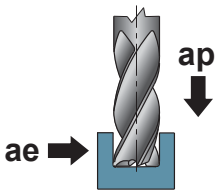
ART.	ØD	Ød	L1	H	R	z
SM4325.030.R030	3	3	6	50	0,3	4
SM4325.030.R050	3	3	6	50	0,5	4
SM4325.040.R030	4	4	8	60	0,3	4
SM4325.040.R050	4	4	8	60	0,5	4
SM4325.040.R100	4	4	8	60	1,0	4
SM4325.040.R150	4	4	8	60	1,5	4
SM4325.050.R030	5	5	10	60	0,3	4
SM4325.050.R050	5	5	10	60	0,5	4
SM4325.050.R100	5	5	10	60	1,0	4
SM4325.050.R150	5	5	10	60	1,5	4
SM4325.050.R200	5	5	10	60	2,0	4
SM4325.060.R030	6	6	12	70	0,3	4
SM4325.060.R050	6	6	12	70	0,5	4
SM4325.060.R100	6	6	12	70	1,0	4
SM4325.060.R150	6	6	12	70	1,5	4
SM4325.060.R200	6	6	12	70	2,0	4
SM4325.060.R250	6	6	12	70	2,5	4
SM4325.080.R030	8	8	16	70	0,3	4
SM4325.080.R050	8	8	16	70	0,5	4
SM4325.080.R100	8	8	16	70	1,0	4
SM4325.080.R150	8	8	16	70	1,5	4
SM4325.080.R200	8	8	16	70	2,0	4
SM4325.080.R250	8	8	16	70	2,5	4
SM4325.080.R300	8	8	16	70	3,0	4
SM4325.100.R030	10	10	20	70	0,3	4
SM4325.100.R050	10	10	20	70	0,5	4

(mm)

ART.	ØD	Ød	L1	H	R	z
SM4325.100.R100	10	10	20	70	1,0	4
SM4325.100.R150	10	10	20	70	1,5	4
SM4325.100.R200	10	10	20	70	2,0	4
SM4325.100.R250	10	10	20	70	2,5	4
SM4325.100.R300	10	10	20	70	3,0	4
SM4325.120.R030	12	12	24	80	0,3	4
SM4325.120.R050	12	12	24	80	0,5	4
SM4325.120.R100	12	12	24	80	1,0	4
SM4325.120.R150	12	12	24	80	1,5	4
SM4325.120.R200	12	12	24	80	2,0	4
SM4325.120.R250	12	12	24	80	2,5	4
SM4325.120.R300	12	12	24	80	3,0	4
SM4325.140.R050	14	14	28	90	0,5	4
SM4325.140.R100	14	14	28	90	1,0	4
SM4325.140.R150	14	14	28	90	1,5	4
SM4325.140.R200	14	14	28	90	2,0	4
SM4325.140.R250	14	14	28	90	2,5	4
SM4325.140.R300	14	14	28	90	3,0	4
SM4325.160.R100	16	16	32	90	1,0	4
SM4325.160.R200	16	16	32	90	2,0	4
SM4325.160.R300	16	16	32	90	3,0	4
SM4325.200.R100	20	20	40	120	1,0	4
SM4325.200.R200	20	20	40	120	2,0	4
SM4325.200.R300	20	20	40	120	3,0	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													3	130-160	0,020-0,035	1xD	1xD
			●													4	130-160	0,020-0,035	1xD	1xD
			●													5	130-160	0,020-0,035	1xD	1xD
			●													6	130-160	0,030-0,045	1xD	1xD
			●													8	130-160	0,040-0,055	1xD	1xD
			●													10	130-160	0,050-0,065	1xD	1xD
			●													12	130-160	0,060-0,075	1xD	1xD
			●													14	130-160	0,070-0,085	1xD	1xD
			●													16	130-160	0,080-0,095	1xD	1xD
			●													20	130-160	0,100-0,115	1xD	1xD
					○											3	50-80	0,020-0,035	1xD	1xD
					○											4	50-80	0,020-0,035	1xD	1xD
					○											5	50-80	0,020-0,035	1xD	1xD
					○											6	50-80	0,030-0,045	1xD	1xD
					○											8	50-80	0,040-0,055	1xD	1xD
					○											10	50-80	0,050-0,065	1xD	1xD
					○											12	50-80	0,060-0,075	1xD	1xD
					○											14	50-80	0,070-0,085	1xD	1xD
					○											16	50-80	0,080-0,095	1xD	1xD
					○											20	50-80	0,100-0,115	1xD	1xD
							○									3	120-150	0,030-0,045	1xD	1xD
							○									4	120-150	0,030-0,045	1xD	1xD
							○									5	120-150	0,040-0,055	1xD	1xD
							○									6	120-150	0,050-0,065	1xD	1xD
							○									8	120-150	0,060-0,075	1xD	1xD
							○									10	120-150	0,070-0,085	1xD	1xD
							○									12	120-150	0,080-0,095	1xD	1xD
							○									14	120-150	0,090-0,105	1xD	1xD
							○									16	120-150	0,090-0,105	1xD	1xD
							○									20	120-150	0,110-0,125	1xD	1xD
														●		3	160-190	0,010-0,025	0,025xD	0,025xD
														●		4	160-190	0,010-0,025	0,025xD	0,025xD
														●		5	160-190	0,020-0,035	0,025xD	0,025xD
														●		6	160-190	0,020-0,035	0,025xD	0,025xD
														●		8	160-190	0,030-0,045	0,025xD	0,025xD
														●		10	160-190	0,040-0,055	0,025xD	0,025xD
														●		12	160-190	0,050-0,065	0,025xD	0,025xD
														●		14	160-190	0,060-0,075	0,025xD	0,025xD
														●		16	160-190	0,070-0,085	0,025xD	0,025xD
														●		20	160-190	0,080-0,095	0,025xD	0,025xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
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○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

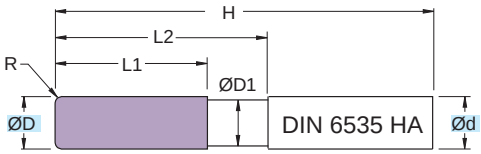
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4215

ØD = 2 - 16



RIVESTIM. COATED GRAY

R

52 HRC

HSC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

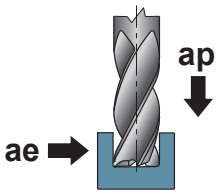
ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4215.020.R010	2	6	1,8	4	21	57	0,1	4
SM4215.020.R020	2	6	1,8	4	21	57	0,2	4
SM4215.020.R030	2	6	1,8	4	21	57	0,3	4
SM4215.020.R040	2	6	1,8	4	21	57	0,4	4
SM4215.040.R010	4	6	3,6	6	21	57	0,1	4
SM4215.040.R020	4	6	3,6	6	21	57	0,2	4
SM4215.040.R030	4	6	3,6	6	21	57	0,3	4
SM4215.040.R040	4	6	3,6	6	21	57	0,4	4
SM4215.040.R050	4	6	3,6	6	21	57	0,5	4
SM4215.040.R060	4	6	3,6	6	21	57	0,6	4
SM4215.040.R070	4	6	3,6	6	21	57	0,7	4
SM4215.040.R080	4	6	3,6	6	21	57	0,8	4
SM4215.040.R090	4	6	3,6	6	21	57	0,9	4
SM4215.040.R100	4	6	3,6	6	21	57	1,0	4
SM4215.040.R110	4	6	3,6	6	21	57	1,1	4
SM4215.040.R120	4	6	3,6	6	21	57	1,2	4
SM4215.040.R130	4	6	3,6	6	21	57	1,3	4
SM4215.040.R140	4	6	3,6	6	21	57	1,4	4
SM4215.040.R150	4	6	3,6	6	21	57	1,5	4
SM4215.060.R010	6	6	5,5	7	21	57	0,1	4
SM4215.060.R020	6	6	5,5	7	21	57	0,2	4
SM4215.060.R030	6	6	5,5	7	21	57	0,3	4
SM4215.060.R040	6	6	5,5	7	21	57	0,4	4
SM4215.060.R050	6	6	5,5	7	21	57	0,5	4
SM4215.060.R060	6	6	5,5	7	21	57	0,6	4
SM4215.060.R070	6	6	5,5	7	21	57	0,7	4
SM4215.060.R080	6	6	5,5	7	21	57	0,8	4
SM4215.060.R090	6	6	5,5	7	21	57	0,9	4
SM4215.060.R100	6	6	5,5	7	21	57	1,0	4
SM4215.060.R110	6	6	5,5	7	21	57	1,1	4
SM4215.060.R120	6	6	5,5	7	21	57	1,2	4

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4215.060.R130	6	6	5,5	7	21	57	1,3	4
SM4215.060.R140	6	6	5,5	7	21	57	1,4	4
SM4215.060.R150	6	6	5,5	7	21	57	1,5	4
SM4215.060.R160	6	6	5,5	7	21	57	1,6	4
SM4215.060.R170	6	6	5,5	7	21	57	1,7	4
SM4215.060.R180	6	6	5,5	7	21	57	1,8	4
SM4215.060.R190	6	6	5,5	7	21	57	1,9	4
SM4215.060.R200	6	6	5,5	7	21	57	2,0	4
SM4215.060.R210	6	6	5,5	7	21	57	2,1	4
SM4215.060.R220	6	6	5,5	7	21	57	2,2	4
SM4215.060.R230	6	6	5,5	7	21	57	2,3	4
SM4215.060.R240	6	6	5,5	7	21	57	2,4	4
SM4215.060.R250	6	6	5,5	7	21	57	2,5	4
SM4215.080.R050	8	8	7,4	9	27	63	0,5	4
SM4215.080.R100	8	8	7,4	9	27	63	1,0	4
SM4215.080.R150	8	8	7,4	9	27	63	1,5	4
SM4215.080.R200	8	8	7,4	9	27	63	2,0	4
SM4215.100.R050	10	10	9,2	11	32	72	0,5	4
SM4215.100.R100	10	10	9,2	11	32	72	1,0	4
SM4215.100.R150	10	10	9,2	11	32	72	1,5	4
SM4215.100.R200	10	10	9,2	11	32	72	2,0	4
SM4215.120.R050	12	12	11,0	12	38	83	0,5	4
SM4215.120.R100	12	12	11,0	12	38	83	1,0	4
SM4215.120.R150	12	12	11,0	12	38	83	1,5	4
SM4215.120.R200	12	12	11,0	12	38	83	2,0	4
SM4215.160.R050	16	16	15,0	16	44	92	0,5	4
SM4215.160.R100	16	16	15,0	16	44	92	1,0	4
SM4215.160.R150	16	16	15,0	16	44	92	1,5	4
SM4215.160.R200	16	16	15,0	16	44	92	2,0	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													2	130-160	0,020-0,035	1xD	1xD
			●													4	130-160	0,020-0,035	1xD	1xD
			●													6	130-160	0,030-0,045	1xD	1xD
			●													8	130-160	0,040-0,055	1xD	1xD
			●													10	130-160	0,050-0,065	1xD	1xD
			●													12	130-160	0,060-0,075	1xD	1xD
			●													16	130-160	0,080-0,095	1xD	1xD
					○											2	50-80	0,020-0,035	1xD	1xD
					○											4	50-80	0,020-0,035	1xD	1xD
					○											6	50-80	0,030-0,045	1xD	1xD
					○											8	50-80	0,040-0,055	1xD	1xD
					○											10	50-80	0,050-0,065	1xD	1xD
					○											12	50-80	0,060-0,075	1xD	1xD
					○											16	50-80	0,080-0,095	1xD	1xD
							○									2	120-150	0,030-0,045	1xD	1xD
							○									4	120-150	0,030-0,045	1xD	1xD
							○									6	120-150	0,050-0,065	1xD	1xD
							○									8	120-150	0,060-0,075	1xD	1xD
							○									10	120-150	0,070-0,085	1xD	1xD
							○									12	120-150	0,080-0,095	1xD	1xD
							○									16	120-150	0,090-0,105	1xD	1xD
														●		2	160-190	0,010-0,025	0,025xD	0,025xD
														●		4	160-190	0,010-0,025	0,025xD	0,025xD
														●		6	160-190	0,020-0,035	0,025xD	0,025xD
														●		8	160-190	0,030-0,045	0,025xD	0,025xD
														●		10	160-190	0,040-0,055	0,025xD	0,025xD
														●		12	160-190	0,050-0,065	0,025xD	0,025xD
														●		16	160-190	0,070-0,085	0,025xD	0,025xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

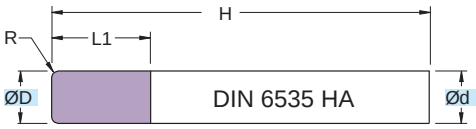
SM4525

ØD = 3 - 20

RIVESTIM. COATED
GRAY

R

62 HRC



Fresa in M.D.I. Micrograno
Gambo cilindrico HA

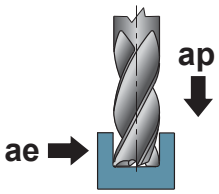
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)						
ART.	ØD	Ød	L1	H	R	z
SM4525.030.R030	3	3	6	70	0,3	4
SM4525.030.R050	3	3	6	70	0,5	4
SM4525.040.R030	4	4	8	80	0,3	4
SM4525.040.R050	4	4	8	80	0,5	4
SM4525.040.R100	4	4	8	80	1,0	4
SM4525.040.R150	4	4	8	80	1,5	4
SM4525.050.R030	5	5	10	100	0,3	4
SM4525.050.R050	5	5	10	100	0,5	4
SM4525.050.R100	5	5	10	100	1,0	4
SM4525.050.R150	5	5	10	100	1,5	4
SM4525.050.R200	5	5	10	100	2,0	4
SM4525.060.R030	6	6	12	100	0,3	4
SM4525.060.R050	6	6	12	100	0,5	4
SM4525.060.R100	6	6	12	100	1,0	4
SM4525.060.R150	6	6	12	100	1,5	4
SM4525.060.R200	6	6	12	100	2,0	4
SM4525.060.R250	6	6	12	100	2,5	4
SM4525.080.R030	8	8	16	100	0,3	4
SM4525.080.R050	8	8	16	100	0,5	4
SM4525.080.R100	8	8	16	100	1,0	4
SM4525.080.R150	8	8	16	100	1,5	4
SM4525.080.R200	8	8	16	100	2,0	4
SM4525.080.R250	8	8	16	100	2,5	4
SM4525.080.R300	8	8	16	100	3,0	4
SM4525.100.R030	10	10	20	120	0,3	4

(mm)						
ART.	ØD	Ød	L1	H	R	z
SM4525.100.R050	10	10	20	120	0,5	4
SM4525.100.R100	10	10	20	120	1,0	4
SM4525.100.R150	10	10	20	120	1,5	4
SM4525.100.R200	10	10	20	120	2,0	4
SM4525.100.R250	10	10	20	120	2,5	4
SM4525.100.R300	10	10	20	120	3,0	4
SM4525.120.R030	12	12	24	120	0,3	4
SM4525.120.R050	12	12	24	120	0,5	4
SM4525.120.R100	12	12	24	120	1,0	4
SM4525.120.R150	12	12	24	120	1,5	4
SM4525.120.R200	12	12	24	120	2,0	4
SM4525.120.R250	12	12	24	120	2,5	4
SM4525.120.R300	12	12	24	120	3,0	4
SM4525.140.R050	14	14	28	120	0,5	4
SM4525.140.R100	14	14	28	120	1,0	4
SM4525.140.R150	14	14	28	120	1,5	4
SM4525.140.R200	14	14	28	120	2,0	4
SM4525.140.R250	14	14	28	120	2,5	4
SM4525.140.R300	14	14	28	120	3,0	4
SM4525.160.R100	16	16	32	120	1,0	4
SM4525.160.R200	16	16	32	120	2,0	4
SM4525.160.R300	16	16	32	120	3,0	4
SM4525.200.R100	20	20	40	160	1,0	4
SM4525.200.R200	20	20	40	160	2,0	4
SM4525.200.R300	20	20	40	160	3,0	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													3	130-160	0,020-0,035	1xD	1xD
			●													4	130-160	0,020-0,035	1xD	1xD
			●													5	130-160	0,020-0,035	1xD	1xD
			●													6	130-160	0,030-0,045	1xD	1xD
			●													8	130-160	0,040-0,055	1xD	1xD
			●													10	130-160	0,050-0,065	1xD	1xD
			●													12	130-160	0,060-0,075	1xD	1xD
			●													14	130-160	0,070-0,085	1xD	1xD
			●													16	130-160	0,080-0,095	1xD	1xD
			●													20	130-160	0,100-0,115	1xD	1xD
					○											3	50-80	0,020-0,035	1xD	1xD
					○											4	50-80	0,020-0,035	1xD	1xD
					○											5	50-80	0,020-0,035	1xD	1xD
					○											6	50-80	0,030-0,045	1xD	1xD
					○											8	50-80	0,040-0,055	1xD	1xD
					○											10	50-80	0,050-0,065	1xD	1xD
					○											12	50-80	0,060-0,075	1xD	1xD
					○											14	50-80	0,070-0,085	1xD	1xD
					○											16	50-80	0,080-0,095	1xD	1xD
					○											20	50-80	0,100-0,115	1xD	1xD
							○									3	120-150	0,030-0,045	1xD	1xD
							○									4	120-150	0,030-0,045	1xD	1xD
							○									5	120-150	0,040-0,055	1xD	1xD
							○									6	120-150	0,050-0,065	1xD	1xD
							○									8	120-150	0,060-0,075	1xD	1xD
							○									10	120-150	0,070-0,085	1xD	1xD
							○									12	120-150	0,080-0,095	1xD	1xD
							○									14	120-150	0,090-0,105	1xD	1xD
							○									16	120-150	0,090-0,105	1xD	1xD
							○									20	120-150	0,110-0,125	1xD	1xD
														●		3	160-190	0,010-0,025	0,025xD	0,025xD
														●		4	160-190	0,010-0,025	0,025xD	0,025xD
														●		5	160-190	0,020-0,035	0,025xD	0,025xD
														●		6	160-190	0,020-0,035	0,025xD	0,025xD
														●		8	160-190	0,030-0,045	0,025xD	0,025xD
														●		10	160-190	0,040-0,055	0,025xD	0,025xD
														●		12	160-190	0,050-0,065	0,025xD	0,025xD
														●		14	160-190	0,060-0,075	0,025xD	0,025xD
														●		16	160-190	0,070-0,085	0,025xD	0,025xD
														●		20	160-190	0,080-0,095	0,025xD	0,025xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

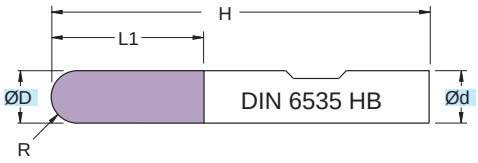
SMW4403

ØD = 3 - 20

RIVESTIM. COATED
BLACK

R

42 HRC



Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

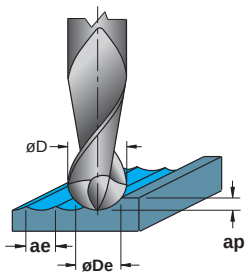
TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	L1	H	R	z
SMW4403.030.S015	3	3	7	38	1,5	4
SMW4403.040.S020	4	4	14	50	2,0	4
SMW4403.050.S025	5	6	16	50	2,5	4
SMW4403.060.S030	6	6	19	60	3,0	4
SMW4403.080.S040	8	8	20	60	4,0	4
SMW4403.100.S050	10	10	21	70	5,0	4
SMW4403.120.S060	12	12	25	75	6,0	4
SMW4403.160.S080	16	16	32	88	8,0	4
SMW4403.200.S100	20	20	38	104	10,0	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															3	80-110	0,020-0,035	0,05xD	0,06xD
	●															4	80-110	0,035-0,050	0,05xD	0,06xD
	●															5	80-110	0,035-0,050	0,05xD	0,06xD
	●															6	80-110	0,035-0,050	0,05xD	0,06xD
	●															8	80-110	0,040-0,055	0,05xD	0,06xD
	●															10	80-110	0,040-0,055	0,05xD	0,06xD
	●															12	80-110	0,060-0,075	0,05xD	0,06xD
	●															16	80-110	0,070-0,085	0,05xD	0,06xD
	●															20	80-110	0,080-0,095	0,05xD	0,06xD
			●													3	55-85	0,005-0,020	0,05xD	0,06xD
			●													4	55-85	0,020-0,035	0,05xD	0,06xD
			●													5	55-85	0,020-0,035	0,05xD	0,06xD
			●													6	55-85	0,020-0,035	0,05xD	0,06xD
			●													8	55-85	0,030-0,045	0,05xD	0,06xD
			●													10	55-85	0,030-0,045	0,05xD	0,06xD
			●													12	55-85	0,040-0,055	0,05xD	0,06xD
			●													16	55-85	0,050-0,065	0,05xD	0,06xD
			●													20	55-85	0,060-0,075	0,05xD	0,06xD
					●											3	30-60	0,003-0,015	0,05xD	0,06xD
					●											4	30-60	0,010-0,025	0,05xD	0,06xD
					●											5	30-60	0,010-0,025	0,05xD	0,06xD
					●											6	30-60	0,010-0,025	0,05xD	0,06xD
					●											8	30-60	0,020-0,035	0,05xD	0,06xD
					●											10	30-60	0,020-0,035	0,05xD	0,06xD
					●											12	30-60	0,030-0,045	0,05xD	0,06xD
					●											16	30-60	0,040-0,055	0,05xD	0,06xD
					●											20	30-60	0,050-0,065	0,05xD	0,06xD
						●										3	100-130	0,025-0,040	0,05xD	0,06xD
						●										4	100-130	0,050-0,065	0,05xD	0,06xD
						●										5	100-130	0,050-0,065	0,05xD	0,06xD
						●										6	100-130	0,050-0,065	0,05xD	0,06xD
						●										8	100-130	0,060-0,075	0,05xD	0,06xD
						●										10	100-130	0,060-0,075	0,05xD	0,06xD
						●										12	100-130	0,080-0,095	0,05xD	0,06xD
						●										16	100-130	0,110-0,125	0,05xD	0,06xD
						●										20	100-130	0,130-0,145	0,05xD	0,06xD
							●									3	100-130	0,020-0,035	0,05xD	0,06xD
							●									4	100-130	0,035-0,050	0,05xD	0,06xD
							●									5	100-130	0,035-0,050	0,05xD	0,06xD
							●									6	100-130	0,035-0,050	0,05xD	0,06xD
							●									8	100-130	0,040-0,055	0,05xD	0,06xD
							●									10	100-130	0,040-0,055	0,05xD	0,06xD
							●									12	100-130	0,060-0,075	0,05xD	0,06xD
							●									16	100-130	0,070-0,085	0,05xD	0,06xD
							●									20	100-130	0,080-0,095	0,05xD	0,06xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

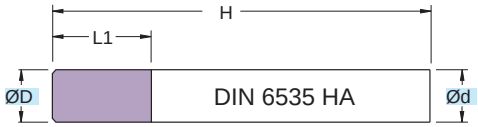
$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM6402

ØD = 4 - 20



RIVESTIM. COATED **GRAY**

45°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SM6402.040.N00	4	6	11	57	0,1	6
SM6402.050.N00	5	6	13	57	0,1	6
SM6402.060.N00	6	6	13	57	0,1	6
SM6402.080.N00	8	8	19	63	0,1	6
SM6402.100.N00	10	10	22	72	0,1	6
SM6402.120.N00	12	12	26	83	0,1	6
SM6402.160.N00	16	16	32	92	0,1	6
SM6402.200.N00	20	20	38	104	0,1	8

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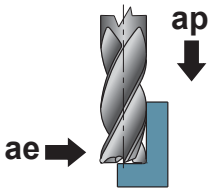
MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															6	140-170	0,010-0,025	9	0,3
	●															8	140-170	0,015-0,030	12	0,4
	●															10	140-170	0,020-0,035	15	0,5
	●															12	140-170	0,035-0,050	18	0,6
	●															16	140-170	0,040-0,055	24	0,8
	●															20	140-170	0,050-0,065	30	1,0
		●														6	70-100	0,005-0,020	9	0,3
		●														8	70-100	0,010-0,025	12	0,4
		●														10	70-100	0,015-0,030	15	0,5
		●														12	70-100	0,025-0,040	18	0,6
		●														16	70-100	0,035-0,050	24	0,8
		●														20	70-100	0,040-0,055	30	1,0
			●													6	60-90	0,005-0,020	9	0,3
			●													8	60-90	0,010-0,025	12	0,4
			●													10	60-90	0,015-0,030	15	0,5
			●													12	60-90	0,025-0,040	18	0,6
			●													16	60-90	0,035-0,050	24	0,8
			●													20	60-90	0,040-0,055	30	1,0
					●											6	20-50	0,005-0,020	9	0,1
					●											8	20-50	0,010-0,025	12	0,1
					●											10	20-50	0,015-0,030	15	0,1
					●											12	20-50	0,020-0,035	18	0,1
					●											16	20-50	0,030-0,045	24	0,1
					●											20	20-50	0,040-0,055	30	0,1
						●										6	135-165	0,005-0,020	9	0,3
						●										8	135-165	0,010-0,025	12	0,4
						●										10	135-165	0,015-0,030	15	0,5
						●										12	135-165	0,025-0,040	18	0,6
						●										16	135-165	0,035-0,050	24	0,8
						●										20	135-165	0,040-0,055	30	1,0
							●									6	110-140	0,005-0,020	9	0,3
							●									8	110-140	0,010-0,025	12	0,4
							●									10	110-140	0,015-0,030	15	0,5
							●									12	110-140	0,025-0,040	18	0,6
							●									16	110-140	0,035-0,050	24	0,8
							●									20	110-140	0,040-0,055	30	1,0
										●						6	80-110	0,005-0,020	9	0,1
										●						8	80-110	0,010-0,025	12	0,1
										●						10	80-110	0,020-0,035	15	0,1
										●						12	80-110	0,030-0,045	18	0,1
										●						16	80-110	0,040-0,055	24	0,1
										●						20	80-110	0,050-0,065	30	0,1
												●				6	15-40	0,005-0,020	9	0,1
												●				8	15-40	0,010-0,025	12	0,1
												●				10	15-40	0,015-0,030	15	0,1
												●				12	15-40	0,020-0,035	18	0,1
												●				16	15-40	0,030-0,045	24	0,1
												●				20	15-40	0,040-0,055	30	0,1
													●			6	40-60	0,005-0,020	9	0,1
													●			8	40-60	0,010-0,025	12	0,1
													●			10	40-60	0,015-0,030	15	0,1
													●			12	40-60	0,020-0,035	18	0,1
													●			16	40-60	0,030-0,045	24	0,1
													●			20	40-60	0,040-0,055	30	0,1

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

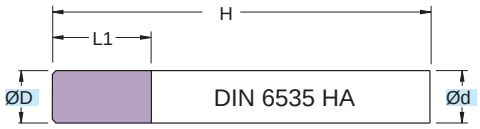
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM6502

ØD = 4 - 20



RIVESTIM. COATED
GRAY

45°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

Micrograin HM mills
DIN 6535 HA Shank

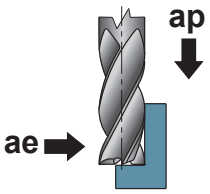
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SM6502.040.N00	4	6	16	62	0,1	6
SM6502.050.N00	5	6	18	62	0,1	6
SM6502.060.N00	6	6	18	62	0,1	6
SM6502.080.N00	8	8	24	68	0,1	6
SM6502.100.N00	10	10	30	80	0,1	6
SM6502.120.N00	12	12	36	93	0,1	6
SM6502.160.N00	16	16	48	108	0,1	6
SM6502.200.N00	20	20	60	126	0,1	8

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															6	100-130	0,005-0,020	15	0,18
	●															8	100-130	0,010-0,025	20	0,24
	●															10	100-130	0,015-0,030	25	0,30
	●															12	100-130	0,020-0,035	30	0,36
	●															16	100-130	0,030-0,045	40	0,48
	●															20	100-130	0,035-0,050	50	0,60
		●														6	50-80	0,003-0,015	15	0,18
		●														8	50-80	0,005-0,020	20	0,24
		●														10	50-80	0,010-0,025	25	0,30
		●														12	50-80	0,020-0,035	30	0,36
		●														16	50-80	0,025-0,040	40	0,48
		●														20	50-80	0,030-0,045	50	0,60
			●													6	40-70	0,003-0,015	15	0,18
			●													8	40-70	0,005-0,020	20	0,24
			●													10	40-70	0,010-0,025	25	0,30
			●													12	40-70	0,020-0,035	30	0,36
			●													16	40-70	0,025-0,040	40	0,48
			●													20	40-70	0,030-0,045	50	0,60
					●											6	20-40	0,003-0,015	15	0,1
					●											8	20-40	0,005-0,020	20	0,1
					●											10	20-40	0,010-0,025	25	0,1
					●											12	20-40	0,020-0,035	30	0,1
					●											16	20-40	0,025-0,040	40	0,1
					●											20	20-40	0,030-0,045	50	0,1
						●										6	140-170	0,003-0,015	15	0,18
						●										8	140-170	0,005-0,020	20	0,24
						●										10	140-170	0,010-0,025	25	0,30
						●										12	140-170	0,020-0,035	30	0,36
						●										16	140-170	0,025-0,040	40	0,48
						●										20	140-170	0,030-0,045	50	0,60
							●									6	120-150	0,003-0,015	15	0,18
							●									8	120-151	0,005-0,020	20	0,24
							●									10	120-152	0,010-0,025	25	0,30
							●									12	120-153	0,020-0,035	30	0,36
							●									16	120-154	0,025-0,040	40	0,48
							●									20	120-155	0,030-0,045	50	0,60
										●						6	110-140	0,003-0,015	15	0,1
										●						8	110-140	0,005-0,020	20	0,1
										●						10	110-140	0,010-0,025	25	0,1
										●						12	110-140	0,020-0,035	30	0,1
										●						16	110-140	0,025-0,040	40	0,1
										●						20	110-140	0,030-0,045	50	0,1
												●				6	15-30	0,003-0,015	15	0,1
												●				8	15-30	0,005-0,020	20	0,1
												●				10	15-30	0,010-0,025	25	0,1
												●				12	15-30	0,020-0,035	30	0,1
												●				16	15-30	0,025-0,040	40	0,1
												●				20	15-30	0,030-0,045	50	0,1
													●			6	35-50	0,003-0,015	15	0,1
													●			8	35-50	0,005-0,020	20	0,1
													●			10	35-50	0,010-0,025	25	0,1
													●			12	35-50	0,020-0,035	30	0,1
													●			16	35-50	0,025-0,040	40	0,1
													●			20	35-50	0,030-0,045	50	0,1

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

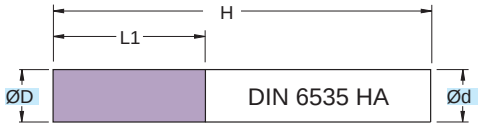
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM6432

ØD = 6 - 20



RIVESTIM. COATED
GRAY

90°

64 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SM6432.040.N00	4	6	11	57	6
SM6432.050.N00	5	6	13	57	6
SM6432.060.N00	6	6	13	57	6
SM6432.080.N00	8	8	19	63	6
SM6432.100.N00	10	10	22	72	6
SM6432.120.N00	12	12	26	83	6
SM6432.140.N00	14	14	26	83	6
SM6432.160.N00	16	16	32	92	8
SM6432.180.N00	18	18	32	92	8
SM6432.200.N00	20	20	38	104	8

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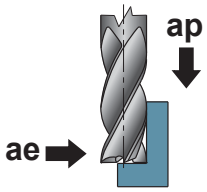
MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
		●														6	75-105	0,020-0,035	9	0,1
		●														8	75-105	0,030-0,045	12	0,1
		●														10	75-105	0,035-0,050	15	0,1
		●														12	75-105	0,050-0,065	18	0,1
		●														14	75-105	0,050-0,065	21	0,1
		●														16	75-105	0,060-0,075	24	0,1
		●														18	75-105	0,070-0,085	27	0,1
		●														20	75-105	0,090-0,105	30	0,1
														●		6	25-55	0,005-0,020	9	0,1
														●		8	25-55	0,010-0,025	12	0,1
														●		10	25-55	0,020-0,035	15	0,1
														●		12	25-55	0,025-0,040	18	0,1
														●		14	25-55	0,030-0,045	21	0,1
														●		16	25-55	0,035-0,050	24	0,1
														●		18	25-55	0,040-0,055	27	0,1
														●		20	25-55	0,045-0,060	30	0,1

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

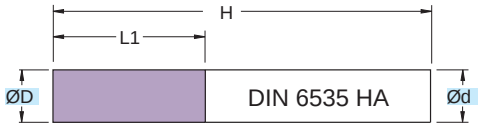
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM6532

ØD = 6 - 20



RIVESTIM. COATED
GRAY

90°

64 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

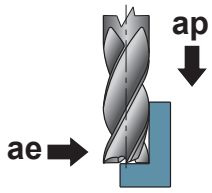
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SM6532.060.N00	6	6	18	62	6
SM6532.080.N00	8	8	24	68	6
SM6532.100.N00	10	10	30	80	6
SM6532.120.N00	12	12	36	93	6
SM6532.140.N00	14	14	42	99	6
SM6532.160.N00	16	16	48	108	8
SM6532.180.N00	18	18	54	114	8
SM6532.200.N00	20	20	60	126	8

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															6	45-75	0,015-0,030	15	0,1
	●															8	45-75	0,025-0,040	20	0,1
	●															10	45-75	0,030-0,045	25	0,1
	●															12	45-75	0,035-0,050	30	0,1
	●															14	45-75	0,045-0,060	35	0,1
	●															16	45-75	0,050-0,065	40	0,1
	●															18	45-75	0,060-0,075	45	0,1
	●															20	45-75	0,070-0,085	50	0,1
														●		6	20-40	0,010-0,025	15	0,1
														●		8	20-40	0,015-0,030	20	0,1
														●		10	20-40	0,025-0,040	25	0,1
														●		12	20-40	0,030-0,045	30	0,1
														●		14	20-40	0,040-0,055	35	0,1
														●		16	20-40	0,045-0,060	40	0,1
														●		18	20-40	0,050-0,065	45	0,1
														●		20	20-40	0,060-0,075	50	0,1

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

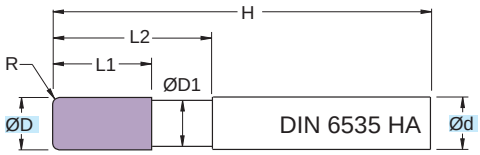
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM7215..TI

ØD = 6 - 16 NEW



RIVESTIM. COATED
ORANGE

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

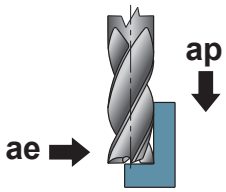
Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM7215.060.R050.TI	6	6	5,8	13	20	58	0,50	5
SM7215.060.R100.TI	6	6	5,8	13	20	58	1,00	5
SM7215.080.R050.TI	8	8	7,7	19	28	64	0,50	5
SM7215.080.R100.TI	8	8	7,7	19	28	64	1,00	5
SM7215.080.R150.TI	8	8	7,7	19	28	64	1,50	5
SM7215.080.R200.TI	8	8	7,7	19	28	64	2,00	5
SM7215.100.R050.TI	10	10	9,5	22	33	73	0,50	7
SM7215.100.R100.TI	10	10	9,5	22	33	73	1,00	7
SM7215.100.R150.TI	10	10	9,5	22	33	73	1,50	7
SM7215.100.R200.TI	10	10	9,5	22	33	73	2,00	7
SM7215.100.R300.TI	10	10	9,5	22	33	73	3,00	7
SM7215.120.R050.TI	12	12	11,5	26	38	84	0,50	9
SM7215.120.R100.TI	12	12	11,5	26	38	84	1,00	9
SM7215.120.R150.TI	12	12	11,5	26	38	84	1,50	9
SM7215.120.R200.TI	12	12	11,5	26	38	84	2,00	9
SM7215.120.R300.TI	12	12	11,5	26	38	84	3,00	9
SM7215.160.R100.TI	16	16	15,5	32	45	93	1,00	9
SM7215.160.R150.TI	16	16	15,5	32	45	93	1,50	9
SM7215.160.R200.TI	16	16	15,5	32	45	93	2,00	9
SM7215.160.R300.TI	16	16	15,5	32	45	93	3,00	9
SM7215.160.R400.TI	16	16	15,5	32	45	93	4,00	9

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															6÷8	110-140	0,025-0,040	1xD	0,25xD
	○															8÷10	110-140	0,030-0,045	1xD	0,25xD
	○															10÷12	110-140	0,040-0,055	1xD	0,25xD
	○															12÷16	110-140	0,055-0,070	1xD	0,25xD
		○														6÷8	105-135	0,025-0,040	1xD	0,15xD
		○														8÷10	105-135	0,030-0,045	1xD	0,15xD
		○														10÷12	105-135	0,040-0,055	1xD	0,15xD
		○														12÷16	105-135	0,055-0,070	1xD	0,15xD
			○													6÷8	100-130	0,025-0,040	1xD	0,15xD
			○													8÷10	100-130	0,030-0,045	1xD	0,15xD
			○													10÷12	100-130	0,040-0,055	1xD	0,15xD
			○													12÷16	100-130	0,055-0,070	1xD	0,15xD
					●											6÷8	100-110	0,025-0,045	1xD	0,15xD
					●											8÷10	100-110	0,030-0,055	1xD	0,15xD
					●											10÷12	100-110	0,040-0,075	1xD	0,15xD
					●											12÷16	100-110	0,050-0,085	1xD	0,15xD
												●				6÷8	30-50	0,015-0,025	1xD	0,15xD
												●				8÷10	30-50	0,020-0,035	1xD	0,15xD
												●				10÷12	30-50	0,025-0,040	1xD	0,15xD
												●				12÷16	30-50	0,030-0,050	1xD	0,15xD
													●			6÷8	55-80	0,030-0,045	1xD	0,15xD
													●			8÷10	55-80	0,035-0,060	1xD	0,15xD
													●			10÷12	55-80	0,045-0,070	1xD	0,15xD
													●			12÷16	55-80	0,050-0,090	1xD	0,15xD
														○		6÷8	20-40	0,003-0,015	0,25xD	0,15xD
														○		8÷10	20-40	0,002-0,017	0,25xD	0,15xD
														○		10÷12	20-40	0,005-0,020	0,25xD	0,15xD
														○		12÷16	20-40	0,010-0,025	0,25xD	0,15xD

ap

ae

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

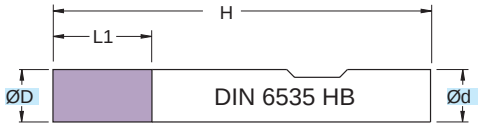
PASSO VARIABILE

VARIABLE PITCH / UNGLEICHE TEILUNG / PAS VARIABLE /
PASO VARIABLE

SAU
QUALITY TOOLS ENGINEERING

SMW3400

ØD = 3 - 20



RIVESTIM. COATED
GRAY

45°

52 HRC

HSC

Fresa in M.D.I. Micrograno
Gambo cilindrico HB

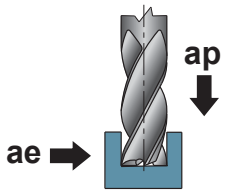
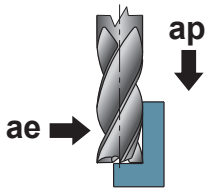
Micrograin HM mills
Cilindrical Shank HB

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW3400.030.N00	3	6	8	57	0,05	3
SMW3400.040.N00	4	6	11	57	0,10	3
SMW3400.050.N00	5	6	13	57	0,10	3
SMW3400.060.N00	6	6	13	57	0,10	3
SMW3400.070.N00	7	8	16	63	0,15	3
SMW3400.080.N00	8	8	19	63	0,15	3
SMW3400.090.N00	9	10	19	72	0,15	3
SMW3400.100.N00	10	10	22	72	0,15	3
SMW3400.120.N00	12	12	26	83	0,20	3
SMW3400.160.N00	16	16	32	92	0,20	3
SMW3400.200.N00	20	20	38	104	0,30	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													3	160-190	0,015-0,035	0,5xD	1xD
			●													4	160-190	0,025-0,045	0,5xD	1xD
			●													5	160-190	0,030-0,050	0,5xD	1xD
			●													6	160-190	0,035-0,055	0,5xD	1xD
			●													7	160-190	0,040-0,060	0,5xD	1xD
			●													8	160-190	0,045-0,065	0,5xD	1xD
			●													9	160-190	0,050-0,070	0,5xD	1xD
			●													10	160-190	0,055-0,075	0,5xD	1xD
			●													12	160-190	0,065-0,085	0,5xD	1xD
			●													16	160-190	0,085-0,110	0,5xD	1xD
			●													20	160-190	0,085-0,110	0,5xD	1xD
					○											3	50-80	0,015-0,025	0,5xD	1xD
					○											4	50-80	0,020-0,030	0,5xD	1xD
					○											5	50-80	0,025-0,035	0,5xD	1xD
					○											6	50-80	0,025-0,040	0,5xD	1xD
					○											7	50-80	0,025-0,040	0,5xD	1xD
					○											8	50-80	0,025-0,045	0,5xD	1xD
					○											9	50-80	0,025-0,045	0,5xD	1xD
					○											10	50-80	0,025-0,045	0,5xD	1xD
					○											12	50-80	0,035-0,055	0,5xD	1xD
					○											16	50-80	0,055-0,075	0,5xD	1xD
					○											20	50-80	0,055-0,075	0,5xD	1xD
						●										3	180-210	0,110-0,035	0,5xD	1xD
						●										4	180-210	0,030-0,050	0,5xD	1xD
						●										5	180-210	0,035-0,055	0,5xD	1xD
						●										6	180-210	0,040-0,060	0,5xD	1xD
						●										7	180-210	0,045-0,065	0,5xD	1xD
						●										8	180-210	0,055-0,075	0,5xD	1xD
						●										9	180-210	0,060-0,080	0,5xD	1xD
						●										10	180-210	0,065-0,085	0,5xD	1xD
						●										12	180-210	0,085-0,110	0,5xD	1xD
						●										16	180-210	0,110-0,130	0,5xD	1xD
						●										20	180-210	0,110-0,130	0,5xD	1xD
							●									3	160-190	0,015-0,035	0,5xD	1xD
							●									4	160-190	0,030-0,050	0,5xD	1xD
							●									5	160-190	0,035-0,055	0,5xD	1xD
							●									6	160-190	0,040-0,060	0,5xD	1xD
							●									7	160-190	0,045-0,065	0,5xD	1xD
							●									8	160-190	0,055-0,075	0,5xD	1xD
							●									9	160-190	0,060-0,080	0,5xD	1xD
							●									10	160-190	0,065-0,085	0,5xD	1xD
							●									12	160-190	0,085-0,110	0,5xD	1xD
							●									16	160-190	0,110-0,130	0,5xD	1xD
							●									20	160-190	0,110-0,130	0,5xD	1xD
														○		3	20-40	0,005-0,009	1xD	0,25xD
														○		4	20-40	0,005-0,011	1xD	0,25xD
														○		5	20-40	0,005-0,012	1xD	0,25xD
														○		6	20-40	0,005-0,013	1xD	0,25xD
														○		7	20-40	0,005-0,014	1xD	0,25xD
														○		8	20-40	0,006-0,015	1xD	0,25xD
														○		9	20-40	0,080-0,017	1xD	0,25xD
														○		10	20-40	0,010-0,020	1xD	0,25xD
														○		12	20-40	0,012-0,025	1xD	0,25xD
														○		16	20-40	0,015-0,035	1xD	0,25xD
														○		20	20-40	0,020-0,040	1xD	0,25xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

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fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

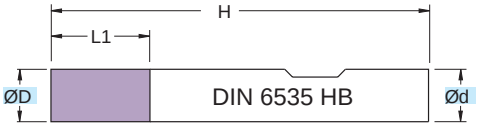
SMW3400..TI

ØD = 3 - 20

RIVESTIM. COATED
ORANGE

45°

52 HRC



Fresa in M.D.I. Micrograno
Gambo cilindrico HB

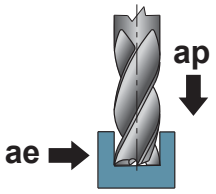
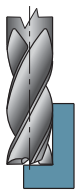
Micrograin HM mills
Cilindrical Shank HB

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW3400.030.N00.TI	3	6	8	57	0,05	3
SMW3400.040.N00.TI	4	6	11	57	0,10	3
SMW3400.050.N00.TI	5	6	13	57	0,10	3
SMW3400.060.N00.TI	6	6	13	57	0,10	3
SMW3400.070.N00.TI	7	8	16	63	0,15	3
SMW3400.080.N00.TI	8	8	19	63	0,15	3
SMW3400.090.N00.TI	9	10	19	72	0,15	3
SMW3400.100.N00.TI	10	10	22	72	0,15	3
SMW3400.120.N00.TI	12	12	26	83	0,20	3
SMW3400.160.N00.TI	16	16	32	92	0,20	3
SMW3400.200.N00.TI	20	20	38	104	0,30	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			○													3	100-130	0,015-0,035	0,5xD	1xD
			○													4	100-130	0,025-0,045	0,5xD	1xD
			○													5	100-130	0,030-0,050	0,5xD	1xD
			○													6	100-130	0,035-0,055	0,5xD	1xD
			○													7	100-130	0,040-0,060	0,5xD	1xD
			○													8	100-130	0,045-0,065	0,5xD	1xD
			○													9	100-130	0,050-0,070	0,5xD	1xD
			○													10	100-130	0,055-0,075	0,5xD	1xD
			○													12	100-130	0,065-0,085	0,5xD	1xD
			○													16	100-130	0,085-0,110	0,5xD	1xD
			○													20	100-130	0,085-0,110	0,5xD	1xD
					●											3	80-110	0,015-0,025	0,5xD	1xD
					●											4	80-110	0,020-0,030	0,5xD	1xD
					●											5	80-110	0,025-0,035	0,5xD	1xD
					●											6	80-110	0,025-0,040	0,5xD	1xD
					●											7	80-110	0,025-0,040	0,5xD	1xD
					●											8	80-110	0,025-0,045	0,5xD	1xD
					●											9	80-110	0,025-0,045	0,5xD	1xD
					●											10	80-110	0,025-0,045	0,5xD	1xD
					●											12	80-110	0,035-0,055	0,5xD	1xD
					●											16	80-110	0,055-0,075	0,5xD	1xD
					●											20	80-110	0,055-0,075	0,5xD	1xD
												●				3	30-50	0,005-0,015	0,5xD	1xD
												●				4	30-50	0,005-0,015	0,5xD	1xD
												●				5	30-50	0,005-0,015	0,5xD	1xD
												●				6	30-50	0,008-0,025	0,5xD	1xD
												●				7	30-50	0,008-0,025	0,5xD	1xD
												●				8	30-50	0,010-0,030	0,5xD	1xD
												●				9	30-50	0,010-0,030	0,5xD	1xD
												●				10	30-50	0,015-0,035	0,5xD	1xD
												●				12	30-50	0,020-0,040	0,5xD	1xD
												●				16	30-50	0,030-0,050	0,5xD	1xD
												●				20	30-50	0,035-0,055	0,5xD	1xD
													●			3	30-75	0,005-0,015	0,5xD	1xD
													●			4	30-75	0,005-0,015	0,5xD	1xD
													●			5	30-75	0,005-0,020	0,5xD	1xD
													●			6	30-75	0,008-0,025	0,5xD	1xD
													●			7	30-75	0,008-0,025	0,5xD	1xD
													●			8	30-75	0,010-0,030	0,5xD	1xD
													●			9	30-75	0,010-0,030	0,5xD	1xD
													●			10	30-75	0,015-0,035	0,5xD	1xD
													●			12	30-75	0,020-0,040	0,5xD	1xD
													●			16	30-75	0,030-0,050	0,5xD	1xD
													●			20	30-75	0,035-0,055	0,5xD	1xD
														○		3	20-35	0,005-0,009	1xD	0,25xD
														○		4	20-35	0,005-0,011	1xD	0,25xD
														○		5	20-35	0,005-0,012	1xD	0,25xD
														○		6	20-35	0,005-0,013	1xD	0,25xD
														○		7	20-35	0,005-0,014	1xD	0,25xD
														○		8	20-35	0,006-0,015	1xD	0,25xD
														○		9	20-35	0,080-0,017	1xD	0,25xD
														○		10	20-35	0,010-0,020	1xD	0,25xD
														○		12	20-35	0,012-0,025	1xD	0,25xD
														○		16	20-35	0,015-0,035	1xD	0,25xD
														○		20	20-35	0,020-0,040	1xD	0,25xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

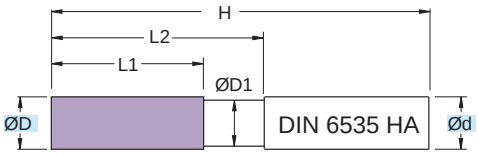
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3415

ØD = 3 - 20



RIVESTIM. COATED
GRAY

45°

52 HRC

HSC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

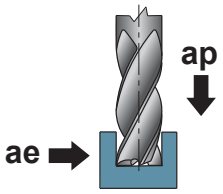
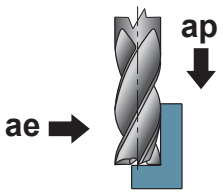
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	45°	z
SM3415.030.G00	3	6	2,8	8	14	57	0,05	3
SM3415.040.G00	4	6	3,8	11	18	57	0,10	3
SM3415.050.G00	5	6	4,8	13	20	57	0,10	3
SM3415.060.G00	6	6	5,8	13	20	57	0,10	3
SM3415.070.G00	7	8	6,8	16	24	63	0,15	3
SM3415.080.G00	8	8	7,7	19	28	63	0,15	3
SM3415.090.G00	9	10	8,7	19	28	72	0,15	3
SM3415.100.G00	10	10	9,5	22	33	72	0,15	3
SM3415.120.G00	12	12	11,5	26	40	83	0,20	3
SM3415.160.G00	16	16	15,5	32	45	92	0,20	3
SM3415.200.G00	20	20	19,5	38	50	104	0,30	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													3	160-190	0,015-0,035	0,5xD	1xD
			●													4	160-190	0,025-0,045	0,5xD	1xD
			●													5	160-190	0,030-0,050	0,5xD	1xD
			●													6	160-190	0,035-0,055	0,5xD	1xD
			●													7	160-190	0,040-0,060	0,5xD	1xD
			●													8	160-190	0,045-0,065	0,5xD	1xD
			●													9	160-190	0,050-0,070	0,5xD	1xD
			●													10	160-190	0,055-0,075	0,5xD	1xD
			●													12	160-190	0,065-0,085	0,5xD	1xD
			●													16	160-190	0,085-0,110	0,5xD	1xD
			●													20	160-190	0,085-0,110	0,5xD	1xD
					○											3	50-80	0,015-0,025	0,5xD	1xD
					○											4	50-80	0,020-0,030	0,5xD	1xD
					○											5	50-80	0,025-0,035	0,5xD	1xD
					○											6	50-80	0,025-0,040	0,5xD	1xD
					○											7	50-80	0,025-0,040	0,5xD	1xD
					○											8	50-80	0,025-0,045	0,5xD	1xD
					○											9	50-80	0,025-0,045	0,5xD	1xD
					○											10	50-80	0,025-0,045	0,5xD	1xD
					○											12	50-80	0,035-0,055	0,5xD	1xD
					○											16	50-80	0,055-0,075	0,5xD	1xD
					○											20	50-80	0,055-0,075	0,5xD	1xD
						●										3	180-210	0,110-0,035	0,5xD	1xD
						●										4	180-210	0,030-0,050	0,5xD	1xD
						●										5	180-210	0,035-0,055	0,5xD	1xD
						●										6	180-210	0,040-0,060	0,5xD	1xD
						●										7	180-210	0,045-0,065	0,5xD	1xD
						●										8	180-210	0,055-0,075	0,5xD	1xD
						●										9	180-210	0,060-0,080	0,5xD	1xD
						●										10	180-210	0,065-0,085	0,5xD	1xD
						●										12	180-210	0,085-0,110	0,5xD	1xD
						●										16	180-210	0,110-0,130	0,5xD	1xD
						●										20	180-210	0,110-0,130	0,5xD	1xD
							●									3	160-190	0,015-0,035	0,5xD	1xD
							●									4	160-190	0,030-0,050	0,5xD	1xD
							●									5	160-190	0,035-0,055	0,5xD	1xD
							●									6	160-190	0,040-0,060	0,5xD	1xD
							●									7	160-190	0,045-0,065	0,5xD	1xD
							●									8	160-190	0,055-0,075	0,5xD	1xD
							●									9	160-190	0,060-0,080	0,5xD	1xD
							●									10	160-190	0,065-0,085	0,5xD	1xD
							●									12	160-190	0,085-0,110	0,5xD	1xD
							●									16	160-190	0,110-0,130	0,5xD	1xD
							●									20	160-190	0,110-0,130	0,5xD	1xD
														○		3	20-40	0,005-0,009	1xD	0,25xD
														○		4	20-40	0,005-0,011	1xD	0,25xD
														○		5	20-40	0,005-0,012	1xD	0,25xD
														○		6	20-40	0,005-0,013	1xD	0,25xD
														○		7	20-40	0,005-0,014	1xD	0,25xD
														○		8	20-40	0,006-0,015	1xD	0,25xD
														○		9	20-40	0,080-0,017	1xD	0,25xD
														○		10	20-40	0,010-0,020	1xD	0,25xD
														○		12	20-40	0,012-0,025	1xD	0,25xD
														○		16	20-40	0,015-0,035	1xD	0,25xD
														○		20	20-40	0,020-0,040	1xD	0,25xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
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Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

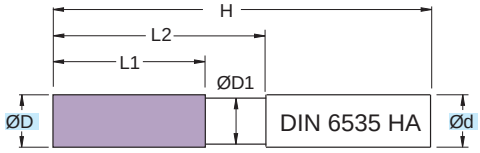
SM3415..TI

ØD = 3 - 20

RIVESTIM. COATED
ORANGE

45°

52 HRC



Fresa in M.D.I. Micrograno
Gambo cilindrico HA

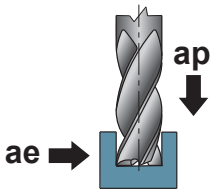
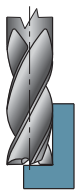
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	45°	z
SM3415.030.G00.TI	3	6	2,8	8	14	57	0,05	3
SM3415.040.G00.TI	4	6	3,8	11	18	57	0,10	3
SM3415.050.G00.TI	5	6	4,8	13	20	57	0,10	3
SM3415.060.G00.TI	6	6	5,8	13	20	57	0,10	3
SM3415.070.G00.TI	7	8	6,8	16	24	63	0,15	3
SM3415.080.G00.TI	8	8	7,7	19	28	63	0,15	3
SM3415.090.G00.TI	9	10	8,7	19	28	72	0,15	3
SM3415.100.G00.TI	10	10	9,5	22	33	72	0,15	3
SM3415.120.G00.TI	12	12	11,5	26	40	83	0,20	3
SM3415.160.G00.TI	16	16	15,5	32	45	92	0,20	3
SM3415.200.G00.TI	20	20	19,5	38	50	104	0,30	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			○													3	100-130	0,015-0,035	0,5xD	1xD
			○													4	100-130	0,025-0,045	0,5xD	1xD
			○													5	100-130	0,030-0,050	0,5xD	1xD
			○													6	100-130	0,035-0,055	0,5xD	1xD
			○													7	100-130	0,040-0,060	0,5xD	1xD
			○													8	100-130	0,045-0,065	0,5xD	1xD
			○													9	100-130	0,050-0,070	0,5xD	1xD
			○													10	100-130	0,055-0,075	0,5xD	1xD
			○													12	100-130	0,065-0,085	0,5xD	1xD
			○													16	100-130	0,085-0,110	0,5xD	1xD
			○													20	100-130	0,085-0,110	0,5xD	1xD
					●											3	80-110	0,015-0,025	0,5xD	1xD
					●											4	80-110	0,020-0,030	0,5xD	1xD
					●											5	80-110	0,025-0,035	0,5xD	1xD
					●											6	80-110	0,025-0,040	0,5xD	1xD
					●											7	80-110	0,025-0,040	0,5xD	1xD
					●											8	80-110	0,025-0,045	0,5xD	1xD
					●											9	80-110	0,025-0,045	0,5xD	1xD
					●											10	80-110	0,025-0,045	0,5xD	1xD
					●											12	80-110	0,035-0,055	0,5xD	1xD
					●											16	80-110	0,055-0,075	0,5xD	1xD
					●											20	80-110	0,055-0,075	0,5xD	1xD
												●				3	30-50	0,005-0,015	0,5xD	1xD
												●				4	30-50	0,005-0,015	0,5xD	1xD
												●				5	30-50	0,005-0,015	0,5xD	1xD
												●				6	30-50	0,008-0,025	0,5xD	1xD
												●				7	30-50	0,008-0,025	0,5xD	1xD
												●				8	30-50	0,010-0,030	0,5xD	1xD
												●				9	30-50	0,010-0,030	0,5xD	1xD
												●				10	30-50	0,015-0,035	0,5xD	1xD
												●				12	30-50	0,020-0,040	0,5xD	1xD
												●				16	30-50	0,030-0,050	0,5xD	1xD
												●				20	30-50	0,035-0,055	0,5xD	1xD
													●			3	30-75	0,005-0,015	0,5xD	1xD
													●			4	30-75	0,005-0,015	0,5xD	1xD
													●			5	30-75	0,005-0,020	0,5xD	1xD
													●			6	30-75	0,008-0,025	0,5xD	1xD
													●			7	30-75	0,008-0,025	0,5xD	1xD
													●			8	30-75	0,010-0,030	0,5xD	1xD
													●			9	30-75	0,010-0,030	0,5xD	1xD
													●			10	30-75	0,015-0,035	0,5xD	1xD
													●			12	30-75	0,020-0,040	0,5xD	1xD
													●			16	30-75	0,030-0,050	0,5xD	1xD
													●			20	30-75	0,035-0,055	0,5xD	1xD
														○		3	20-35	0,005-0,009	1xD	0,25xD
														○		4	20-35	0,005-0,011	1xD	0,25xD
														○		5	20-35	0,005-0,012	1xD	0,25xD
														○		6	20-35	0,005-0,013	1xD	0,25xD
														○		7	20-35	0,005-0,014	1xD	0,25xD
														○		8	20-35	0,006-0,015	1xD	0,25xD
														○		9	20-35	0,080-0,017	1xD	0,25xD
														○		10	20-35	0,010-0,020	1xD	0,25xD
														○		12	20-35	0,012-0,025	1xD	0,25xD
														○		16	20-35	0,015-0,035	1xD	0,25xD
														○		20	20-35	0,020-0,040	1xD	0,25xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
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Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

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fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

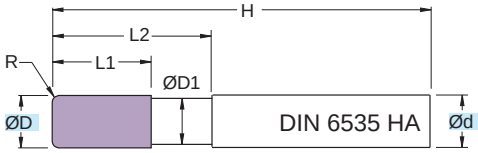
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3515

ØD = 4 - 10



RIVESTIM. COATED
GRAY

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

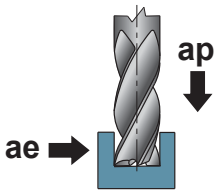
(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3515.040.R025	4	4	3,8	11	18	57	0,25	3
SM3515.040.R050	4	4	3,8	11	18	57	0,50	3
SM3515.040.R075	4	4	3,8	11	18	57	0,75	3
SM3515.040.R100	4	4	3,8	11	18	57	1,00	3
SM3515.040.R125	4	4	3,8	11	18	57	1,25	3
SM3515.040.R150	4	4	3,8	11	18	57	1,50	3
SM3515.050.R025	5	5	4,8	13	20	57	0,25	3
SM3515.050.R050	5	5	4,8	13	20	57	0,50	3
SM3515.050.R075	5	5	4,8	13	20	57	0,75	3
SM3515.050.R100	5	5	4,8	13	20	57	1,00	3
SM3515.050.R125	5	5	4,8	13	20	57	1,25	3
SM3515.050.R150	5	5	4,8	13	20	57	1,50	3
SM3515.050.R175	5	5	4,8	13	20	57	1,75	3
SM3515.050.R200	5	5	4,8	13	20	57	2,00	3
SM3515.060.R025	6	6	5,8	13	20	57	0,25	3
SM3515.060.R050	6	6	5,8	13	20	57	0,50	3
SM3515.060.R075	6	6	5,8	13	20	57	0,75	3
SM3515.060.R100	6	6	5,8	13	20	57	1,00	3
SM3515.060.R125	6	6	5,8	13	20	57	1,25	3
SM3515.060.R150	6	6	5,8	13	20	57	1,50	3
SM3515.060.R175	6	6	5,8	13	20	57	1,75	3
SM3515.060.R200	6	6	5,8	13	20	57	2,00	3
SM3515.060.R250	6	6	5,8	13	20	57	2,50	3
SM3515.080.R025	8	8	7,7	19	28	63	0,25	3
SM3515.080.R050	8	8	7,7	19	28	63	0,50	3
SM3515.080.R075	8	8	7,7	19	28	63	0,75	3
SM3515.080.R100	8	8	7,7	19	28	63	1,00	3
SM3515.080.R125	8	8	7,7	19	28	63	1,25	3
SM3515.080.R150	8	8	7,7	19	28	63	1,50	3
SM3515.080.R175	8	8	7,7	19	28	63	1,75	3
SM3515.080.R200	8	8	7,7	19	28	63	2,00	3
SM3515.080.R250	8	8	7,7	19	28	63	2,50	3
SM3515.100.R025	10	10	9,5	22	33	72	0,25	3
SM3515.100.R050	10	10	9,5	22	33	72	0,50	3
SM3515.100.R075	10	10	9,5	22	33	72	0,75	3
SM3515.100.R100	10	10	9,5	22	33	72	1,00	3
SM3515.100.R125	10	10	9,5	22	33	72	1,25	3
SM3515.100.R150	10	10	9,5	22	33	72	1,50	3
SM3515.100.R175	10	10	9,5	22	33	72	1,75	3

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3515.100.R200	10	10	9,5	22	33	72	2,00	3
SM3515.100.R250	10	10	9,5	22	33	72	2,50	3
SM3515.100.R300	10	10	9,5	22	33	72	3,00	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															4	140-170	0,005-0,020	1xD	1xD
	●															5	140-170	0,010-0,025	1xD	1xD
	●															6	140-170	0,015-0,030	1xD	1xD
	●															8	140-170	0,025-0,040	1xD	1xD
	●															10	140-170	0,025-0,040	1xD	1xD
		●														4	100-130	0,005-0,020	1xD	1xD
		●														5	100-131	0,010-0,025	1xD	1xD
		●														6	100-132	0,015-0,030	1xD	1xD
		●														8	100-133	0,025-0,040	1xD	1xD
		●														10	100-134	0,025-0,040	1xD	1xD
			●													4	80-110	0,005-0,020	1xD	1xD
			●													5	80-110	0,010-0,025	1xD	1xD
			●													6	80-110	0,015-0,030	1xD	1xD
			●													8	80-110	0,025-0,040	1xD	1xD
			●													10	80-110	0,025-0,040	1xD	1xD
					○											4	40-70	0,005-0,020	1xD	1xD
					○											5	40-70	0,005-0,020	1xD	1xD
					○											6	40-70	0,010-0,025	1xD	1xD
					○											8	40-70	0,010-0,025	1xD	1xD
					○											10	40-70	0,010-0,025	1xD	1xD
						●										4	140-170	0,005-0,020	1xD	1xD
						●										5	140-170	0,010-0,025	1xD	1xD
						●										6	140-170	0,015-0,030	1xD	1xD
						●										8	140-170	0,025-0,040	1xD	1xD
						●										10	140-170	0,025-0,040	1xD	1xD
							●									4	140-170	0,005-0,020	1xD	1xD
							●									5	140-170	0,010-0,025	1xD	1xD
							●									6	140-170	0,015-0,030	1xD	1xD
							●									8	140-170	0,025-0,040	1xD	1xD
							●									10	140-170	0,025-0,040	1xD	1xD
												○				4	20-30	0,005-0,020	1xD	1xD
												○				5	20-30	0,005-0,020	1xD	1xD
												○				6	20-30	0,010-0,025	1xD	1xD
												○				8	20-30	0,010-0,025	1xD	1xD
												○				10	20-30	0,010-0,025	1xD	1xD
													○			4	25-40	0,005-0,020	1xD	1xD
													○			5	25-40	0,005-0,020	1xD	1xD
													○			6	25-40	0,010-0,025	1xD	1xD
													○			8	25-40	0,010-0,025	1xD	1xD
													○			10	25-40	0,010-0,025	1xD	1xD
														○		4	20-40	0,005-0,020	0,25xD	1xD
														○		5	20-40	0,005-0,020	0,25xD	1xD
														○		6	20-40	0,010-0,025	0,25xD	1xD
														○		8	20-40	0,010-0,025	0,25xD	1xD
														○		10	20-40	0,010-0,025	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

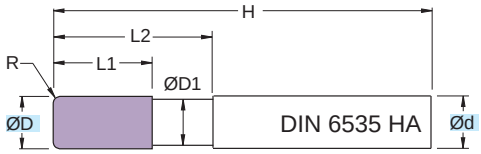
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3515..TI

ØD = 4 - 10



RIVESTIM. COATED
ORANGE

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

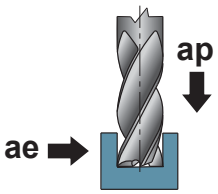
(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3515.040.R025.TI	4	4	3,8	11	18	57	0,25	3
SM3515.040.R050.TI	4	4	3,8	11	18	57	0,50	3
SM3515.040.R075.TI	4	4	3,8	11	18	57	0,75	3
SM3515.040.R100.TI	4	4	3,8	11	18	57	1,00	3
SM3515.040.R125.TI	4	4	3,8	11	18	57	1,25	3
SM3515.040.R150.TI	4	4	3,8	11	18	57	1,50	3
SM3515.050.R025.TI	5	5	4,8	13	20	57	0,25	3
SM3515.050.R050.TI	5	5	4,8	13	20	57	0,50	3
SM3515.050.R075.TI	5	5	4,8	13	20	57	0,75	3
SM3515.050.R100.TI	5	5	4,8	13	20	57	1,00	3
SM3515.050.R125.TI	5	5	4,8	13	20	57	1,25	3
SM3515.050.R150.TI	5	5	4,8	13	20	57	1,50	3
SM3515.050.R175.TI	5	5	4,8	13	20	57	1,75	3
SM3515.050.R200.TI	5	5	4,8	13	20	57	2,00	3
SM3515.060.R025.TI	6	6	5,8	13	20	57	0,25	3
SM3515.060.R050.TI	6	6	5,8	13	20	57	0,50	3
SM3515.060.R075.TI	6	6	5,8	13	20	57	0,75	3
SM3515.060.R100.TI	6	6	5,8	13	20	57	1,00	3
SM3515.060.R125.TI	6	6	5,8	13	20	57	1,25	3
SM3515.060.R150.TI	6	6	5,8	13	20	57	1,50	3
SM3515.060.R175.TI	6	6	5,8	13	20	57	1,75	3
SM3515.060.R200.TI	6	6	5,8	13	20	57	2,00	3
SM3515.060.R250.TI	6	6	5,8	13	20	57	2,50	3
SM3515.080.R025.TI	8	8	7,7	19	28	63	0,25	3
SM3515.080.R050.TI	8	8	7,7	19	28	63	0,50	3
SM3515.080.R075.TI	8	8	7,7	19	28	63	0,75	3
SM3515.080.R100.TI	8	8	7,7	19	28	63	1,00	3
SM3515.080.R125.TI	8	8	7,7	19	28	63	1,25	3
SM3515.080.R150.TI	8	8	7,7	19	28	63	1,50	3
SM3515.080.R175.TI	8	8	7,7	19	28	63	1,75	3
SM3515.080.R200.TI	8	8	7,7	19	28	63	2,00	3
SM3515.080.R250.TI	8	8	7,7	19	28	63	2,50	3
SM3515.100.R025.TI	10	10	9,5	22	33	72	0,25	3
SM3515.100.R050.TI	10	10	9,5	22	33	72	0,50	3
SM3515.100.R075.TI	10	10	9,5	22	33	72	0,75	3
SM3515.100.R100.TI	10	10	9,5	22	33	72	1,00	3
SM3515.100.R125.TI	10	10	9,5	22	33	72	1,25	3
SM3515.100.R150.TI	10	10	9,5	22	33	72	1,50	3
SM3515.100.R175.TI	10	10	9,5	22	33	72	1,75	3

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3515.100.R200.TI	10	10	9,5	22	33	72	2,00	3
SM3515.100.R250.TI	10	10	9,5	22	33	72	2,50	3
SM3515.100.R300.TI	10	10	9,5	22	33	72	3,00	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															4	110-140	0,030-0,045	1xD	1xD
	○															5	110-140	0,035-0,050	1xD	1xD
	○															6	110-140	0,040-0,055	1xD	1xD
	○															8	110-140	0,050-0,065	1xD	1xD
	○															10	110-140	0,060-0,075	1xD	1xD
		○														4	100-135	0,030-0,045	1xD	1xD
		○														5	100-135	0,035-0,050	1xD	1xD
		○														6	100-135	0,040-0,055	1xD	1xD
		○														8	100-135	0,050-0,065	1xD	1xD
		○														10	100-135	0,060-0,075	1xD	1xD
			○													4	100-130	0,030-0,045	1xD	1xD
			○													5	100-130	0,035-0,050	1xD	1xD
			○													6	100-130	0,040-0,055	1xD	1xD
			○													8	100-130	0,050-0,065	1xD	1xD
			○													10	100-130	0,060-0,075	1xD	1xD
					●											4	80-110	0,015-0,030	1xD	1xD
					●											5	80-110	0,020-0,035	1xD	1xD
					●											6	80-110	0,025-0,040	1xD	1xD
					●											8	80-110	0,030-0,045	1xD	1xD
					●											10	80-110	0,030-0,045	1xD	1xD
												●				4	30-50	0,005-0,015	1xD	1xD
												●				5	30-50	0,005-0,015	1xD	1xD
												●				6	30-50	0,010-0,025	1xD	1xD
												●				8	30-50	0,015-0,030	1xD	1xD
												●				10	30-50	0,020-0,035	1xD	1xD
													●			4	30-75	0,005-0,015	1xD	1xD
													●			5	30-75	0,008-0,020	1xD	1xD
													●			6	30-75	0,010-0,025	1xD	1xD
													●			8	30-75	0,015-0,030	1xD	1xD
													●			10	30-75	0,020-0,035	1xD	1xD
														○		4	20-35	0,005-0,011	0,25xD	1xD
														○		5	20-35	0,005-0,012	0,25xD	1xD
														○		6	20-35	0,006-0,013	0,25xD	1xD
														○		8	20-35	0,006-0,015	0,25xD	1xD
														○		10	20-35	0,010-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

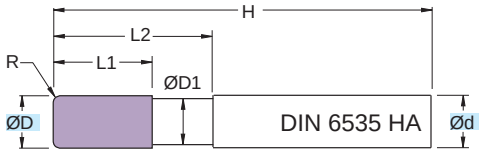
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3525

ØD = 4 - 10



RIVESTIM. COATED **GRAY**

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

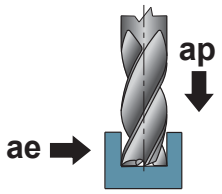
ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3525.040.R025	4	4	3,8	19	26	72	0,25	3
SM3525.040.R050	4	4	3,8	19	26	72	0,50	3
SM3525.040.R075	4	4	3,8	19	26	72	0,75	3
SM3525.040.R100	4	4	3,8	19	26	72	1,00	3
SM3525.040.R125	4	4	3,8	19	26	72	1,25	3
SM3525.040.R150	4	4	3,8	19	26	72	1,50	3
SM3525.050.R025	5	5	4,8	22	29	72	0,25	3
SM3525.050.R050	5	5	4,8	22	29	72	0,50	3
SM3525.050.R075	5	5	4,8	22	29	72	0,75	3
SM3525.050.R100	5	5	4,8	22	29	72	1,00	3
SM3525.050.R125	5	5	4,8	22	29	72	1,25	3
SM3525.050.R150	5	5	4,8	22	29	72	1,50	3
SM3525.050.R175	5	5	4,8	22	29	72	1,75	3
SM3525.050.R200	5	5	4,8	22	29	72	2,00	3
SM3525.060.R025	6	6	5,8	22	29	72	0,25	3
SM3525.060.R050	6	6	5,8	22	29	72	0,50	3
SM3525.060.R075	6	6	5,8	22	29	72	0,75	3
SM3525.060.R100	6	6	5,8	22	29	72	1,00	3
SM3525.060.R125	6	6	5,8	22	29	72	1,25	3
SM3525.060.R150	6	6	5,8	22	29	72	1,50	3
SM3525.060.R175	6	6	5,8	22	29	72	1,75	3
SM3525.060.R200	6	6	5,8	22	29	72	2,00	3
SM3525.060.R250	6	6	5,8	22	29	72	2,50	3
SM3525.080.R025	8	8	7,7	26	35	83	0,25	3
SM3525.080.R050	8	8	7,7	26	35	83	0,50	3
SM3525.080.R075	8	8	7,7	26	35	83	0,75	3
SM3525.080.R100	8	8	7,7	26	35	83	1,00	3
SM3525.080.R125	8	8	7,7	26	35	83	1,25	3
SM3525.080.R150	8	8	7,7	26	35	83	1,50	3
SM3525.080.R175	8	8	7,7	26	35	83	1,75	3
SM3525.080.R200	8	8	7,7	26	35	83	2,00	3
SM3525.080.R250	8	8	7,7	26	35	83	2,50	3
SM3525.100.R025	10	10	9,5	32	43	100	0,25	3
SM3525.100.R050	10	10	9,5	32	43	100	0,50	3
SM3525.100.R075	10	10	9,5	32	43	100	0,75	3
SM3525.100.R100	10	10	9,5	32	43	100	1,00	3
SM3525.100.R125	10	10	9,5	32	43	100	1,25	3
SM3525.100.R150	10	10	9,5	32	43	100	1,50	3
SM3525.100.R175	10	10	9,5	32	43	100	1,75	3

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3525.100.R200	10	10	9,5	32	43	100	2,00	3
SM3525.100.R250	10	10	9,5	32	43	100	2,50	3
SM3525.100.R300	10	10	9,5	32	43	100	3,00	3

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															4	140-170	0,005-0,020	1xD	1xD
	●															5	140-170	0,010-0,025	1xD	1xD
	●															6	140-170	0,015-0,030	1xD	1xD
	●															8	140-170	0,025-0,040	1xD	1xD
	●															10	140-170	0,025-0,040	1xD	1xD
		●														4	100-130	0,005-0,020	1xD	1xD
		●														5	100-131	0,010-0,025	1xD	1xD
		●														6	100-132	0,015-0,030	1xD	1xD
		●														8	100-133	0,025-0,040	1xD	1xD
		●														10	100-134	0,025-0,040	1xD	1xD
			●													4	80-110	0,005-0,020	1xD	1xD
			●													5	80-110	0,010-0,025	1xD	1xD
			●													6	80-110	0,015-0,030	1xD	1xD
			●													8	80-110	0,025-0,040	1xD	1xD
			●													10	80-110	0,025-0,040	1xD	1xD
					○											4	40-70	0,005-0,020	1xD	1xD
					○											5	40-70	0,005-0,020	1xD	1xD
					○											6	40-70	0,010-0,025	1xD	1xD
					○											8	40-70	0,010-0,025	1xD	1xD
					○											10	40-70	0,010-0,025	1xD	1xD
						●										4	140-170	0,005-0,020	1xD	1xD
						●										5	140-170	0,010-0,025	1xD	1xD
						●										6	140-170	0,015-0,030	1xD	1xD
						●										8	140-170	0,025-0,040	1xD	1xD
						●										10	140-170	0,025-0,040	1xD	1xD
							●									4	140-170	0,005-0,020	1xD	1xD
							●									5	140-170	0,010-0,025	1xD	1xD
							●									6	140-170	0,015-0,030	1xD	1xD
							●									8	140-170	0,025-0,040	1xD	1xD
							●									10	140-170	0,025-0,040	1xD	1xD
												○				4	20-30	0,005-0,020	1xD	1xD
												○				5	20-30	0,005-0,020	1xD	1xD
												○				6	20-30	0,010-0,025	1xD	1xD
												○				8	20-30	0,010-0,025	1xD	1xD
												○				10	20-30	0,010-0,025	1xD	1xD
													○			4	25-40	0,005-0,020	1xD	1xD
													○			5	25-40	0,005-0,020	1xD	1xD
													○			6	25-40	0,010-0,025	1xD	1xD
													○			8	25-40	0,010-0,025	1xD	1xD
													○			10	25-40	0,010-0,025	1xD	1xD
														○		4	20-40	0,005-0,020	0,25xD	1xD
														○		5	20-40	0,005-0,020	0,25xD	1xD
														○		6	20-40	0,010-0,025	0,25xD	1xD
														○		8	20-40	0,010-0,025	0,25xD	1xD
														○		10	20-40	0,010-0,025	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

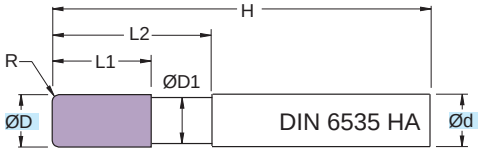
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM3525..TI

ØD = 4 - 10



RIVESTIM. COATED
ORANGE

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

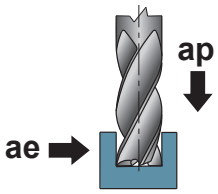
(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3525.040.R025.TI	4	4	3,8	19	26	72	0,25	3
SM3525.040.R050.TI	4	4	3,8	19	26	72	0,50	3
SM3525.040.R075.TI	4	4	3,8	19	26	72	0,75	3
SM3525.040.R100.TI	4	4	3,8	19	26	72	1,00	3
SM3525.040.R125.TI	4	4	3,8	19	26	72	1,25	3
SM3525.040.R150.TI	4	4	3,8	19	26	72	1,50	3
SM3525.050.R025.TI	5	5	4,8	22	29	72	0,25	3
SM3525.050.R050.TI	5	5	4,8	22	29	72	0,50	3
SM3525.050.R075.TI	5	5	4,8	22	29	72	0,75	3
SM3525.050.R100.TI	5	5	4,8	22	29	72	1,00	3
SM3525.050.R125.TI	5	5	4,8	22	29	72	1,25	3
SM3525.050.R150.TI	5	5	4,8	22	29	72	1,50	3
SM3525.050.R175.TI	5	5	4,8	22	29	72	1,75	3
SM3525.050.R200.TI	5	5	4,8	22	29	72	2,00	3
SM3525.060.R025.TI	6	6	5,8	22	29	72	0,25	3
SM3525.060.R050.TI	6	6	5,8	22	29	72	0,50	3
SM3525.060.R075.TI	6	6	5,8	22	29	72	0,75	3
SM3525.060.R100.TI	6	6	5,8	22	29	72	1,00	3
SM3525.060.R125.TI	6	6	5,8	22	29	72	1,25	3
SM3525.060.R150.TI	6	6	5,8	22	29	72	1,50	3
SM3525.060.R175.TI	6	6	5,8	22	29	72	1,75	3
SM3525.060.R200.TI	6	6	5,8	22	29	72	2,00	3
SM3525.060.R250.TI	6	6	5,8	22	29	72	2,50	3
SM3525.080.R025.TI	8	8	7,7	26	35	83	0,25	3
SM3525.080.R050.TI	8	8	7,7	26	35	83	0,50	3
SM3525.080.R075.TI	8	8	7,7	26	35	83	0,75	3
SM3525.080.R100.TI	8	8	7,7	26	35	83	1,00	3
SM3525.080.R125.TI	8	8	7,7	26	35	83	1,25	3
SM3525.080.R150.TI	8	8	7,7	26	35	83	1,50	3
SM3525.080.R175.TI	8	8	7,7	26	35	83	1,75	3
SM3525.080.R200.TI	8	8	7,7	26	35	83	2,00	3
SM3525.080.R250.TI	8	8	7,7	26	35	83	2,50	3
SM3525.100.R025.TI	10	10	9,5	32	43	100	0,25	3
SM3525.100.R050.TI	10	10	9,5	32	43	100	0,50	3
SM3525.100.R075.TI	10	10	9,5	32	43	100	0,75	3
SM3525.100.R100.TI	10	10	9,5	32	43	100	1,00	3
SM3525.100.R125.TI	10	10	9,5	32	43	100	1,25	3
SM3525.100.R150.TI	10	10	9,5	32	43	100	1,50	3
SM3525.100.R175.TI	10	10	9,5	32	43	100	1,75	3

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3525.100.R200.TI	10	10	9,5	32	43	100	2,00	3
SM3525.100.R250.TI	10	10	9,5	32	43	100	2,50	3
SM3525.100.R300.TI	10	10	9,5	32	43	100	3,00	3

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															4	110-140	0,030-0,045	1xD	1xD
	○															5	110-140	0,035-0,050	1xD	1xD
	○															6	110-140	0,040-0,055	1xD	1xD
	○															8	110-140	0,050-0,065	1xD	1xD
	○															10	110-140	0,060-0,075	1xD	1xD
		○														4	100-135	0,030-0,045	1xD	1xD
		○														5	100-135	0,035-0,050	1xD	1xD
		○														6	100-135	0,040-0,055	1xD	1xD
		○														8	100-135	0,050-0,065	1xD	1xD
		○														10	100-135	0,060-0,075	1xD	1xD
			○													4	100-130	0,030-0,045	1xD	1xD
			○													5	100-130	0,035-0,050	1xD	1xD
			○													6	100-130	0,040-0,055	1xD	1xD
			○													8	100-130	0,050-0,065	1xD	1xD
			○													10	100-130	0,060-0,075	1xD	1xD
					●											4	80-110	0,015-0,030	1xD	1xD
					●											5	80-110	0,020-0,035	1xD	1xD
					●											6	80-110	0,025-0,040	1xD	1xD
					●											8	80-110	0,030-0,045	1xD	1xD
					●											10	80-110	0,030-0,045	1xD	1xD
												●				4	30-50	0,005-0,015	1xD	1xD
												●				5	30-50	0,005-0,015	1xD	1xD
												●				6	30-50	0,010-0,025	1xD	1xD
												●				8	30-50	0,015-0,030	1xD	1xD
												●				10	30-50	0,020-0,035	1xD	1xD
													●			4	30-75	0,005-0,015	1xD	1xD
													●			5	30-75	0,008-0,020	1xD	1xD
													●			6	30-75	0,010-0,025	1xD	1xD
													●			8	30-75	0,015-0,030	1xD	1xD
													●			10	30-75	0,020-0,035	1xD	1xD
														○		4	20-35	0,005-0,011	0,25xD	1xD
														○		5	20-35	0,005-0,012	0,25xD	1xD
														○		6	20-35	0,006-0,013	0,25xD	1xD
														○		8	20-35	0,006-0,015	0,25xD	1xD
														○		10	20-35	0,010-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

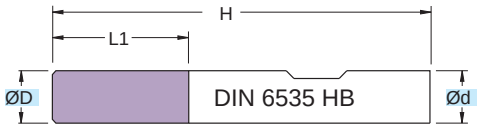
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4501

ØD = 5 - 20



RIVESTIM. COATED **BLACK**

45°

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

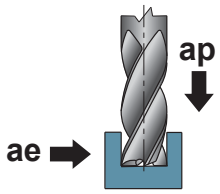
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW4501.050.N00	5	6	21	63	0,18	4
SMW4501.060.N00	6	6	22	63	0,20	4
SMW4501.080.N00	8	8	28	80	0,20	4
SMW4501.100.N00	10	10	33	100	0,30	4
SMW4501.120.N00	12	12	42	100	0,30	4
SMW4501.140.N00	14	14	48	100	0,30	4
SMW4501.160.N00	16	16	53	150	0,40	4
SMW4501.200.N00	20	20	68	150	0,50	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															5÷6	140-170	0,015-0,030	1xD	1xD
	●															6÷8	140-170	0,025-0,040	1xD	1xD
	●															8÷12	140-170	0,030-0,045	1xD	1xD
	●															12÷16	140-170	0,040-0,055	1xD	1xD
	●															16÷20	140-170	0,055-0,070	1xD	1xD
		●														5÷6	100-130	0,015-0,030	1xD	1xD
		●														6÷8	100-131	0,025-0,040	1xD	1xD
		●														8÷12	100-132	0,030-0,045	1xD	1xD
		●														12÷16	100-133	0,040-0,055	1xD	1xD
		●														16÷20	100-134	0,055-0,070	1xD	1xD
			●													5÷6	80-110	0,015-0,030	1xD	1xD
			●													6÷8	80-110	0,025-0,040	1xD	1xD
			●													8÷12	80-110	0,030-0,045	1xD	1xD
			●													12÷16	80-110	0,040-0,055	1xD	1xD
			●													16÷20	80-110	0,055-0,070	1xD	1xD
					○											5÷6	40-70	0,005-0,020	1xD	1xD
					○											6÷8	40-70	0,010-0,025	1xD	1xD
					○											8÷12	40-70	0,020-0,035	1xD	1xD
					○											12÷16	40-70	0,025-0,040	1xD	1xD
					○											16÷20	40-70	0,035-0,050	1xD	1xD
						●										5÷6	140-170	0,025-0,035	1xD	1xD
						●										6÷8	140-170	0,040-0,050	1xD	1xD
						●										8÷12	140-170	0,045-0,060	1xD	1xD
						●										12÷16	140-170	0,060-0,075	1xD	1xD
						●										16÷20	140-170	0,080-0,095	1xD	1xD
							●									5÷6	140-170	0,005-0,035	1xD	1xD
							●									6÷8	140-170	0,008-0,050	1xD	1xD
							●									8÷12	140-170	0,045-0,060	1xD	1xD
							●									12÷16	140-170	0,060-0,075	1xD	1xD
							●									16÷20	140-170	0,080-0,095	1xD	1xD
												○				5÷6	20-30	0,005-0,020	1xD	1xD
												○				6÷8	20-30	0,005-0,025	1xD	1xD
												○				8÷12	20-30	0,006-0,030	1xD	1xD
												○				12÷16	20-30	0,006-0,035	1xD	1xD
												○				16÷20	20-30	0,010-0,045	1xD	1xD
													○			5÷6	25-40	0,017-0,032	1xD	1xD
													○			6÷8	25-40	0,021-0,036	1xD	1xD
													○			8÷12	25-40	0,028-0,043	1xD	1xD
													○			12÷16	25-40	0,035-0,050	1xD	1xD
													○			16÷20	25-40	0,045-0,060	1xD	1xD
														○		5÷6	20-40	0,005-0,013	0,25xD	1xD
														○		6÷8	20-40	0,005-0,015	0,25xD	1xD
														○		8÷12	20-40	0,005-0,017	0,25xD	1xD
														○		12÷16	20-40	0,005-0,020	0,25xD	1xD
														○		16÷20	20-40	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

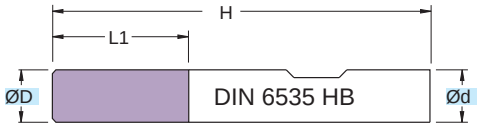
SMW4501..TI

ØD = 5 - 20

RIVESTIM. COATED
ORANGE

45°

52 HRC



Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

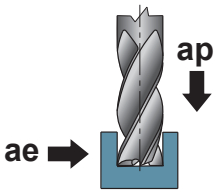
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW4501.050.N00.TI	5	6	21	63	0,18	4
SMW4501.060.N00.TI	6	6	22	63	0,20	4
SMW4501.080.N00.TI	8	8	28	80	0,20	4
SMW4501.100.N00.TI	10	10	33	100	0,30	4
SMW4501.120.N00.TI	12	12	42	100	0,30	4
SMW4501.140.N00.TI	14	14	48	100	0,30	4
SMW4501.160.N00.TI	16	16	53	150	0,40	4
SMW4501.200.N00.TI	20	20	68	150	0,50	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															5÷6	110-140	0,015-0,030	1xD	1xD
	○															6÷8	110-140	0,025-0,040	1xD	1xD
	○															8÷12	110-140	0,030-0,045	1xD	1xD
	○															12÷16	110-140	0,040-0,055	1xD	1xD
	○															16÷20	110-140	0,055-0,070	1xD	1xD
		○														5÷6	100-135	0,015-0,030	1xD	1xD
		○														6÷8	100-135	0,025-0,040	1xD	1xD
		○														8÷12	100-135	0,030-0,045	1xD	1xD
		○														12÷16	100-135	0,040-0,055	1xD	1xD
		○														16÷20	100-135	0,055-0,070	1xD	1xD
			○													5÷6	100-130	0,015-0,030	1xD	1xD
			○													6÷8	100-130	0,025-0,040	1xD	1xD
			○													8÷12	100-130	0,030-0,045	1xD	1xD
			○													12÷16	100-130	0,040-0,055	1xD	1xD
			○													16÷20	100-130	0,055-0,070	1xD	1xD
					●											5÷6	80-110	0,026-0,041	1xD	1xD
					●											6÷8	80-110	0,030-0,045	1xD	1xD
					●											8÷12	80-110	0,040-0,055	1xD	1xD
					●											12÷16	80-110	0,060-0,075	1xD	1xD
					●											16÷20	80-110	0,070-0,085	1xD	1xD
												●				5÷6	30-50	0,010-0,020	1xD	1xD
												●				6÷8	30-50	0,015-0,025	1xD	1xD
												●				8÷12	30-50	0,020-0,035	1xD	1xD
												●				12÷16	30-50	0,025-0,040	1xD	1xD
												●				16÷20	30-50	0,030-0,045	1xD	1xD
													●			5÷6	30-75	0,005-0,022	1xD	1xD
													●			6÷8	30-75	0,008-0,028	1xD	1xD
													●			8÷12	30-75	0,020-0,035	1xD	1xD
													●			12÷16	30-75	0,027-0,042	1xD	1xD
													●			16÷20	30-75	0,037-0,052	1xD	1xD
														○		5÷6	20-35	0,005-0,013	0,25xD	1xD
														○		6÷8	20-35	0,005-0,015	0,25xD	1xD
														○		8÷12	20-35	0,006-0,017	0,25xD	1xD
														○		12÷16	20-35	0,006-0,020	0,25xD	1xD
														○		16÷20	20-35	0,010-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

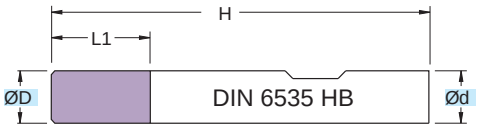
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4401

ØD = 3 - 25



RIVESTIM. COATED **BLACK**

45°

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

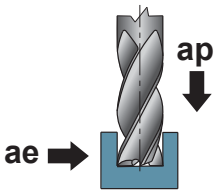
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW4401.030.G00	3	6	8	57	0,10	4
SMW4401.040.G00	4	6	11	57	0,13	4
SMW4401.050.G00	5	6	13	57	0,18	4
SMW4401.060.G00	6	6	13	57	0,20	4
SMW4401.070.G00	7	8	19	63	0,20	4
SMW4401.080.G00	8	8	19	63	0,20	4
SMW4401.090.G00	9	10	22	72	0,30	4
SMW4401.100.G00	10	10	22	72	0,30	4
SMW4401.110.G00	11	12	26	83	0,30	4
SMW4401.120.G00	12	12	26	83	0,30	4
SMW4401.130.G00	13	14	26	83	0,30	4
SMW4401.140.G00	14	14	26	83	0,30	4
SMW4401.160.G00	16	16	32	92	0,40	4
SMW4401.180.G00	18	18	32	92	0,40	4
SMW4401.200.G00	20	20	38	104	0,50	4
SMW4401.250.G00	25	25	38	104	0,50	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															3÷6	140-170	0,015-0,030	1xD	1xD
	●															6÷9	140-170	0,025-0,040	1xD	1xD
	●															9÷12	140-170	0,030-0,045	1xD	1xD
	●															12÷16	140-170	0,040-0,055	1xD	1xD
	●															16÷25	140-170	0,055-0,070	1xD	1xD
		●														3÷6	100-130	0,015-0,030	1xD	1xD
		●														6÷9	100-131	0,025-0,040	1xD	1xD
		●														9÷12	100-132	0,030-0,045	1xD	1xD
		●														12÷16	100-133	0,040-0,055	1xD	1xD
		●														16÷25	100-134	0,055-0,070	1xD	1xD
			●													3÷6	80-110	0,015-0,030	1xD	1xD
			●													6÷9	80-110	0,025-0,040	1xD	1xD
			●													9÷12	80-110	0,030-0,045	1xD	1xD
			●													12÷16	80-110	0,040-0,055	1xD	1xD
			●													16÷25	80-110	0,055-0,070	1xD	1xD
					○											3÷6	40-70	0,005-0,020	1xD	1xD
					○											6÷9	40-70	0,010-0,025	1xD	1xD
					○											9÷12	40-70	0,020-0,035	1xD	1xD
					○											12÷16	40-70	0,025-0,040	1xD	1xD
					○											16÷25	40-70	0,035-0,050	1xD	1xD
						●										3÷6	140-170	0,025-0,035	1xD	1xD
						●										6÷9	140-170	0,040-0,050	1xD	1xD
						●										9÷12	140-170	0,045-0,060	1xD	1xD
						●										12÷16	140-170	0,060-0,075	1xD	1xD
						●										16÷25	140-170	0,080-0,095	1xD	1xD
							●									3÷6	140-170	0,005-0,035	1xD	1xD
							●									6÷9	140-170	0,008-0,050	1xD	1xD
							●									9÷12	140-170	0,045-0,060	1xD	1xD
							●									12÷16	140-170	0,060-0,075	1xD	1xD
							●									16÷25	140-170	0,080-0,095	1xD	1xD
												○				3÷6	20-30	0,005-0,020	1xD	1xD
												○				6÷9	20-30	0,005-0,025	1xD	1xD
												○				9÷12	20-30	0,006-0,030	1xD	1xD
												○				12÷16	20-30	0,006-0,035	1xD	1xD
												○				16÷25	20-30	0,010-0,045	1xD	1xD
													○			3÷6	25-40	0,017-0,032	1xD	1xD
													○			6÷9	25-40	0,021-0,036	1xD	1xD
													○			9÷12	25-40	0,028-0,043	1xD	1xD
													○			12÷16	25-40	0,035-0,050	1xD	1xD
													○			16÷25	25-40	0,045-0,060	1xD	1xD
														○		3÷6	20-40	0,005-0,013	0,25xD	1xD
														○		6÷9	20-40	0,005-0,015	0,25xD	1xD
														○		9÷12	20-40	0,005-0,017	0,25xD	1xD
														○		12÷16	20-40	0,005-0,020	0,25xD	1xD
														○		16÷25	20-40	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

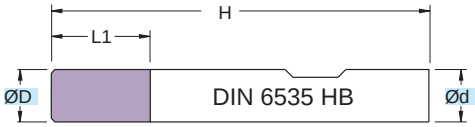
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4401..TI

ØD = 3 - 25



RIVESTIM. COATED
ORANGE

45°

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

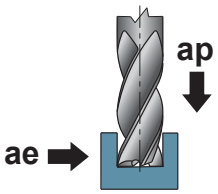
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	45°	z
SMW4401.030.G00.TI	3	6	8	57	0,10	4
SMW4401.040.G00.TI	4	6	11	57	0,13	4
SMW4401.050.G00.TI	5	6	13	57	0,18	4
SMW4401.060.G00.TI	6	6	13	57	0,20	4
SMW4401.070.G00.TI	7	8	19	63	0,20	4
SMW4401.080.G00.TI	8	8	19	63	0,20	4
SMW4401.090.G00.TI	9	10	22	72	0,30	4
SMW4401.100.G00.TI	10	10	22	72	0,30	4
SMW4401.110.G00.TI	11	12	26	83	0,30	4
SMW4401.120.G00.TI	12	12	26	83	0,30	4
SMW4401.130.G00.TI	13	14	26	83	0,30	4
SMW4401.140.G00.TI	14	14	26	83	0,30	4
SMW4401.160.G00.TI	16	16	32	92	0,40	4
SMW4401.180.G00.TI	18	18	32	92	0,40	4
SMW4401.200.G00.TI	20	20	38	104	0,50	4
SMW4401.250.G00.TI	25	25	38	104	0,50	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															3÷6	110-140	0,015-0,030	1xD	1xD
	○															6÷9	110-140	0,025-0,040	1xD	1xD
	○															9÷12	110-140	0,030-0,045	1xD	1xD
	○															12÷16	110-140	0,040-0,055	1xD	1xD
	○															16÷25	110-140	0,055-0,070	1xD	1xD
		○														3÷6	100-135	0,015-0,030	1xD	1xD
		○														6÷9	100-135	0,025-0,040	1xD	1xD
		○														9÷12	100-135	0,030-0,045	1xD	1xD
		○														12÷16	100-135	0,040-0,055	1xD	1xD
		○														16÷25	100-135	0,055-0,070	1xD	1xD
			○													3÷6	100-130	0,015-0,030	1xD	1xD
			○													6÷9	100-130	0,025-0,040	1xD	1xD
			○													9÷12	100-130	0,030-0,045	1xD	1xD
			○													12÷16	100-130	0,040-0,055	1xD	1xD
			○													16÷25	100-130	0,055-0,070	1xD	1xD
					●											3÷6	80-110	0,026-0,041	1xD	1xD
					●											6÷9	80-110	0,030-0,045	1xD	1xD
					●											9÷12	80-110	0,040-0,055	1xD	1xD
					●											12÷16	80-110	0,060-0,075	1xD	1xD
					●											16÷25	80-110	0,070-0,085	1xD	1xD
												●				3÷6	30-50	0,010-0,020	1xD	1xD
												●				6÷9	30-50	0,015-0,025	1xD	1xD
												●				9÷12	30-50	0,020-0,035	1xD	1xD
												●				12÷16	30-50	0,025-0,040	1xD	1xD
												●				16÷25	30-50	0,030-0,045	1xD	1xD
													●			3÷6	30-75	0,005-0,020	1xD	1xD
													●			6÷9	30-75	0,008-0,028	1xD	1xD
													●			9÷12	30-75	0,017-0,032	1xD	1xD
													●			12÷16	30-75	0,030-0,045	1xD	1xD
													●			16÷25	30-75	0,040-0,055	1xD	1xD
														○		3÷6	20-35	0,005-0,013	0,25xD	1xD
														○		6÷9	20-35	0,005-0,015	0,25xD	1xD
														○		9÷12	20-35	0,005-0,017	0,25xD	1xD
														○		12÷16	20-35	0,005-0,020	0,25xD	1xD
														○		16÷25	20-35	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

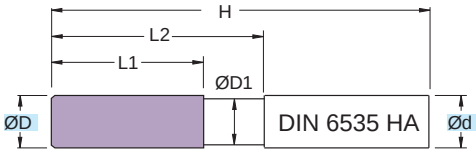
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4415

ØD = 3 - 25



RIVESTIM. COATED **BLACK**

45°

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

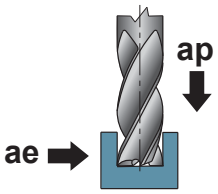
Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	45°	z
SM4415.030.G00	3	6	2,8	8	14	57	0,10	4
SM4415.040.G00	4	6	3,8	11	18	57	0,13	4
SM4415.050.G00	5	6	4,8	13	20	57	0,18	4
SM4415.060.G00	6	6	5,8	13	20	57	0,20	4
SM4415.070.G00	7	8	6,7	19	28	63	0,20	4
SM4415.080.G00	8	8	7,7	19	28	63	0,20	4
SM4415.090.G00	9	10	8,7	22	33	72	0,30	4
SM4415.100.G00	10	10	9,5	22	33	72	0,30	4
SM4415.110.G00	11	12	10,5	26	40	83	0,30	4
SM4415.120.G00	12	12	11,5	26	40	83	0,30	4
SM4415.130.G00	13	14	12,5	26	40	83	0,30	4
SM4415.140.G00	14	14	13,5	26	40	83	0,30	4
SM4415.160.G00	16	16	15,5	32	45	92	0,40	4
SM4415.180.G00	18	18	17,5	32	45	92	0,40	4
SM4415.200.G00	20	20	19,5	38	50	104	0,50	4
SM4415.250.G00	25	25	24,5	38	50	104	0,50	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															3÷6	140-170	0,015-0,030	1xD	1xD
	●															6÷9	140-170	0,025-0,040	1xD	1xD
	●															9÷12	140-170	0,030-0,045	1xD	1xD
	●															12÷16	140-170	0,040-0,055	1xD	1xD
	●															16÷25	140-170	0,055-0,070	1xD	1xD
		●														3÷6	100-130	0,015-0,030	1xD	1xD
		●														6÷9	100-131	0,025-0,040	1xD	1xD
		●														9÷12	100-132	0,030-0,045	1xD	1xD
		●														12÷16	100-133	0,040-0,055	1xD	1xD
		●														16÷25	100-134	0,055-0,070	1xD	1xD
			●													3÷6	80-110	0,015-0,030	1xD	1xD
			●													6÷9	80-110	0,025-0,040	1xD	1xD
			●													9÷12	80-110	0,030-0,045	1xD	1xD
			●													12÷16	80-110	0,040-0,055	1xD	1xD
			●													16÷25	80-110	0,055-0,070	1xD	1xD
					○											3÷6	40-70	0,005-0,020	1xD	1xD
					○											6÷9	40-70	0,010-0,025	1xD	1xD
					○											9÷12	40-70	0,020-0,035	1xD	1xD
					○											12÷16	40-70	0,025-0,040	1xD	1xD
					○											16÷25	40-70	0,035-0,050	1xD	1xD
						●										3÷6	140-170	0,025-0,035	1xD	1xD
						●										6÷9	140-170	0,040-0,050	1xD	1xD
						●										9÷12	140-170	0,045-0,060	1xD	1xD
						●										12÷16	140-170	0,060-0,075	1xD	1xD
						●										16÷25	140-170	0,080-0,095	1xD	1xD
							●									3÷6	140-170	0,005-0,035	1xD	1xD
							●									6÷9	140-170	0,008-0,050	1xD	1xD
							●									9÷12	140-170	0,045-0,060	1xD	1xD
							●									12÷16	140-170	0,060-0,075	1xD	1xD
							●									16÷25	140-170	0,080-0,095	1xD	1xD
												○				3÷6	20-30	0,005-0,020	1xD	1xD
												○				6÷9	20-30	0,005-0,025	1xD	1xD
												○				9÷12	20-30	0,006-0,030	1xD	1xD
												○				12÷16	20-30	0,006-0,035	1xD	1xD
												○				16÷25	20-30	0,010-0,045	1xD	1xD
													○			3÷6	25-40	0,017-0,032	1xD	1xD
													○			6÷9	25-40	0,021-0,036	1xD	1xD
													○			9÷12	25-40	0,028-0,043	1xD	1xD
													○			12÷16	25-40	0,035-0,050	1xD	1xD
													○			16÷25	25-40	0,045-0,060	1xD	1xD
														○		3÷6	20-40	0,005-0,013	0,25xD	1xD
														○		6÷9	20-40	0,005-0,015	0,25xD	1xD
														○		9÷12	20-40	0,005-0,017	0,25xD	1xD
														○		12÷16	20-40	0,005-0,020	0,25xD	1xD
														○		16÷25	20-40	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

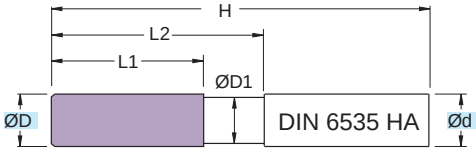
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4415..TI

ØD = 3 - 25



RIVESTIM. COATED
ORANGE

45°

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

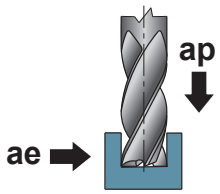
Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	45°	z
SM4415.030.G00.TI	3	6	2,8	8	14	57	0,10	4
SM4415.040.G00.TI	4	6	3,8	11	18	57	0,13	4
SM4415.050.G00.TI	5	6	4,8	13	20	57	0,18	4
SM4415.060.G00.TI	6	6	5,8	13	20	57	0,20	4
SM4415.070.G00.TI	7	8	6,7	19	28	63	0,20	4
SM4415.080.G00.TI	8	8	7,7	19	28	63	0,20	4
SM4415.090.G00.TI	9	10	8,7	22	33	72	0,30	4
SM4415.100.G00.TI	10	10	9,5	22	33	72	0,30	4
SM4415.110.G00.TI	11	12	10,5	26	40	83	0,30	4
SM4415.120.G00.TI	12	12	11,5	26	40	83	0,30	4
SM4415.130.G00.TI	13	14	12,5	26	40	83	0,30	4
SM4415.140.G00.TI	14	14	13,5	26	40	83	0,30	4
SM4415.160.G00.TI	16	16	15,5	32	45	92	0,40	4
SM4415.180.G00.TI	18	18	17,5	32	45	92	0,40	4
SM4415.200.G00.TI	20	20	19,5	38	50	104	0,50	4
SM4415.250.G00.TI	25	25	24,5	38	50	104	0,50	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															3÷6	110-140	0,015-0,030	1xD	1xD
	○															6÷9	110-140	0,025-0,040	1xD	1xD
	○															9÷12	110-140	0,030-0,045	1xD	1xD
	○															12÷16	110-140	0,040-0,055	1xD	1xD
	○															16÷25	110-140	0,055-0,070	1xD	1xD
		○														3÷6	100-135	0,015-0,030	1xD	1xD
		○														6÷9	100-135	0,025-0,040	1xD	1xD
		○														9÷12	100-135	0,030-0,045	1xD	1xD
		○														12÷16	100-135	0,040-0,055	1xD	1xD
		○														16÷25	100-135	0,055-0,070	1xD	1xD
			○													3÷6	100-130	0,015-0,030	1xD	1xD
			○													6÷9	100-130	0,025-0,040	1xD	1xD
			○													9÷12	100-130	0,030-0,045	1xD	1xD
			○													12÷16	100-130	0,040-0,055	1xD	1xD
			○													16÷25	100-130	0,055-0,070	1xD	1xD
					●											3÷6	80-110	0,026-0,041	1xD	1xD
					●											6÷9	80-110	0,030-0,045	1xD	1xD
					●											9÷12	80-110	0,040-0,055	1xD	1xD
					●											12÷16	80-110	0,060-0,075	1xD	1xD
					●											16÷25	80-110	0,070-0,085	1xD	1xD
												●				3÷6	30-50	0,010-0,020	1xD	1xD
												●				6÷9	30-50	0,015-0,025	1xD	1xD
												●				9÷12	30-50	0,020-0,035	1xD	1xD
												●				12÷16	30-50	0,025-0,040	1xD	1xD
												●				16÷25	30-50	0,030-0,045	1xD	1xD
													●			3÷6	30-75	0,005-0,020	1xD	1xD
													●			6÷9	30-75	0,008-0,028	1xD	1xD
													●			9÷12	30-75	0,017-0,032	1xD	1xD
													●			12÷16	30-75	0,030-0,045	1xD	1xD
													●			16÷25	30-75	0,040-0,055	1xD	1xD
														○		3÷6	20-35	0,005-0,013	0,25xD	1xD
														○		6÷9	20-35	0,005-0,015	0,25xD	1xD
														○		9÷12	20-35	0,005-0,017	0,25xD	1xD
														○		12÷16	20-35	0,005-0,020	0,25xD	1xD
														○		16÷25	20-35	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

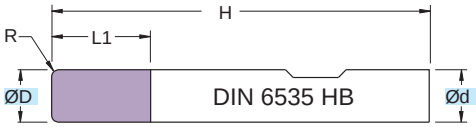
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4305

ØD = 4 - 20



RIVESTIM. COATED **GRAY**

R

52 HRC

α1 α2 α4 α3

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

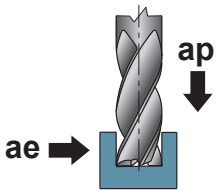
(mm)

ART.	ØD	Ød	L1	H	R	z
SMW4305.040.R025	4	6	11	57	0,25	4
SMW4305.041.R050	4	6	11	57	0,50	4
SMW4305.042.R100	4	6	11	57	1,00	4
SMW4305.050.R050	5	6	13	57	0,50	4
SMW4305.051.R100	5	6	13	57	1,00	4
SMW4305.052.R150	5	6	13	57	1,50	4
SMW4305.060.R050	6	6	13	57	0,50	4
SMW4305.061.R100	6	6	13	57	1,00	4
SMW4305.062.R150	6	6	13	57	1,50	4
SMW4305.063.R200	6	6	13	57	2,00	4
SMW4305.080.R050	8	8	19	63	0,50	4
SMW4305.081.R100	8	8	19	63	1,00	4
SMW4305.082.R150	8	8	19	63	1,50	4
SMW4305.083.R200	8	8	19	63	2,00	4
SMW4305.100.R050	10	10	22	72	0,50	4
SMW4305.101.R100	10	10	22	72	1,00	4
SMW4305.102.R150	10	10	22	72	1,50	4
SMW4305.103.R200	10	10	22	72	2,00	4
SMW4305.120.R050	12	12	26	83	0,50	4
SMW4305.121.R100	12	12	26	83	1,00	4
SMW4305.122.R150	12	12	26	83	1,50	4
SMW4305.123.R200	12	12	26	83	2,00	4
SMW4305.140.R100	14	14	26	83	1,00	4
SMW4305.141.R200	14	14	26	83	2,00	4
SMW4305.160.R100	16	16	32	92	1,00	4
SMW4305.161.R150	16	16	32	92	1,50	4

(mm)

ART.	ØD	Ød	L1	H	R	z
SMW4305.162.R200	16	16	32	92	2,00	4
SMW4305.163.R250	16	16	32	92	2,50	4
SMW4305.180.R150	18	18	32	92	1,50	4
SMW4305.181.R250	18	18	32	92	2,50	4
SMW4305.200.R100	20	20	38	104	1,00	4
SMW4305.201.R150	20	20	38	104	1,50	4
SMW4305.202.R200	20	20	38	104	2,00	4
SMW4305.203.R250	20	20	38	104	2,50	4
SMW4305.204.R300	20	20	38	104	3,00	4
SMW4305.205.R400	20	20	38	104	4,00	4
SMW4305.206.R500	20	20	38	104	5,00	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															4÷6	140-170	0,015-0,030	1xD	1xD
	●															6÷10	140-170	0,025-0,040	1xD	1xD
	●															10÷14	140-170	0,030-0,045	1xD	1xD
	●															14÷18	140-170	0,040-0,055	1xD	1xD
	●															18÷20	140-170	0,055-0,070	1xD	1xD
		●														4÷6	100-130	0,015-0,030	1xD	1xD
		●														6÷10	100-131	0,025-0,040	1xD	1xD
		●														10÷14	100-132	0,030-0,045	1xD	1xD
		●														14÷18	100-133	0,040-0,055	1xD	1xD
		●														18÷20	100-134	0,055-0,070	1xD	1xD
			●													4÷6	80-110	0,015-0,030	1xD	1xD
			●													6÷10	80-110	0,025-0,040	1xD	1xD
			●													10÷14	80-110	0,030-0,045	1xD	1xD
			●													14÷18	80-110	0,040-0,055	1xD	1xD
			●													18÷20	80-110	0,055-0,070	1xD	1xD
					○											4÷6	40-70	0,005-0,020	1xD	1xD
					○											6÷10	40-70	0,010-0,025	1xD	1xD
					○											10÷14	40-70	0,020-0,035	1xD	1xD
					○											14÷18	40-70	0,025-0,040	1xD	1xD
					○											18÷20	40-70	0,035-0,050	1xD	1xD
						●										4÷6	140-170	0,025-0,035	1xD	1xD
						●										6÷10	140-170	0,040-0,050	1xD	1xD
						●										10÷14	140-170	0,045-0,060	1xD	1xD
						●										14÷18	140-170	0,060-0,075	1xD	1xD
						●										18÷20	140-170	0,080-0,095	1xD	1xD
							●									4÷6	140-170	0,005-0,035	1xD	1xD
							●									6÷10	140-170	0,008-0,050	1xD	1xD
							●									10÷14	140-170	0,045-0,060	1xD	1xD
							●									14÷18	140-170	0,060-0,075	1xD	1xD
							●									18÷20	140-170	0,080-0,095	1xD	1xD
												○				4÷6	20-30	0,005-0,020	1xD	1xD
												○				6÷10	20-30	0,005-0,025	1xD	1xD
												○				10÷14	20-30	0,006-0,030	1xD	1xD
												○				14÷18	20-30	0,006-0,035	1xD	1xD
												○				18÷20	20-30	0,010-0,045	1xD	1xD
													○			4÷6	25-40	0,017-0,032	1xD	1xD
													○			6÷10	25-40	0,021-0,036	1xD	1xD
													○			10÷14	25-40	0,028-0,043	1xD	1xD
													○			14÷18	25-40	0,035-0,050	1xD	1xD
													○			18÷20	25-40	0,045-0,060	1xD	1xD
														○		4÷6	20-40	0,005-0,013	0,25xD	1xD
														○		6÷10	20-40	0,005-0,015	0,25xD	1xD
														○		10÷14	20-40	0,005-0,017	0,25xD	1xD
														○		14÷18	20-40	0,005-0,020	0,25xD	1xD
														○		18÷20	20-40	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

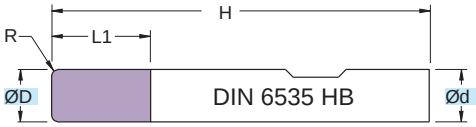
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMW4305..TI

ØD = 4 - 20



RIVESTIM. COATED
ORANGE

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

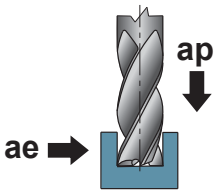
ART.	ØD	Ød	L1	H	R	z
SMW4305.040.R025.TI	4	6	11	57	0,25	4
SMW4305.041.R050.TI	4	6	11	57	0,50	4
SMW4305.042.R100.TI	4	6	11	57	1,00	4
SMW4305.050.R050.TI	5	6	13	57	0,50	4
SMW4305.051.R100.TI	5	6	13	57	1,00	4
SMW4305.052.R150.TI	5	6	13	57	1,50	4
SMW4305.060.R050.TI	6	6	13	57	0,50	4
SMW4305.061.R100.TI	6	6	13	57	1,00	4
SMW4305.062.R150.TI	6	6	13	57	1,50	4
SMW4305.063.R200.TI	6	6	13	57	2,00	4
SMW4305.080.R050.TI	8	8	19	63	0,50	4
SMW4305.081.R100.TI	8	8	19	63	1,00	4
SMW4305.082.R150.TI	8	8	19	63	1,50	4
SMW4305.083.R200.TI	8	8	19	63	2,00	4
SMW4305.100.R050.TI	10	10	22	72	0,50	4
SMW4305.101.R100.TI	10	10	22	72	1,00	4
SMW4305.102.R150.TI	10	10	22	72	1,50	4
SMW4305.103.R200.TI	10	10	22	72	2,00	4
SMW4305.120.R050.TI	12	12	26	83	0,50	4
SMW4305.121.R100.TI	12	12	26	83	1,00	4
SMW4305.122.R150.TI	12	12	26	83	1,50	4
SMW4305.123.R200.TI	12	12	26	83	2,00	4
SMW4305.140.R100.TI	14	14	26	83	1,00	4
SMW4305.141.R200.TI	14	14	26	83	2,00	4
SMW4305.160.R100.TI	16	16	32	92	1,00	4
SMW4305.161.R150.TI	16	16	32	92	1,50	4

(mm)

ART.	ØD	Ød	L1	H	R	z
SMW4305.162.R200.TI	16	16	32	92	2,00	4
SMW4305.163.R250.TI	16	16	32	92	2,50	4
SMW4305.180.R150.TI	18	18	32	92	1,50	4
SMW4305.181.R250.TI	18	18	32	92	2,50	4
SMW4305.200.R100.TI	20	20	38	104	1,00	4
SMW4305.201.R150.TI	20	20	38	104	1,50	4
SMW4305.202.R200.TI	20	20	38	104	2,00	4
SMW4305.203.R250.TI	20	20	38	104	2,50	4
SMW4305.204.R300.TI	20	20	38	104	3,00	4
SMW4305.205.R400.TI	20	20	38	104	4,00	4
SMW4305.206.R500.TI	20	20	38	104	5,00	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															4÷6	110-140	0,015-0,030	1xD	1xD
	○															6÷10	110-140	0,025-0,040	1xD	1xD
	○															10÷14	110-140	0,030-0,045	1xD	1xD
	○															14÷18	110-140	0,040-0,055	1xD	1xD
	○															18÷20	110-140	0,055-0,070	1xD	1xD
		○														4÷6	100-135	0,015-0,030	1xD	1xD
		○														6÷10	100-135	0,025-0,040	1xD	1xD
		○														10÷14	100-135	0,030-0,045	1xD	1xD
		○														14÷18	100-135	0,040-0,055	1xD	1xD
		○														18÷20	100-135	0,055-0,070	1xD	1xD
			○													4÷6	100-130	0,015-0,030	1xD	1xD
			○													6÷10	100-130	0,025-0,040	1xD	1xD
			○													10÷14	100-130	0,030-0,045	1xD	1xD
			○													14÷18	100-130	0,040-0,055	1xD	1xD
			○													18÷20	100-130	0,055-0,070	1xD	1xD
					●											4÷6	80-110	0,026-0,041	1xD	1xD
					●											6÷10	80-110	0,030-0,045	1xD	1xD
					●											10÷14	80-110	0,040-0,055	1xD	1xD
					●											14÷18	80-110	0,060-0,075	1xD	1xD
					●											18÷20	80-110	0,070-0,085	1xD	1xD
												●				4÷6	30-50	0,010-0,020	1xD	1xD
												●				6÷10	30-50	0,015-0,025	1xD	1xD
												●				10÷14	30-50	0,020-0,035	1xD	1xD
												●				14÷18	30-50	0,025-0,040	1xD	1xD
												●				18÷20	30-50	0,030-0,045	1xD	1xD
													●			4÷6	30-75	0,005-0,020	1xD	1xD
													●			6÷10	30-75	0,008-0,030	1xD	1xD
													●			10÷14	30-75	0,023-0,038	1xD	1xD
													●			14÷18	30-75	0,033-0,048	1xD	1xD
													●			18÷20	30-75	0,037-0,052	1xD	1xD
														○		4÷6	20-35	0,005-0,013	0,25xD	1xD
														○		6÷10	20-35	0,005-0,015	0,25xD	1xD
														○		10÷14	20-35	0,005-0,017	0,25xD	1xD
														○		14÷18	20-35	0,005-0,020	0,25xD	1xD
														○		18÷20	20-35	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

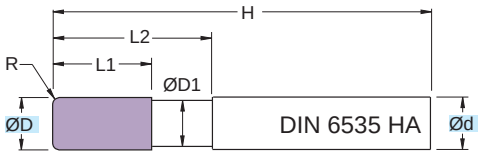
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4315

ØD = 4 - 20



RIVESTIM. COATED
GRAY

R

52 HRC

α1 α2 α4 α3

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE TOLLERANCE RANGE	D h10	d h6

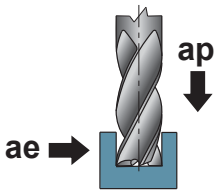
(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4315.040.R025	4	6	3,8	11	18	57	0,25	4
SM4315.041.R050	4	6	3,8	11	18	57	0,50	4
SM4315.042.R100	4	6	3,8	11	18	57	1,00	4
SM4315.050.R050	5	6	4,8	13	20	57	0,50	4
SM4315.051.R100	5	6	4,8	13	20	57	1,00	4
SM4315.052.R150	5	6	4,8	13	20	57	1,50	4
SM4315.060.R050	6	6	5,8	13	20	57	0,50	4
SM4315.061.R100	6	6	5,8	13	20	57	1,00	4
SM4315.062.R150	6	6	5,8	13	20	57	1,50	4
SM4315.063.R200	6	6	5,8	13	20	57	2,00	4
SM4315.080.R050	8	8	7,7	19	28	63	0,50	4
SM4315.081.R100	8	8	7,7	19	28	63	1,00	4
SM4315.082.R150	8	8	7,7	19	28	63	1,50	4
SM4315.083.R200	8	8	7,7	19	28	63	2,00	4
SM4315.100.R050	10	10	9,5	22	33	72	0,50	4
SM4315.101.R100	10	10	9,5	22	33	72	1,00	4
SM4315.102.R150	10	10	9,5	22	33	72	1,50	4
SM4315.103.R200	10	10	9,5	22	33	72	2,00	4
SM4315.120.R050	12	12	11,5	26	40	83	0,50	4
SM4315.121.R100	12	12	11,5	26	40	83	1,00	4
SM4315.122.R150	12	12	11,5	26	40	83	1,50	4
SM4315.123.R200	12	12	11,5	26	40	83	2,00	4
SM4315.140.R100	14	14	13,5	26	40	83	1,00	4
SM4315.141.R200	14	14	13,5	26	40	83	2,00	4
SM4315.160.R100	16	16	15,5	32	45	92	1,00	4
SM4315.161.R150	16	16	15,5	32	45	92	1,50	4

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4315.162.R200	16	16	15,5	32	45	92	2,00	4
SM4315.163.R250	16	16	15,5	32	45	92	2,50	4
SM4315.180.R150	18	18	17,5	32	45	92	1,50	4
SM4315.181.R250	18	18	17,5	32	45	92	2,50	4
SM4315.200.R100	20	20	19,5	38	50	104	1,00	4
SM4315.201.R150	20	20	19,5	38	50	104	1,50	4
SM4315.202.R200	20	20	19,5	38	50	104	2,00	4
SM4315.203.R250	20	20	19,5	38	50	104	2,50	4
SM4315.204.R300	20	20	19,5	38	50	104	3,00	4
SM4315.205.R400	20	20	19,5	38	50	104	4,00	4
SM4315.206.R500	20	20	19,5	38	50	104	5,00	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															4÷6	140-170	0,015-0,030	1xD	1xD
	●															6÷10	140-170	0,025-0,040	1xD	1xD
	●															10÷14	140-170	0,030-0,045	1xD	1xD
	●															14÷18	140-170	0,040-0,055	1xD	1xD
	●															18÷20	140-170	0,055-0,070	1xD	1xD
		●														4÷6	100-130	0,015-0,030	1xD	1xD
		●														6÷10	100-131	0,025-0,040	1xD	1xD
		●														10÷14	100-132	0,030-0,045	1xD	1xD
		●														14÷18	100-133	0,040-0,055	1xD	1xD
		●														18÷20	100-134	0,055-0,070	1xD	1xD
			●													4÷6	80-110	0,015-0,030	1xD	1xD
			●													6÷10	80-110	0,025-0,040	1xD	1xD
			●													10÷14	80-110	0,030-0,045	1xD	1xD
			●													14÷18	80-110	0,040-0,055	1xD	1xD
			●													18÷20	80-110	0,055-0,070	1xD	1xD
					○											4÷6	40-70	0,005-0,020	1xD	1xD
					○											6÷10	40-70	0,010-0,025	1xD	1xD
					○											10÷14	40-70	0,020-0,035	1xD	1xD
					○											14÷18	40-70	0,025-0,040	1xD	1xD
					○											18÷20	40-70	0,035-0,050	1xD	1xD
						●										4÷6	140-170	0,025-0,035	1xD	1xD
						●										6÷10	140-170	0,040-0,050	1xD	1xD
						●										10÷14	140-170	0,045-0,060	1xD	1xD
						●										14÷18	140-170	0,060-0,075	1xD	1xD
						●										18÷20	140-170	0,080-0,095	1xD	1xD
							●									4÷6	140-170	0,005-0,035	1xD	1xD
							●									6÷10	140-170	0,008-0,050	1xD	1xD
							●									10÷14	140-170	0,045-0,060	1xD	1xD
							●									14÷18	140-170	0,060-0,075	1xD	1xD
							●									18÷20	140-170	0,080-0,095	1xD	1xD
												○				4÷6	20-30	0,005-0,020	1xD	1xD
												○				6÷10	20-30	0,005-0,025	1xD	1xD
												○				10÷14	20-30	0,006-0,030	1xD	1xD
												○				14÷18	20-30	0,006-0,035	1xD	1xD
												○				18÷20	20-30	0,010-0,045	1xD	1xD
													○			4÷6	25-40	0,017-0,032	1xD	1xD
													○			6÷10	25-40	0,021-0,036	1xD	1xD
													○			10÷14	25-40	0,028-0,043	1xD	1xD
													○			14÷18	25-40	0,035-0,050	1xD	1xD
													○			18÷20	25-40	0,045-0,060	1xD	1xD
														○		4÷6	20-40	0,005-0,013	0,25xD	1xD
														○		6÷10	20-40	0,005-0,015	0,25xD	1xD
														○		10÷14	20-40	0,005-0,017	0,25xD	1xD
														○		14÷18	20-40	0,005-0,020	0,25xD	1xD
														○		18÷20	20-40	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

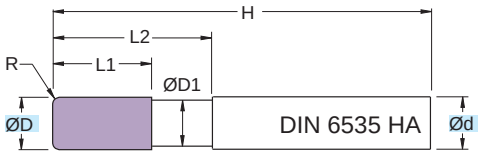
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4315..TI

ØD = 4 - 20



RIVESTIM. COATED
ORANGE

R

52 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HA

Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

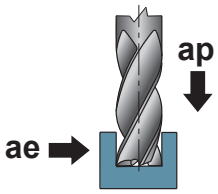
ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4315.040.R025.TI	4	6	3,8	11	18	57	0,25	4
SM4315.041.R050.TI	4	6	3,8	11	18	57	0,50	4
SM4315.042.R100.TI	4	6	3,8	11	18	57	1,00	4
SM4315.050.R050.TI	5	6	4,8	13	20	57	0,50	4
SM4315.051.R100.TI	5	6	4,8	13	20	57	1,00	4
SM4315.052.R150.TI	5	6	4,8	13	20	57	1,50	4
SM4315.060.R050.TI	6	6	5,8	13	20	57	0,50	4
SM4315.061.R100.TI	6	6	5,8	13	20	57	1,00	4
SM4315.062.R150.TI	6	6	5,8	13	20	57	1,50	4
SM4315.063.R200.TI	6	6	5,8	13	20	57	2,00	4
SM4315.080.R050.TI	8	8	7,7	19	28	63	0,50	4
SM4315.081.R100.TI	8	8	7,7	19	28	63	1,00	4
SM4315.082.R150.TI	8	8	7,7	19	28	63	1,50	4
SM4315.083.R200.TI	8	8	7,7	19	28	63	2,00	4
SM4315.100.R050.TI	10	10	9,5	22	33	72	0,50	4
SM4315.101.R100.TI	10	10	9,5	22	33	72	1,00	4
SM4315.102.R150.TI	10	10	9,5	22	33	72	1,50	4
SM4315.103.R200.TI	10	10	9,5	22	33	72	2,00	4
SM4315.120.R050.TI	12	12	11,5	26	40	83	0,50	4
SM4315.121.R100.TI	12	12	11,5	26	40	83	1,00	4
SM4315.122.R150.TI	12	12	11,5	26	40	83	1,50	4
SM4315.123.R200.TI	12	12	11,5	26	40	83	2,00	4
SM4315.140.R100.TI	14	14	13,5	26	40	83	1,00	4
SM4315.141.R200.TI	14	14	13,5	26	40	83	2,00	4
SM4315.160.R100.TI	16	16	15,5	32	45	92	1,00	4
SM4315.161.R150.TI	16	16	15,5	32	45	92	1,50	4

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4315.162.R200.TI	16	16	15,5	32	45	92	2,00	4
SM4315.163.R250.TI	16	16	15,5	32	45	92	2,50	4
SM4315.180.R150.TI	18	18	17,5	32	45	92	1,50	4
SM4315.181.R250.TI	18	18	17,5	32	45	92	2,50	4
SM4315.200.R100.TI	20	20	19,5	38	50	104	1,00	4
SM4315.201.R150.TI	20	20	19,5	38	50	104	1,50	4
SM4315.202.R200.TI	20	20	19,5	38	50	104	2,00	4
SM4315.203.R250.TI	20	20	19,5	38	50	104	2,50	4
SM4315.204.R300.TI	20	20	19,5	38	50	104	3,00	4
SM4315.205.R400.TI	20	20	19,5	38	50	104	4,00	4
SM4315.206.R500.TI	20	20	19,5	38	50	104	5,00	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															4÷6	110-140	0,015-0,030	1xD	1xD
	○															6÷10	110-140	0,025-0,040	1xD	1xD
	○															10÷14	110-140	0,030-0,045	1xD	1xD
	○															14÷18	110-140	0,040-0,055	1xD	1xD
	○															18÷20	110-140	0,055-0,070	1xD	1xD
		○														4÷6	100-135	0,015-0,030	1xD	1xD
		○														6÷10	100-135	0,025-0,040	1xD	1xD
		○														10÷14	100-135	0,030-0,045	1xD	1xD
		○														14÷18	100-135	0,040-0,055	1xD	1xD
		○														18÷20	100-135	0,055-0,070	1xD	1xD
			○													4÷6	100-130	0,015-0,030	1xD	1xD
			○													6÷10	100-130	0,025-0,040	1xD	1xD
			○													10÷14	100-130	0,030-0,045	1xD	1xD
			○													14÷18	100-130	0,040-0,055	1xD	1xD
			○													18÷20	100-130	0,055-0,070	1xD	1xD
					●											4÷6	80-110	0,026-0,041	1xD	1xD
					●											6÷10	80-110	0,030-0,045	1xD	1xD
					●											10÷14	80-110	0,040-0,055	1xD	1xD
					●											14÷18	80-110	0,060-0,075	1xD	1xD
					●											18÷20	80-110	0,070-0,085	1xD	1xD
												●				4÷6	30-50	0,010-0,020	1xD	1xD
												●				6÷10	30-50	0,015-0,025	1xD	1xD
												●				10÷14	30-50	0,020-0,035	1xD	1xD
												●				14÷18	30-50	0,025-0,040	1xD	1xD
												●				18÷20	30-50	0,030-0,045	1xD	1xD
													●			4÷6	30-75	0,005-0,020	1xD	1xD
													●			6÷10	30-75	0,008-0,030	1xD	1xD
													●			10÷14	30-75	0,023-0,038	1xD	1xD
													●			14÷18	30-75	0,033-0,048	1xD	1xD
													●			18÷20	30-75	0,037-0,052	1xD	1xD
														○		4÷6	20-35	0,005-0,013	0,25xD	1xD
														○		6÷10	20-35	0,005-0,015	0,25xD	1xD
														○		10÷14	20-35	0,005-0,017	0,25xD	1xD
														○		14÷18	20-35	0,005-0,020	0,25xD	1xD
														○		18÷20	20-35	0,005-0,020	0,25xD	1xD

PER LAVORAZIONI A SPALLAMENTO AUMENTARE I PARAMETRI DEL 20%
FOR SHOULDER MILLING PARAMETERS SHOULD BE INCREASED BY 20%

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4313

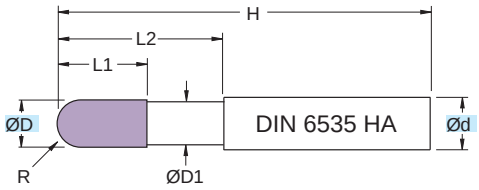
ØD = 2,5 - 16

NEW

RIVESTIM. COATED
GRAY

R

60 HRC



Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

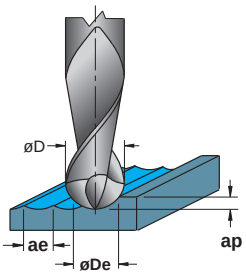
TOLLERANZE TOLLERANCE RANGE	D h10	d h6

α1 α2 α4 α3

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4313.025.S125	2,5	3	2,3	4,0	16	50	1,25	4
SM4313.030.S150	3,0	6	2,8	5,0	16	57	1,50	4
SM4313.035.S175	3,5	6	3,3	6,0	18	57	1,75	4
SM4313.040.S200	4,0	6	3,8	6,0	18	57	2,00	4
SM4313.045.S225	4,5	6	4,3	7,0	18	57	2,25	4
SM4313.050.S250	5,0	6	4,8	7,5	20	57	2,50	4
SM4313.060.S300	6,0	6	5,7	9,0	22	57	3,00	4
SM4313.070.S350	7,0	8	6,7	10,5	24	63	3,50	4
SM4313.080.S400	8,0	8	7,7	12,0	25	63	4,00	4
SM4313.090.S450	9,0	10	8,7	13,5	26	72	4,50	4
SM4313.100.S500	10,0	10	9,7	15,0	28	72	5,00	4
SM4313.120.S600	12,0	12	11,6	18,0	30	83	6,00	4
SM4313.130.S650	13,0	14	12,6	20,0	32	83	6,50	4
SM4313.140.S700	14,0	14	13,6	20,0	32	83	7,00	4
SM4313.150.S750	15,0	16	14,6	22,5	34	92	7,50	4
SM4313.160.S800	16,0	16	15,6	24,0	36	92	8,00	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															2,5	160-190	0,020-0,035	0,1xDe	0,6xDe
	●															3÷4	160-190	0,035-0,050	0,1xDe	0,6xDe
	●															4÷5	160-190	0,035-0,050	0,1xDe	0,6xDe
	●															5÷7	160-190	0,035-0,050	0,1xDe	0,6xDe
	●															7÷9	160-190	0,040-0,055	0,1xDe	0,6xDe
	●															9÷12	160-190	0,070-0,085	0,1xDe	0,6xDe
	●															12÷14	160-190	0,080-0,095	0,1xDe	0,6xDe
	●															14÷16	160-190	0,085-0,115	0,1xDe	0,6xDe
		●														2,5	140-170	0,020-0,035	0,1xDe	0,6xDe
		●														3÷4	140-170	0,035-0,050	0,1xDe	0,6xDe
		●														4÷5	140-170	0,035-0,050	0,1xDe	0,6xDe
		●														5÷7	140-170	0,035-0,050	0,1xDe	0,6xDe
		●														7÷9	140-170	0,040-0,055	0,1xDe	0,6xDe
		●														9÷12	140-170	0,070-0,085	0,1xDe	0,6xDe
		●														12÷14	140-170	0,080-0,095	0,1xDe	0,6xDe
		●														14÷16	140-170	0,085-0,115	0,1xDe	0,6xDe
			●													2,5	110-140	0,020-0,035	0,1xDe	0,6xDe
			●													3÷4	110-140	0,035-0,050	0,1xDe	0,6xDe
			●													4÷5	110-140	0,035-0,050	0,1xDe	0,6xDe
			●													5÷7	110-140	0,035-0,050	0,1xDe	0,6xDe
			●													7÷9	110-140	0,040-0,055	0,1xDe	0,6xDe
			●													9÷12	110-140	0,070-0,085	0,1xDe	0,6xDe
			●													12÷14	110-140	0,080-0,095	0,1xDe	0,6xDe
			●													14÷16	110-140	0,085-0,115	0,1xDe	0,6xDe
					○											2,5	40-70	0,003-0,015	0,1xDe	0,6xDe
					○											3÷4	40-70	0,010-0,025	0,1xDe	0,6xDe
					○											4÷5	40-70	0,010-0,025	0,1xDe	0,6xDe
					○											5÷7	40-70	0,010-0,025	0,1xDe	0,6xDe
					○											7÷9	40-70	0,020-0,035	0,1xDe	0,6xDe
					○											9÷12	40-70	0,040-0,055	0,1xDe	0,6xDe
					○											12÷14	40-70	0,050-0,065	0,1xDe	0,6xDe
					○											14÷16	40-70	0,055-0,075	0,1xDe	0,6xDe
						●										2,5	140-170	0,025-0,040	0,1xDe	0,6xDe
						●										3÷4	140-170	0,050-0,065	0,1xDe	0,6xDe
						●										4÷5	140-170	0,050-0,065	0,1xDe	0,6xDe
						●										5÷7	140-170	0,050-0,065	0,1xDe	0,6xDe
						●										7÷9	140-170	0,060-0,075	0,1xDe	0,6xDe
						●										9÷12	140-170	0,110-0,125	0,1xDe	0,6xDe
						●										12÷14	140-170	0,130-0,145	0,1xDe	0,6xDe
						●										14÷16	140-170	0,135-0,155	0,1xDe	0,6xDe
							●									2,5	140-170	0,020-0,035	0,1xDe	0,6xDe
							●									3÷4	140-170	0,035-0,050	0,1xDe	0,6xDe
							●									4÷5	140-170	0,035-0,050	0,1xDe	0,6xDe
							●									5÷7	140-170	0,035-0,050	0,1xDe	0,6xDe
							●									7÷9	140-170	0,040-0,055	0,1xDe	0,6xDe
							●									9÷12	140-170	0,070-0,085	0,1xDe	0,6xDe
							●									12÷14	140-170	0,080-0,095	0,1xDe	0,6xDe
							●									14÷16	140-170	0,085-0,100	0,1xDe	0,6xDe
														○		2,5	90-120	0,003-0,015	0,1xDe	0,6xDe
														○		3÷4	90-120	0,010-0,025	0,1xDe	0,6xDe
														○		4÷5	90-120	0,010-0,025	0,1xDe	0,6xDe
														○		5÷7	90-120	0,010-0,025	0,1xDe	0,6xDe
														○		7÷9	90-120	0,020-0,035	0,1xDe	0,6xDe
														○		9÷12	90-120	0,040-0,055	0,1xDe	0,6xDe
														○		12÷14	90-120	0,050-0,065	0,1xDe	0,6xDe
														○		14÷16	90-120	0,055-0,075	0,1xDe	0,6xDe

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4313..TI

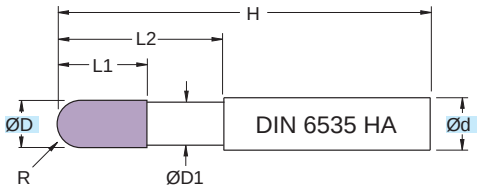
ØD = 2,5 - 16

NEW

RIVESTIM. COATED
ORANGE

R

52 HRC



Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

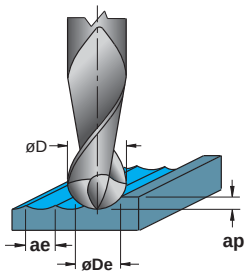
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

α1 α2 α4 α3

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4313.025.S125.TI	2,5	3	2,3	4,0	16	50	1,25	4
SM4313.030.S150.TI	3,0	6	2,8	5,0	16	57	1,50	4
SM4313.035.S175.TI	3,5	6	3,3	6,0	18	57	1,75	4
SM4313.040.S200.TI	4,0	6	3,8	6,0	18	57	2,00	4
SM4313.045.S225.TI	4,5	6	4,3	7,0	18	57	2,25	4
SM4313.050.S250.TI	5,0	6	4,8	7,5	20	57	2,50	4
SM4313.060.S300.TI	6,0	6	5,7	9,0	22	57	3,00	4
SM4313.070.S350.TI	7,0	8	6,7	10,5	24	63	3,50	4
SM4313.080.S400.TI	8,0	8	7,7	12,0	25	63	4,00	4
SM4313.090.S450.TI	9,0	10	8,7	13,5	26	72	4,50	4
SM4313.100.S500.TI	10,0	10	9,7	15,0	28	72	5,00	4
SM4313.120.S600.TI	12,0	12	11,6	18,0	30	83	6,00	4
SM4313.130.S650.TI	13,0	14	12,6	20,0	32	83	6,50	4
SM4313.140.S700.TI	14,0	14	13,6	20,0	32	83	7,00	4
SM4313.150.S750.TI	15,0	16	14,6	22,5	34	92	7,50	4
SM4313.160.S800.TI	16,0	16	15,6	24,0	36	92	8,00	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	○															2,5	110-140	0,020-0,035	0,1xDe	0,6xDe
	○															3÷4	110-140	0,035-0,050	0,1xDe	0,6xDe
	○															4÷5	110-140	0,035-0,050	0,1xDe	0,6xDe
	○															5÷7	110-140	0,035-0,050	0,1xDe	0,6xDe
	○															7÷9	110-140	0,040-0,055	0,1xDe	0,6xDe
	○															9÷12	110-140	0,070-0,085	0,1xDe	0,6xDe
	○															12÷14	110-140	0,080-0,095	0,1xDe	0,6xDe
	○															14÷16	110-140	0,085-0,115	0,1xDe	0,6xDe
				○												2,5	120-150	0,015-0,030	0,1xDe	0,6xDe
				○												3÷4	120-150	0,025-0,040	0,1xDe	0,6xDe
				○												4÷5	120-150	0,030-0,045	0,1xDe	0,6xDe
				○												5÷7	120-150	0,040-0,055	0,1xDe	0,6xDe
				○												7÷9	120-150	0,055-0,070	0,1xDe	0,6xDe
				○												9÷12	120-150	0,065-0,080	0,1xDe	0,6xDe
				○												12÷14	120-150	0,075-0,090	0,1xDe	0,6xDe
				○												14÷16	120-150	0,085-0,110	0,1xDe	0,6xDe
					●											2,5	90-140	0,030-0,045	0,1xDe	0,6xDe
					●											3÷4	90-140	0,030-0,045	0,1xDe	0,6xDe
					●											4÷5	90-140	0,040-0,055	0,1xDe	0,6xDe
					●											5÷7	90-140	0,050-0,065	0,1xDe	0,6xDe
					●											7÷9	90-140	0,060-0,075	0,1xDe	0,6xDe
					●											9÷12	90-140	0,070-0,085	0,1xDe	0,6xDe
					●											12÷14	90-140	0,080-0,095	0,1xDe	0,6xDe
					●											14÷16	90-140	0,090-0,105	0,1xDe	0,6xDe
												●				2,5	35-80	0,010-0,025	0,08xDe	0,3xDe
												●				3÷4	35-80	0,010-0,025	0,08xDe	0,3xDe
												●				4÷5	35-80	0,020-0,035	0,08xDe	0,3xDe
												●				5÷7	35-80	0,020-0,035	0,08xDe	0,3xDe
												●				7÷9	35-80	0,030-0,045	0,08xDe	0,3xDe
												●				9÷12	35-80	0,040-0,055	0,08xDe	0,3xDe
												●				12÷14	35-80	0,050-0,065	0,08xDe	0,3xDe
												●				14÷16	35-80	0,060-0,080	0,08xDe	0,3xDe
													●			2,5	90-120	0,010-0,028	0,08xDe	0,3xDe
													●			3÷4	90-120	0,015-0,030	0,08xDe	0,3xDe
													●			4÷5	90-120	0,020-0,035	0,08xDe	0,3xDe
													●			5÷7	90-120	0,027-0,042	0,08xDe	0,3xDe
													●			7÷9	90-120	0,035-0,050	0,08xDe	0,3xDe
													●			9÷12	90-120	0,045-0,060	0,08xDe	0,3xDe
													●			12÷14	90-120	0,055-0,070	0,08xDe	0,3xDe
													●			14÷16	90-120	0,070-0,085	0,08xDe	0,3xDe
														○		2,5	30-50	0,005-0,013	0,05xDe	0,15xDe
														○		3÷4	30-50	0,005-0,015	0,05xDe	0,1xDe
														○		4÷5	30-50	0,006-0,017	0,05xDe	0,1xDe
														○		5÷7	30-50	0,006-0,020	0,05xDe	0,1xDe
														○		7÷9	30-50	0,010-0,020	0,05xDe	0,1xDe
														○		9÷12	30-50	0,014-0,023	0,05xDe	0,1xDe
														○		12÷14	30-50	0,016-0,028	0,05xDe	0,1xDe
														○		14÷16	30-50	0,020-0,032	0,05xDe	0,1xDe

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

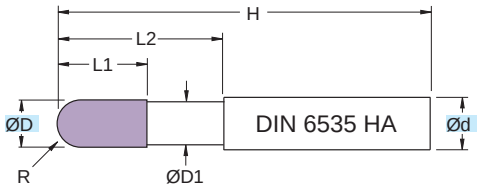
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SM4413..LX

ØD = 3 - 16

NEW



RIVESTIM. COATED
GRAY

R

60 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

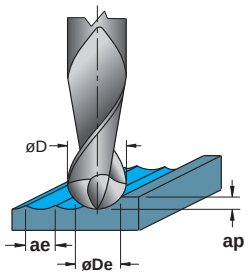
Micrograin HM mills
Cilindrical Shank HA

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4413.030.S150.LX	3	6	2,8	5,0	17	75	1,5	4
SM4413.040.S200.LX	4	6	3,8	6,0	22	75	2,0	4
SM4413.050.S250.LX	5	6	4,8	7,5	27	75	2,5	4
SM4413.060.S300.LX	6	6	5,7	9,0	32	100	3,0	4
SM4413.080.S400.LX	8	8	7,7	12,0	42	100	4,0	4
SM4413.100.S500.LX	10	10	9,7	15,0	52	127	5,0	4
SM4413.120.S600.LX	12	12	11,6	18,0	62	152	6,0	4
SM4413.160.S800.LX	16	16	15,6	24,0	82	152	8,0	4

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															3	160-190	0,020-0,035	0,08xDe	0,5xDe
	●															4	160-190	0,035-0,050	0,08xDe	0,5xDe
	●															5	160-190	0,035-0,050	0,08xDe	0,5xDe
	●															6	160-190	0,035-0,050	0,08xDe	0,5xDe
	●															8	160-190	0,040-0,055	0,08xDe	0,5xDe
	●															10	160-190	0,070-0,085	0,08xDe	0,5xDe
	●															12	160-190	0,080-0,095	0,08xDe	0,5xDe
	●															16	160-190	0,085-0,115	0,08xDe	0,5xDe
		●														3	140-170	0,020-0,035	0,08xDe	0,5xDe
		●														4	140-170	0,035-0,050	0,08xDe	0,5xDe
		●														5	140-170	0,035-0,050	0,08xDe	0,5xDe
		●														6	140-170	0,035-0,050	0,08xDe	0,5xDe
		●														8	140-170	0,040-0,055	0,08xDe	0,5xDe
		●														10	140-170	0,070-0,085	0,08xDe	0,5xDe
		●														12	140-170	0,080-0,095	0,08xDe	0,5xDe
		●														16	140-170	0,085-0,115	0,08xDe	0,5xDe
			●													3	110-140	0,020-0,035	0,08xDe	0,5xDe
			●													4	110-140	0,035-0,050	0,08xDe	0,5xDe
			●													5	110-140	0,035-0,050	0,08xDe	0,5xDe
			●													6	110-140	0,035-0,050	0,08xDe	0,5xDe
			●													8	110-140	0,040-0,055	0,08xDe	0,5xDe
			●													10	110-140	0,070-0,085	0,08xDe	0,5xDe
			●													12	110-140	0,080-0,095	0,08xDe	0,5xDe
			●													16	110-140	0,085-0,115	0,08xDe	0,5xDe
					○											3	40-70	0,003-0,015	0,08xDe	0,5xDe
					○											4	40-70	0,010-0,025	0,08xDe	0,5xDe
					○											5	40-70	0,010-0,025	0,08xDe	0,5xDe
					○											6	40-70	0,010-0,025	0,08xDe	0,5xDe
					○											8	40-70	0,020-0,035	0,08xDe	0,5xDe
					○											10	40-70	0,040-0,055	0,08xDe	0,5xDe
					○											12	40-70	0,050-0,065	0,08xDe	0,5xDe
					○											16	40-70	0,055-0,075	0,08xDe	0,5xDe
						●										3	140-170	0,025-0,040	0,08xDe	0,5xDe
						●										4	140-170	0,050-0,065	0,08xDe	0,5xDe
						●										5	140-170	0,050-0,065	0,08xDe	0,5xDe
						●										6	140-170	0,050-0,065	0,08xDe	0,5xDe
						●										8	140-170	0,060-0,075	0,08xDe	0,5xDe
						●										10	140-170	0,110-0,125	0,08xDe	0,5xDe
						●										12	140-170	0,130-0,145	0,08xDe	0,5xDe
						●										16	140-170	0,135-0,155	0,08xDe	0,5xDe
							●									3	140-170	0,020-0,035	0,08xDe	0,5xDe
							●									4	140-170	0,035-0,050	0,08xDe	0,5xDe
							●									5	140-170	0,035-0,050	0,08xDe	0,5xDe
							●									6	140-170	0,035-0,050	0,08xDe	0,5xDe
							●									8	140-170	0,040-0,055	0,08xDe	0,5xDe
							●									10	140-170	0,070-0,085	0,08xDe	0,5xDe
							●									12	140-170	0,080-0,095	0,08xDe	0,5xDe
							●									16	140-170	0,085-0,100	0,08xDe	0,5xDe
														○		3	90-120	0,003-0,015	0,08xDe	0,5xDe
														○		4	90-120	0,010-0,025	0,08xDe	0,5xDe
														○		5	90-120	0,010-0,025	0,08xDe	0,5xDe
														○		6	90-120	0,010-0,025	0,08xDe	0,5xDe
														○		8	90-120	0,020-0,035	0,08xDe	0,5xDe
														○		10	90-120	0,040-0,055	0,08xDe	0,5xDe
														○		12	90-120	0,050-0,065	0,08xDe	0,5xDe
														○		16	90-120	0,055-0,075	0,08xDe	0,5xDe

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

DATI TECNICI LAVORAZIONI PAG. 1014 - 1015
MACHINING TECHNICAL DATA PAGE 1014 - 1015
BEARBEITUNGSSCHNITTDATEN S. 1014 - 1015
DONNEES TECHNIQUES USINAGES PAGES 1014 - 1015

øD = mm DIAMETRO - DIAMETER
øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

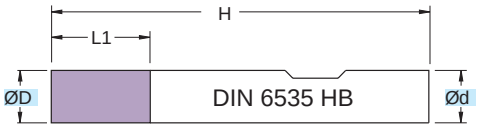
SEDI
CHIAVETTE

KEYSLOTS / PASSFEDERNUTEN / LOGEMENT CLES /
RANURAS PARA CHAVETAS

SAU
QUALITY TOOLS ENGINEERING

SMW3301

ØD = 1,80-15,70



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo cilindrico HB

Micrograin HM mills
Cilindrical Shank HB

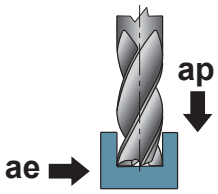
TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SMW3301.018.N00	1,80	6	3	50	3
SMW3301.028.N00	2,80	6	4	50	3
SMW3301.038.N00	3,80	6	5	50	3
SMW3301.048.N00	4,80	6	6	50	3
SMW3301.057.N00	5,75	6	7	50	3
SMW3301.077.N00	7,75	8	10	63	3
SMW3301.097.N00	9,70	10	11	72	3
SMW3301.117.N00	11,70	12	14	83	3
SMW3301.137.N00	13,70	14	14	83	3
SMW3301.157.N00	15,70	16	16	92	3

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
	●															1,80	70-100	0,010-0,025	0,5xD	1xD
	●															2,80	70-100	0,020-0,035	0,5xD	1xD
	●															3,80	70-100	0,030-0,045	0,5xD	1xD
	●															4,80	70-100	0,035-0,050	0,5xD	1xD
	●															5,75	70-100	0,040-0,055	0,5xD	1xD
	●															7,75	70-100	0,050-0,065	0,5xD	1xD
	●															9,70	70-100	0,060-0,075	0,5xD	1xD
	●															11,70	70-100	0,070-0,085	0,5xD	1xD
	●															13,70	70-100	0,080-0,095	0,5xD	1xD
	●															15,70	70-100	0,090-0,105	0,5xD	1xD
			●													1,80	55-85	0,010-0,025	0,5xD	1xD
			●													2,80	55-85	0,020-0,035	0,5xD	1xD
			●													3,80	55-85	0,030-0,045	0,5xD	1xD
			●													4,80	55-85	0,035-0,050	0,5xD	1xD
			●													5,75	55-85	0,040-0,055	0,5xD	1xD
			●													7,75	55-85	0,050-0,065	0,5xD	1xD
			●													9,70	55-85	0,060-0,075	0,5xD	1xD
			●													11,70	55-85	0,070-0,085	0,5xD	1xD
			●													13,70	55-85	0,080-0,095	0,5xD	1xD
			●													15,70	55-85	0,090-0,105	0,5xD	1xD
					●											1,80	40-70	0,010-0,025	0,5xD	1xD
					●											2,80	40-70	0,020-0,035	0,5xD	1xD
					●											3,80	40-70	0,030-0,045	0,5xD	1xD
					●											4,80	40-70	0,035-0,050	0,5xD	1xD
					●											5,75	40-70	0,040-0,055	0,5xD	1xD
					●											7,75	40-70	0,050-0,065	0,5xD	1xD
					●											9,70	40-70	0,060-0,075	0,5xD	1xD
					●											11,70	40-70	0,070-0,085	0,5xD	1xD
					●											13,70	40-70	0,080-0,095	0,5xD	1xD
					●											15,70	40-70	0,090-0,105	0,5xD	1xD
						●										1,80	90-130	0,010-0,025	0,5xD	1xD
						●										2,80	90-130	0,020-0,035	0,5xD	1xD
						●										3,80	90-130	0,030-0,045	0,5xD	1xD
						●										4,80	90-130	0,035-0,050	0,5xD	1xD
						●										5,75	90-130	0,040-0,055	0,5xD	1xD
						●										7,75	90-130	0,050-0,065	0,5xD	1xD
						●										9,70	90-130	0,060-0,075	0,5xD	1xD
						●										11,70	90-130	0,070-0,085	0,5xD	1xD
						●										13,70	90-130	0,080-0,095	0,5xD	1xD
																15,70	90-130	0,090-0,105	0,5xD	1xD
							●									1,80	70-100	0,010-0,025	0,5xD	1xD
							●									2,80	70-100	0,020-0,035	0,5xD	1xD
							●									3,80	70-100	0,030-0,045	0,5xD	1xD
							●									4,80	70-100	0,035-0,050	0,5xD	1xD
							●									5,75	70-100	0,040-0,055	0,5xD	1xD
							●									7,75	70-100	0,050-0,065	0,5xD	1xD
							●									9,70	70-100	0,060-0,075	0,5xD	1xD
							●									11,70	70-100	0,070-0,085	0,5xD	1xD
							●									13,70	70-100	0,080-0,095	0,5xD	1xD
							●									15,70	70-100	0,090-0,105	0,5xD	1xD

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

NOTE - NOTES

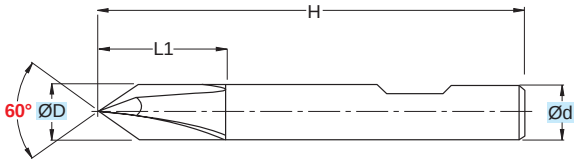
SVASATORI
SMUSSATORI

COUNTERSINK AND CHAMFER MILLS / KEGELSENKER-KANTENFRÄSER /
FRAISES CONIQUES A NOYER-CHANFREINEURS / AVELLANADORES-BISELADORAS

SAU
QUALITY TOOLS ENGINEERING

SCR0183

ØD = 4 - 20



RIVESTIM. COATED
BLACK

60°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

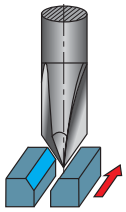
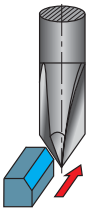
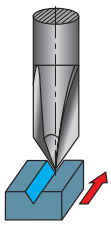
Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE TOLLERANCE RANGE	D	d h6

(mm)

ART.	ØD	Ød	H	L1	Z
SCR0183040	4	4	54	4	4
SCR0183060	6	6	57	6	4
SCR0183080	8	8	63	8	5
SCR0183100	10	10	72	10	6
SCR0183120	12	12	83	12	6
SCR0183160	16	16	92	16	6
SCR0183200	20	20	104	20	6

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													4	60-90	0,030-0,045	–	–
			●													6	60-90	0,030-0,045	–	–
			●													8	60-90	0,030-0,045	–	–
			●													10	60-90	0,030-0,045	–	–
			●													12	60-90	0,030-0,045	–	–
			●													16	60-90	0,030-0,045	–	–
			●													20	60-90	0,030-0,045	–	–
					●											4	30-60	0,020-0,035	–	–
					●											6	30-60	0,020-0,035	–	–
					●											8	30-60	0,020-0,035	–	–
					●											10	30-60	0,020-0,035	–	–
					●											12	30-60	0,020-0,035	–	–
					●											16	30-60	0,020-0,035	–	–
					●											20	30-60	0,020-0,035	–	–
							●									4	100-130	0,060-0,075	–	–
							●									6	100-130	0,060-0,075	–	–
							●									8	100-130	0,060-0,075	–	–
							●									10	100-130	0,060-0,075	–	–
							●									12	100-130	0,060-0,075	–	–
							●									16	100-130	0,060-0,075	–	–
							●									20	100-130	0,060-0,075	–	–
									●							4	270-320	0,060-0,075	–	–
									●							6	270-320	0,060-0,075	–	–
									●							8	270-320	0,060-0,075	–	–
									●							10	270-320	0,060-0,075	–	–
									●							12	270-320	0,060-0,075	–	–
									●							16	270-320	0,060-0,075	–	–
									●							20	270-320	0,060-0,075	–	–

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

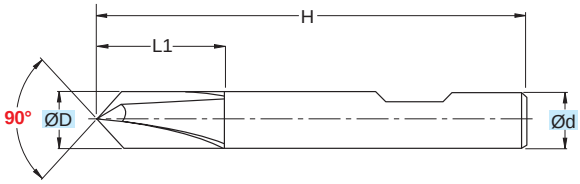
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SCR0187

ØD = 4 - 20



RIVESTIM. COATED
BLACK

90°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

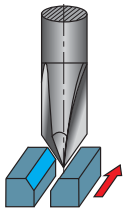
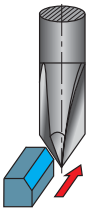
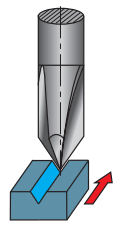
TOLLERANZE TOLLERANCE RANGE	D	d h6

(mm)

ART.	ØD	Ød	H	L1	Z
SCR0187040	4	4	54	4	4
SCR0187060	6	6	57	6	5
SCR0187080	8	8	63	8	5
SCR0187100	10	10	72	10	6
SCR0187120	12	12	83	12	6
SCR0187160	16	16	92	16	6
SCR0187200	20	20	104	20	6

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													4	60-90	0,030-0,045	–	–
			●													6	60-90	0,030-0,045	–	–
			●													8	60-90	0,030-0,045	–	–
			●													10	60-90	0,030-0,045	–	–
			●													12	60-90	0,030-0,045	–	–
			●													16	60-90	0,030-0,045	–	–
			●													20	60-90	0,030-0,045	–	–
					●											4	30-60	0,020-0,035	–	–
					●											6	30-60	0,020-0,035	–	–
					●											8	30-60	0,020-0,035	–	–
					●											10	30-60	0,020-0,035	–	–
					●											12	30-60	0,020-0,035	–	–
					●											16	30-60	0,020-0,035	–	–
					●											20	30-60	0,020-0,035	–	–
							●									4	100-130	0,060-0,075	–	–
							●									6	100-130	0,060-0,075	–	–
							●									8	100-130	0,060-0,075	–	–
							●									10	100-130	0,060-0,075	–	–
							●									12	100-130	0,060-0,075	–	–
							●									16	100-130	0,060-0,075	–	–
							●									20	100-130	0,060-0,075	–	–
									●							4	270-320	0,060-0,075	–	–
									●							6	270-320	0,060-0,075	–	–
									●							8	270-320	0,060-0,075	–	–
									●							10	270-320	0,060-0,075	–	–
									●							12	270-320	0,060-0,075	–	–
									●							16	270-320	0,060-0,075	–	–
									●							20	270-320	0,060-0,075	–	–

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

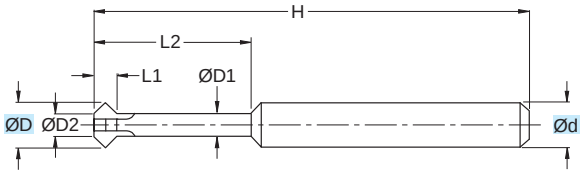
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SMR0110

ØD = 4 - 16



RIVESTIM. COATED
BLACK

45°

42 HRC

Fresa in M.D.I. Micrograno
Gambo sec. DIN 6535 HB

Micrograin HM mills
DIN 6535 HB Shank

TOLLERANZE TOLLERANCE RANGE	D h8	d h6

(mm)

ART.	ØD	Ød	ØD1	ØD2	H	L1	L2	Z
SMR0110040	4	4	2	0,5	100	2,75	15	4
SMR0110060	6	6	4	0,5	100	3,75	18	4
SMR0110080	8	8	5	0,5	100	5,25	24	4
SMR0110100	10	10	6	0,5	100	6,75	30	4
SMR0110120	12	12	7	1	100	8,00	36	4
SMR0110160	16	16	10	1	100	10,5	48	4

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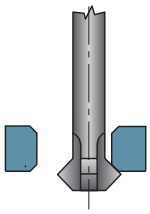
Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													4	60-90	0,030-0,045	–	–
			●													6	60-90	0,030-0,045	–	–
			●													8	60-90	0,030-0,045	–	–
			●													10	60-90	0,030-0,045	–	–
			●													12	60-90	0,030-0,045	–	–
			●													16	60-90	0,030-0,045	–	–
					●											4	30-60	0,020-0,035	–	–
					●											6	30-60	0,020-0,035	–	–
					●											8	30-60	0,020-0,035	–	–
					●											10	30-60	0,020-0,035	–	–
					●											12	30-60	0,020-0,035	–	–
					●											16	30-60	0,020-0,035	–	–
							●									4	100-130	0,060-0,075	–	–
							●									6	100-130	0,060-0,075	–	–
							●									8	100-130	0,060-0,075	–	–
							●									10	100-130	0,060-0,075	–	–
							●									12	100-130	0,060-0,075	–	–
							●									16	100-130	0,060-0,075	–	–
									●							4	270-320	0,060-0,075	–	–
									●							6	270-320	0,060-0,075	–	–
									●							8	270-320	0,060-0,075	–	–
									●							10	270-320	0,060-0,075	–	–
									●							12	270-320	0,060-0,075	–	–
									●							16	270-320	0,060-0,075	–	–

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

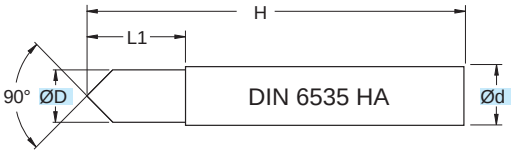
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

SS230

ØD = 3 - 20



90°

ALU
≤5% Si

Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM minimills
Cilindrical Shank HA

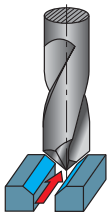
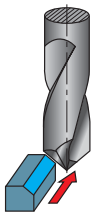
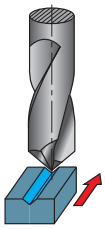
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	z
SS230.030	3	4	6	50	2
SS230.040	4	5	8	50	2
SS230.050	5	6	10	50	2
SS230.060	6	8	12	60	2
SS230.080	8	10	16	70	2
SS230.100	10	12	18	70	2
SS230.120	12	12	20	70	2
SS230.160	16	16	26	80	2
SS230.200	20	20	32	100	2

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO Si ≤ 12% ALUMINIUM 12 ≤ 12%	ALLUMINIO Si > 12% ALUMINIUM 12 > 12%	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
									●							3	350-470	0,020-0,035	–	–
									●							4	350-470	0,030-0,045	–	–
									●							5	350-470	0,040-0,055	–	–
									●							6	350-470	0,050-0,065	–	–
									●							8	350-470	0,070-0,085	–	–
									●							10	350-470	0,090-0,105	–	–
									●							12	350-470	0,110-0,125	–	–
									●							16	350-470	0,170-0,185	–	–
									●							20	350-470	0,190-0,205	–	–
										●						3	170-250	0,010-0,025	–	–
										●						4	170-250	0,020-0,035	–	–
										●						5	170-250	0,030-0,045	–	–
										●						6	170-250	0,040-0,055	–	–
										●						8	170-250	0,050-0,065	–	–
										●						10	170-250	0,070-0,085	–	–
										●						12	170-250	0,090-0,105	–	–
										●						16	170-250	0,150-0,165	–	–
										●						20	170-250	0,170-0,185	–	–
																				

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

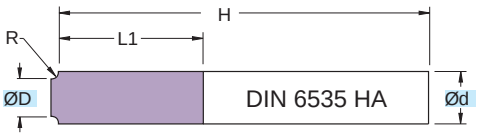
SM4701

ØD = 6 - 10

RIVESTIM. COATED
BLACK

R

42 HRC



Fresa in M.D.I. Micrograno
Gambo cilindrico HA

Micrograin HM mills
Cilindrical Shank HA

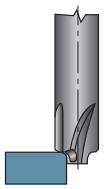
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
SM4701.080.R050	7	8	0,5	70	0,5	4
SM4701.080.R100	6	8	1,0	70	1,0	4
SM4701.100.R150	7	10	1,5	75	1,5	4
SM4701.100.R200	6	10	2,0	75	2,0	4
SM4701.120.R250	7	12	2,5	75	2,5	4
SM4701.120.R300	6	12	3,0	75	3,0	4
SM4701.160.R350	9	16	3,5	80	3,5	4
SM4701.160.R400	8	16	4,0	80	4,0	4
SM4701.160.R450	7	16	4,5	80	4,5	4
SM4701.200.R500	10	20	5,0	80	5,0	4
SM4701.200.R600	8	20	6,0	80	6,0	4

PAG. 997

MATERIALI - MATERIALS Pag. 1063

Applicazione - Application	P				M	K			N			S		H	G	(mm) Ød	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL MART.	INOX AUST. DUPLEX STAINLESS STEEL AUST.	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHEROIDAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	ALLUMINIO E SUE LEGHE ALUMINIUM	RAME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE					
			●													8	50-80	0,040-0,055	–	–
			●													10	50-80	0,040-0,055	–	–
			●													12	50-80	0,040-0,055	–	–
			●													16	50-80	0,040-0,055	–	–
			●													20	50-80	0,040-0,055	–	–
					●											8	20-50	0,040-0,055	–	–
					●											10	20-50	0,040-0,055	–	–
					●											12	20-50	0,040-0,055	–	–
					●											16	20-50	0,040-0,055	–	–
					●											20	20-50	0,040-0,055	–	–
							●									8	70-100	0,040-0,055	–	–
							●									10	70-100	0,040-0,055	–	–
							●									12	70-100	0,040-0,055	–	–
							●									16	70-100	0,040-0,055	–	–
							●									20	70-100	0,040-0,055	–	–
									●							8	100-130	0,040-0,055	–	–
									●							10	100-130	0,040-0,055	–	–
									●							12	100-130	0,040-0,055	–	–
									●							16	100-130	0,040-0,055	–	–
									●							20	100-130	0,040-0,055	–	–

● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

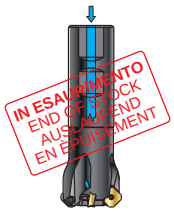
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} \text{ = giri/min (min}^{-1}\text{)}$$

$$fn = fz \cdot z \text{ = mm}$$

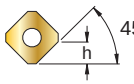
$$Vf = fz \cdot z \cdot n \text{ = mm/min}$$

S406 Pag. 342



ØD = 6 - 32

S 406W .. 09



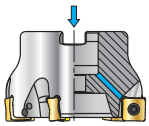
SD..0903 **h = 4**

S409 Pag. 342

ØD = 32 - 100

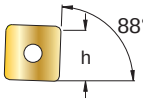
S 409W .. 09
S 409WF .. 09
S 409GW .. 09

S8801-8W Pag. 348



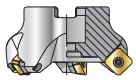
ØD = 50 - 250

S 8801-8W .. 12



SN..1206 **h = 11,5**

S438 Pag. 344

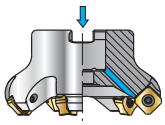


ØD = 50 - 315

S 438 .. 13
S438F .. 13
S438G .. 13

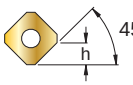
SE..13T3 **h = 6**

S4501 Pag. 346

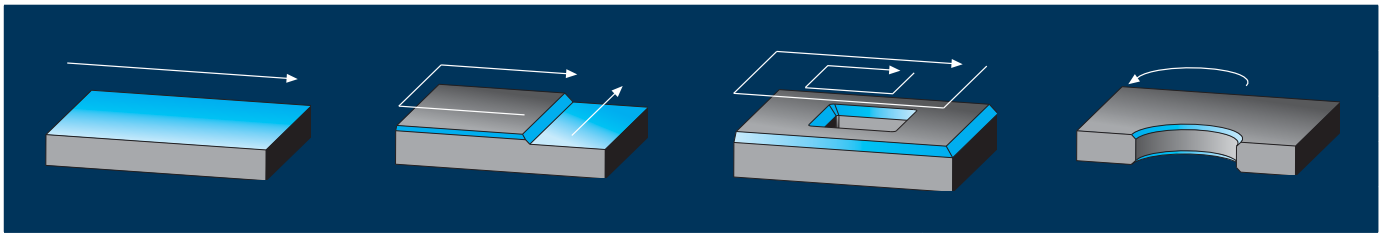


ØD = 50 - 250

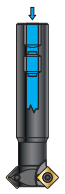
S 4501-8W .. 12



SN..1206 **h = 6**

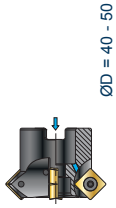


S676 Pag. 350 — S678 Pag. 350 — S614 Pag. 355 — S614.9 Pag. 355



S 676W..

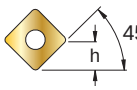
S 676XLZ ..



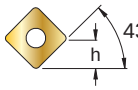
S 678W .. 12

S 614.45W-0-12

S 614.9.45W-0-12

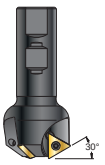


SP..0603 h = 4,0
SP..09T3 h = 5,8
SP..1204 h = 8,0



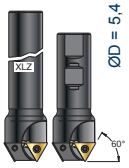
SC..1204 h = 7,8

S616 Pag. 351

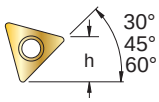


S 616.30 ..

S 616.45 ..
S 6165XLZ.4 ..

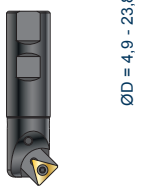


S 616.60 ..
S 616XLZ.60 ..



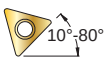
TC..1102 h = 6,9/9,0
TC..16T3 h = 7,3/13,0
TC..2204 h = 13,8

S618.3 Pag. 352 — S618.4 Pag. 353

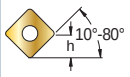


S 618 ..11.3 S 618 ..16.3

S 618 ..12.4



TC..1102
TC..16T3

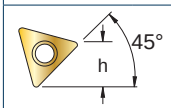


SC..1204

S613 Pag. 354 — S613.9 Pag. 354

S 613.45W-0-16

S 613.9.45W-0-16

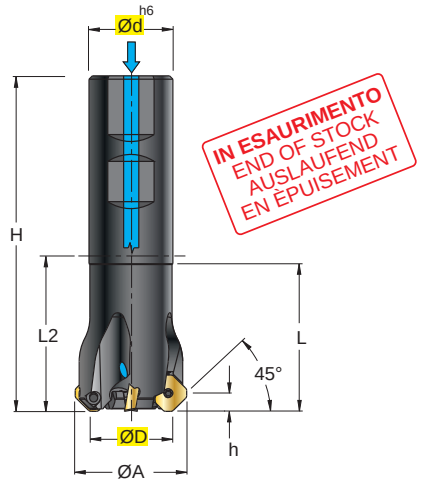


TC..16T3 h = 10

S 406W .. 09

Ø 06-32

γ_p 0°/+12°
γ_f -11°/-6,5°
γ_o -8°/+4°



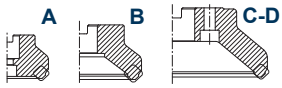
IN ESAURIMENTO
END OF STOCK
AUSLAUFEND
EN ÉPUISEMENT

S 409W .. 09
S 409WF .. 09
S 409GW .. 09

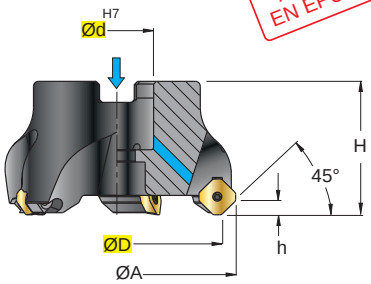
Ø 32-100

γ_p +12°
γ_f -6,5°/-6°
γ_o +4°/+5°

ISO 6462 ...



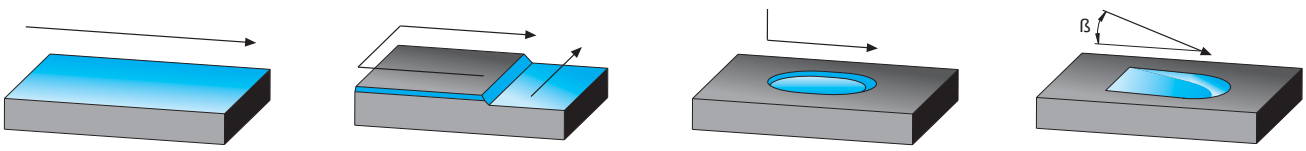
IN ESAURIMENTO
END OF STOCK
AUSLAUFEND
EN ÉPUISEMENT



SDHW 0903 .Z42	
SDNT 0903 .L54	
SDKT 0903 .L56	
SDEX 0903 .L58	

INSERTI - INSERTS
PAG. 453

ART.		(mm) ØD	Ød	ØA	H	h	L	L2	ß	Z	kg	Nm	ISO 6462				
S 406W	006 - 09	6	16	14,2	80	4	32	32	10,5°	1	0,12	1,2÷1,5	–	0903	123006	5608	–
S 406W	012 - 09	12	16	20,2	80	4	32	32	3°	1	0,13	1,2÷1,5	–				
S 406W	016 - 09	16	20	24,2	90	4	40	40	28,5°	2	0,19	1,2÷1,5	–	0903	123008P	5608	–
S 406W	020 - 09	20	20	28,2	90	4	40	40	19,5°	3	0,20	1,2÷1,5	–				
S 406W	025 - 09	25	25	33,2	100	4	44	44	13,5°	4	0,35	1,2÷1,5	–				
S 406W	032 - 09	32	25	40,2	95	4	39	39	9,5°	5	0,36	1,2÷1,5	–				
S 409W	032 - 09	32	16	40,2	40	4	–	–	9,5°	3	0,19	1,2÷1,5	A	0903	123008P	5608P	VBSF08C
S 409W	040 - 09	40	16	48,2	40	4	–	–	7°	4	0,26	1,2÷1,5	A				
S 409W	050 - 09	50	22	58,2	40	4	–	–	5,5°	6	0,37	1,2÷1,5	A	0903	123008P	5608P	VBSF10
S 409W	063 - 09	63	22	71,2	40	4	–	–	4°	8	0,55	1,2÷1,5	A				
S 409W	080 - 09	80	27	88,2	50	4	–	–	3°	10	1,09	1,2÷1,5	A-B	0903	123008P	5608P	VBSF12
S 409W	100 - 09	100	32	108,2	50	4	–	–	2,5°	12	1,74	1,2÷1,5	A-B	0903	123008P	5608P	AL16x35
S 409WF	032 - 09	32	16	40,2	40	4	–	–	9,5°	5	0,19	1,2÷1,5	A	0903	123008P	5608P	VBSF08C
S 409WF	040 - 09	40	16	48,2	40	4	–	–	7°	6	0,26	1,2÷1,5	A				
S 409WF	050 - 09	50	22	58,2	40	4	–	–	5,5°	8	0,36	1,2÷1,5	A	0903	123008P	5608P	VBSF10
S 409WF	063 - 09	63	22	71,2	40	4	–	–	4°	10	0,55	1,2÷1,5	A				
S 409WF	080 - 09	80	27	88,2	50	4	–	–	3°	12	1,20	1,2÷1,5	A-B	0903	123008P	5608P	VBSF12
S 409WF	100 - 09	100	32	108,2	50	4	–	–	2,5°	14	1,76	1,2÷1,5	A-B	0903	123008P	5608P	AL16x35
S 409GW	063 - 09	63	22	71,2	40	4	–	–	4°	5	0,60	1,2÷1,5	A	0903	123008P	5608P	VBSF10
S 409GW	080 - 09	80	27	88,2	50	4	–	–	3°	6	1,06	1,2÷1,5	A-B	0903	123008P	5608P	VBSF12
S 409GW	100 - 09	100	32	108,2	50	4	–	–	2,5°	7	1,71	1,2÷1,5	A-B	0903	123008P	5608P	AL16x35

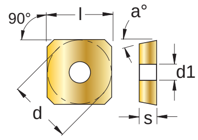


W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.
F = PASSO FINE - FINE PITCH - FEINE ZAHNTEILUNG - PAS FIN

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424



HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	DT61 (HT)	N3105 (HW)	T518M (HC)	F1040 (HC)	l	d	s	d1	r	a°
SDHW 0903 AESN .Z42	●	○																	■				9,52	9,52	3,2	3,4	–	15
SDNT 0903 AESN .L54	●	●	●				●	●	●												■		9,52	9,52	3,2	3,4	–	15
	○	●	●																			■						
SDKT 0903 AESN .L56	○	●	●	○	○	○	●	○	○												■		9,52	9,52	3,2	3,4	–	15
SDEX 0903 AEFN .L58										●	●									■			9,52	9,52	3,2	3,4	–	15

IN ESAURIMENTO
END OF STOCK
AUSLAUFEND
EN ÈPUISEMENT

	DT61	N3105	T518M	F1040
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY		○	●	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	●	○	○	●

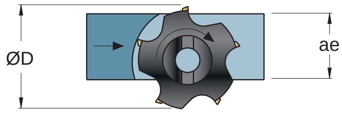
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm¹⁾ HRC²⁾	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 DT61	F1040	N3105	T518M
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,2		260	260		350
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15		250	220		270
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,08	0,15		250	175		200
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,12		230	110		180
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,1					200
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,25					280
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,2					230
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,2					200
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,15	0,25			950	
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,12	0,2			475	
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,12	0,2			950	
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,08					
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050¹⁾	0,05	0,08					
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60²⁾							

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$fz = fz0 \cdot Kae$ = mm

$fn = fz \cdot z$ = mm

$Vf = fz \cdot z \cdot n$ = mm/min



ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

Vc Pag. 440	ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
	Vc (min)---------Vc(max)				

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

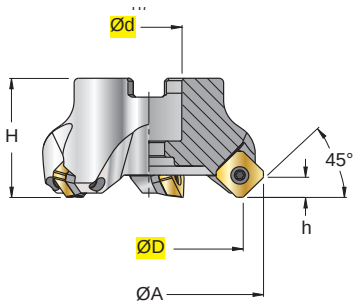
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 438 .. 13
S 438F .. 13
S 438G .. 13

Ø 50-315

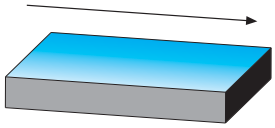
γ_p +20°/+22,5°
γ_f -15°/-7°
γ_o +4°/+10°

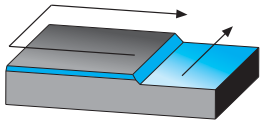


SEEX 13T3.. .M12	
SEKT 13T3.. .L44	
SEKT 13T3.. .L44	
SEKT 13T3.. .L54	
SEKT 13T3.. .L55	
SEKW 13T3.. .L51	
SEKX 1305.. .Z52	 ALTI AVANZAMENTI HIGH FEED

INSERTI - INSERTS
PAG. 454

ART.		(mm) ØD	Ød	ØA	H	h	Z	kg	Nm	ISO 6462			PA13M	BCL7	123512P	5035	5615P	AL10x30
S 438	050 - 13	50	22	63	40	6	4	0,405	3,0÷3,5	A	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL10x30
S 438	063 - 13	63	22	76	40	6	5	0,60	3,0÷3,5	A								
S 438	080 - 13	80	27	93	50	6	6	1,120	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL12x35
S 438	100 - 13	100	32	113	50	6	7	1,786	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL16x35
S 438	125 - 13	125	40	138	63	6	8	3,310	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL20x45
S 438	160 - 13	160	40	173	63	6	10	4,070	3,0÷3,5	C	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	–
S 438	200 - 13	200	60	213	63	6	12	6,800	3,0÷3,5	D								
S 438	250 - 13	250	60	263	63	6	14	9,700	3,0÷3,5	D								
S 438	315 - 13	315	60	334	80	6	18	25,30	3,0÷3,5	E								
S 438F	050 - 13	50	22	63	40	6	5	0,4	3,0÷3,5	A	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL10x30
S 438F	063 - 13	63	22	76	40	6	6	0,6	3,0÷3,5	A								
S 438F	080 - 13	80	27	93	50	6	8	1,10	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL12x35
S 438F	100 - 13	100	32	113	50	6	10	1,74	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL16x35
S 438F	125 - 13	125	40	138	63	6	12	3,250	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL20x45
S 438G	160 - 13	160	40	173	63	6	7	4,3	3,0÷3,5	C	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	–
S 438G	200 - 13	200	60	213	63	6	8	7,0	3,0÷3,5	B								
S 438G	250 - 13	250	60	263	63	6	10	10,0	3,0÷3,5	D								
S 438G	315 - 13	315	60	334	80	6	12	25,6	3,0÷3,5	E								





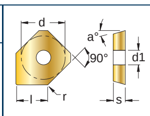
F = PASSO FINE - FINE PITCH - FEINE ZAHNTEILUNG - PAS FIN

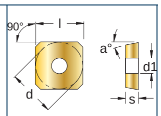
SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



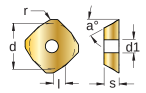


COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	DT63	N3005	N3105	F7010	T3215	T518M	T528N	F1040	F8115	T533	l	d	s	d1	r	a°
SEEX 13T3 AGTR .M12	●						●												■										8,2	13,4	3,97	4,1	1,5	20
							●													■														
SEKT 13T3 AZFN .L44							○	○		●	●										■								13,4	13,4	3,97	4,1	–	20
SEKT 13T3 AZEN .L44				○	○					○	○		●	●													■		13,4	13,4	3,97	4,1	–	20
SEKT 13T3 AZEN .L54	○	●	●	○	○	○	○	○	○															■					13,4	13,4	3,97	4,1	–	20
	○	○	○	●	●	○							○	○	○													■						
	○	●	●	○	○	○																				■								
SEKT 13T3 AZTN .L55							●	●	●	○	○											■							13,4	13,4	3,97	4,1	–	20
SEKW 13T3 AZTN .L51							●	●	●														■						13,4	13,4	3,97	4,1	–	20
SEKX 1305 AGSR .Z52	○	●	●	○	○	○	○	○	○				○	○	○										■				3,9	15,17	5,58	4,1	1,0	20

Dimension columns: l, d, s = SEEX.. (l, d, s) / SEHT.. (d1, r, a°)

> - CON INSERTI **SEKX 1305.. .Z52** PROFONDITÀ MASSIMA DI LAVORO = 2 (mm) PER ALTI AVANZAMENTI
> PROFONDITÀ MASSIMA DI LAVORO = 6 (mm) PER AVANZAMENTI STANDARD
>
> - WITH INSERTS **SEKX 1305.. .Z52** MAXIMUM MACHINING DEPTH = 2 (mm) FOR HIGH FEED
> MAXIMUM MACHINING DEPTH = 6 (mm) FOR STANDARD FEED

	DT63	N3005	N3105	F7010	T3215	T518M	T528N	F1040	F8115	T533
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	○	○	●	●	○	○	●	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	○	●		○	●	●		○



SEKX..

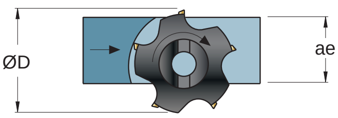
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm1) HRC2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 DT63	N3105	F7010	T3215	F8115	T518M	T533	F1040
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,12	0,15	0,19	280					240	200	190
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,12	0,15	0,19	250					230	180	170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,12	0,15	0,19	220					190	160	150
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,12	0,15	0,19						140	100	80
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,1	0,15	0,17					180	150	180	190
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,15	0,19	220	240	200	270		250		
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,15	0,19	200		180	230		200		
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,15	0,19	220		120	190		180		
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,1	0,13	0,16		500	400		380			
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,1	0,13	0,16		500	400		350			
N	NON METALLICI - PLASTICS	29-30	/	0,1	0,13	0,16		950	950		630			
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,08	0,14						60		50	
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,08	0,14						40		30	
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)											

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$fz = fz0 \cdot Kae$ = mm

$fn = fz \cdot z$ = mm

$Vf = fz \cdot z \cdot n$ = mm/min



ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

	ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440		Vc (min)---------Vc (max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

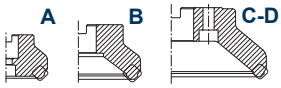
INSERTO SEKX.. IN GRADO T528N / INSERT SEKX.. WITH QUALITY T528N	MATERIALI MATERIALS pag. 1063	P: ACCIAIO NON LEGATO NOT ALLOY STEEL	P: ACCIAIO POCO LEGATO LOW ALLOY STEEL	P: ACCIAIO ALTO LEGATO ALLOY STEEL	P: INOX MARTENSITICO STAINLESS STEEL MART	M: INOX AUST. DUPLEX STAINLESS STEEL AUST	K: GHISA GRIGIA GREY CAST IRON	K: GHISA SFEROIDALE SPHEROIDAL GRAPHITE	K: GHISA MALLEABILE MALLEABLE CAST IRON	S: LEGHE RESIST. CALORE HIG. TEMP. ALLOY	S: TITANIO E SUE LEGHE TITANIUM
ALTI AVANZAMENTI HIGH FEED	fz0 mm ap<2	0,2-0,6	0,2-0,5	0,2-0,4	0,2-0,4	0,2-0,5	0,2-0,6	0,2-0,6	0,2-0,6	0,1-0,4	0,1-0,4
AVANZAMENTI STAND. STANDARD FEED	fz0 mm ap>2	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25		
VELOCITÀ DI TAGLIO CUTTING SPEED	Vc m/min	100-220	80-220	80-180	70-180	60-200	80-180	70-160	70-170	20-60	40-70

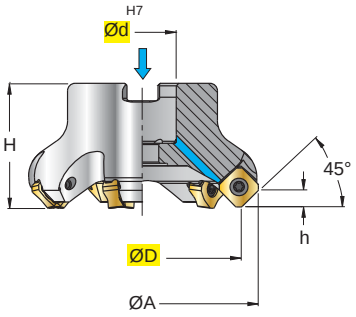
S 4501-8W .. 12

Ø 50-250

γ_p -6°
γ_f -9°/-2°
γ_o -11°/-6°

ISO 6462 ...

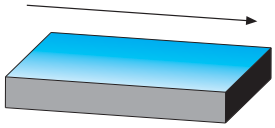


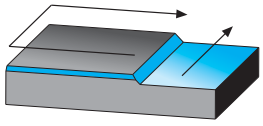


SNEX 1206NN .K11	
SNMX 1206NN .F51	 NEW
SNMX 1206NN .F52	
SNMX 1206NN .F53	 NEW
SNMX 1206NN .F56	
SNMX 1206NN .F58	 NEW
SNMX 120612 .F51	 NEW
SNMX 120612 .F58	 NEW

INSERTI - INSERTS
PAG. 455

ART.	(mm) ØD	Ød	ØA	H	h	Z	kg	Nm	ISO 6462				
S 4501-8W-050-04-12	50	22	63,4	40	6	4	0,41	3,8÷5	A	1206	124011	5620	AL10x30
S 4501-8W-050-06-12	50	22	63,4	40	6	6	0,41	3,8÷5	A				
S 4501-8W-063-06-12	63	22	76,4	40	6	6	0,55	3,8÷5	A				
S 4501-8W-063-08-12	63	22	76,4	40	6	8	0,55	3,8÷5	A				
S 4501-8W-080-07-12	80	27	93,4	50	6	7	0,98	3,8÷5	A-B	1206	124011	5620	AL12x35
S 4501-8W-080-10-12	80	27	93,4	50	6	10	0,98	3,8÷5	A-B				
S 4501-8W-100-08-12	100	32	113,4	50	6	8	1,60	3,8÷5	A-B	1206	124011	5620	AL16x35
S 4501-8W-100-12-12	100	32	113,4	50	6	12	1,60	3,8÷5	A-B				
S 4501-8W-125-10-12	125	40	138,4	63	6	10	3,25	3,8÷5	A-B	1206	124011	5620	AL20x45
S 4501-8W-125-16-12	125	40	138,4	63	6	16	3,26	3,8÷5	A-B				
S 4501-8-160-12-12	160	40	173,4	63	6	12	4,14	3,8÷5	C				
S 4501-8-160-20-12	160	40	173,4	63	6	20	4,16	3,8÷5	C				
S 4501-8-200-18-12	200	60	213,4	63	6	18	6,69	3,8÷5	D				
S 4501-8-200-26-12	200	60	213,4	63	6	26	6,81	3,8÷5	D				
S 4501-8-250-20-12	250	60	263,4	63	6	20	9,40	3,8÷5	D				
S 4501-8-250-30-12	250	60	263,4	63	6	30	9,51	3,8÷5	D				



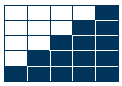


W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

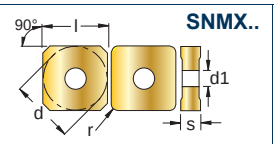


Pag. 424

COD.			P			M			K			N			S			H		
			F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
SNEX	1206NN	.K11	○	○					●	●	○									
SNMX	1206NN	.F51		○	○					●	●									
										●										
SNMX	1206NN	.F52	●	●	●															
SNMX	1206NN	.F53					●	●												
SNMX	1206NN	.F56							○	●	●									
SNMX	1206NN	.F58		●	●															
				●	●		○	○												
SNMX	120612	.F51								●	●									
SNMX	120612	.F58		●	●															
				●	●		○	○												

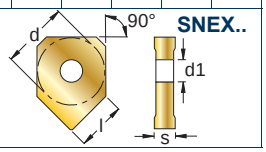
HT	HW	HC							
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS							
		NEW F2740	NEW T3116	NEW F3120	NEW F3420	T1025	NEW T1730	NEW F3010	NEW F1335
			■	■	■	■			
		■							
					■		■		
								■	
			■						
							■		
								■	

l	d	s	d1	r	a°
8,5	12,7	6,35	4,5	–	–
12,7	12,7	6,35	5,4	–	–
12,7	12,7	6,35	5,4	–	–
12,7	12,7	6,35	5,4	–	–
12,7	12,7	6,35	5,4	–	–
12,7	12,7	6,35	5,4	–	–
12,7	12,7	6,35	5,4	1,2	–
12,7	12,7	6,35	5,4	1,2	–



CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ○ ○ ● ● ○ ● ○

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ● ● ● ● ● ● ●



MATERIALI - MATERIALS

Pag. 1063

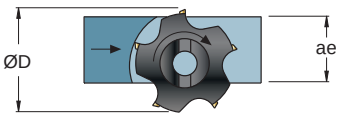
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	M	R	Vc m/min Pag. 440 F3010	T3116	F3120	F3420	T1025	T1730	F1335	F2740
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,12	0,25	0,35	200		200		240	230	220	
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,1	0,2	0,3	200		180		240	190	180	
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,1	0,2	0,3	180		160		220	165	160	
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,15	0,25	120		120		160	150		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,10	0,20							90	100
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,3	0,4	290	310	280	300				
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,12	0,25	0,35	180	180	260	170				
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,12	0,25	0,35	260	280	240	270				
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130											
	RAME E SUE LEGHE - COPPER	26--28	90-110											
	NON METALLICI - PLASTICS	29-30	/											
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320											
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]											
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]											

$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

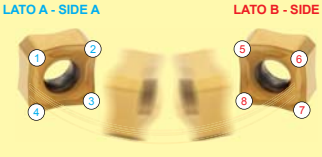


ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



- 8 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 8 "Useful" cutting-edges thanks to two-sided insert
- 8 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 8 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

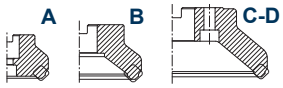
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

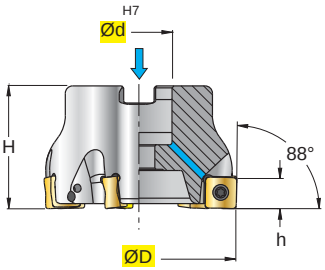
S 8801-8 .. 12
S 8801-8W .. 12

Ø 50-250

γ_p -6°
γ_f -8°/-5,5°
γ_o -8°/-5,5°

ISO 6462 ...

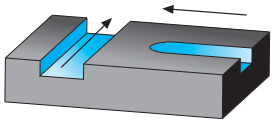




SNMX 1206QNN .F51	 NEW
SNMX 1206QNN .F53	 NEW
SNMX 1206QNN .F58	 NEW
SNMX 120612 .F51	 NEW
SNMX 120612 .F58	 NEW

INSERTI - INSERTS
PAG. 455

ART.	(mm) ØD	Ød	H	h	Z	kg	Nm	ISO 6462				
S 8801-8W-050-04-12	50	22	40	11,5	4	0,27	3,8÷5	A	1206	124011	5620	VBSF10
S 8801-8W-063-06-12	63	22	40	11,5	6	0,46	3,8÷5	A				
S 8801-8W-080-07-12	80	27	50	11,5	7	0,94	3,8÷5	A	1206	124011	5620	AL12x35
S 8801-8W-080-09-12	80	27	50	11,5	9	0,92	3,8÷5	A				
S 8801-8W-100-08-12	100	32	50	11,5	8	1,63	3,8÷5	A-B	1206	124011	5620	AL16x35
S 8801-8W-100-11-12	100	32	50	11,5	11	1,59	3,8÷5	A-B				
S 8801-8W-125-10-12	125	40	63	11,5	10	3,05	3,8÷5	A-B	1206	124011	5620	AL20x45
S 8801-8W-125-14-12	125	40	63	11,5	14	2,99	3,8÷5	A-B				
S 8801-8-160-12-12	160	40	63	11,5	12	4,00	3,8÷5	C	1206	124011	5620	–
S 8801-8-160-18-12	160	40	63	11,5	18	3,91	3,8÷5	C				
S 8801-8-200-14-12	200	60	63	11,5	14	6,61	3,8÷5	D				
S 8801-8-200-22-12	200	60	63	11,5	22	6,48	3,8÷5	D				
S 8801-8-250-16-12	250	60	63	11,5	16	9,68	3,8÷5	D				
S 8801-8-250-24-12	250	60	63	11,5	24	9,52	3,8÷5	D				

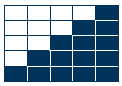


W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

SAU QUALITY TOOLS ENGINEERING

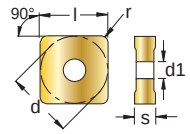
SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -



Pag. 424

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F2740 NEW	HC T3116 NEW	HC F3120 NEW	HC T1730 NEW	HC F1335 NEW	l	d	s	d1	r	a°
SNMX	1206QNN	.F51		○	○					●	●													■				12,7	12,7	6,35	5,4	0,8	–
										●															■								
SNMX	1206QNN	.F53					●	●															■					12,7	12,7	6,35	5,4	0,8	–
SNMX	1206QNN	.F58		●	●																				■			12,7	12,7	6,35	5,4	0,8	–
				●	●		○	○																			■						
SNMX	120612	.F51								●	●													■				12,7	12,7	6,35	5,4	1,2	–
SNMX	120612	.F58		●	●																				■			12,7	12,7	6,35	5,4	1,2	–
				●	●		○	○																			■						
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																							○	○	○		○						
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																							●	●	●	●	●						



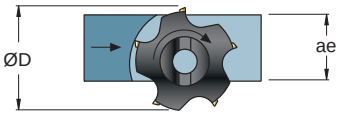
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T3116	T3120	T1730	F1335	F2740
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,12	0,25	0,35		200	230	220	
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,1	0,2	0,3		180	190	180	
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,1	0,2	0,3		160	165	160	
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,15	0,25		120	150		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,10	0,15				90	100
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,3	0,4	310	280			
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,12	0,25	0,35	180	260			
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,12	0,25	0,35	280	240			
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130								
N	RAME E SUE LEGHE - COPPER	26--28	90-110								
N	NON METALLICI - PLASTICS	29-30	/								
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320								
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]								
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]								

$$n = \frac{Vc \cdot 1000}{\O D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

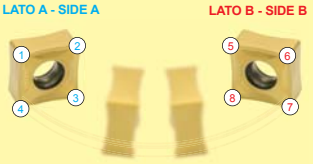


ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

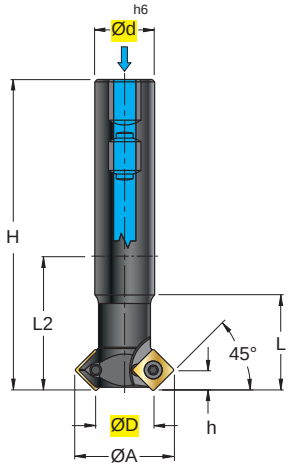


- 8 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 8 "Useful" cutting-edges thanks to two-sided insert
- 8 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 8 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

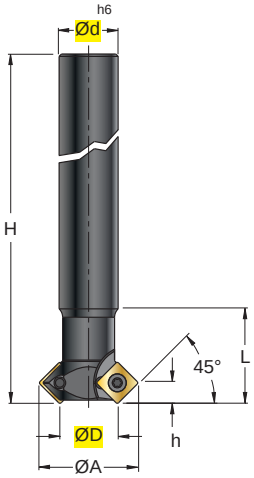
S 676W ..

Ø 09-032



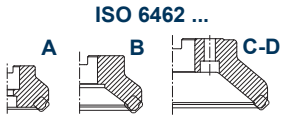
S 676XLZ ..

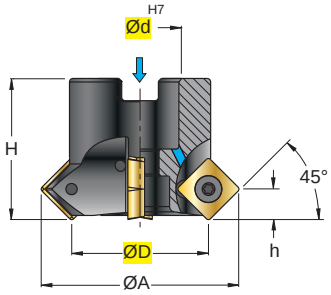
Ø 09-032



S 678W .. 12

Ø 040-050

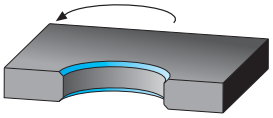


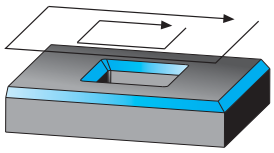


SPMT N54	
SPMW N51	
SPMW N59	

INSERTI - INSERTS
PAG. 457

ART.		(mm) ØD	Ød	ØA	H	h	L	L2	Z	kg	Nm	ISO 6462				
S 676W	009 - 06	9	16	17,0	90	4,0	29	42	1	0,107	1,1÷1,3	–	060304	12256P	5608P	–
S 676W	016 - 09	16	20	28,0	110	5,8	42	60	2	0,209	3,0÷3,5	–	09T308	123509P	5615P	–
S 676W	025 - 12	25	25	41,5	130	8	40	74	2	0,434	4,0÷5,0	–	120408	124510	5620	–
S 676W	032 - 12	32	32	48,5	130	8	50	70	3	0,716	4,0÷5,0	–				
S 676XLZ	009 - 06	9	16	17,0	150	4,0	29	–	1	0,205	1,1÷1,3	–	060304	12256P	5608P	–
S 676XLZ	016 - 09	16	20	28,0	200	5,8	42	–	2	0,444	3,0÷3,5	–	09T308	123509P	5615P	–
S 676XLZ	025 - 12	25	25	41,5	200	8	40	–	2	0,723	4,0÷5,0	–	120408	124510	5620	–
S 676XLZ	032 - 12	32	32	48,5	250	8	50	–	3	1,491	4,0÷5,0	–				
S 678W	040 - 12	40	22	56,0	40	8	–	–	4	0,252	4,0÷5,0	A	120408	124510	5620	VBSF10
S 678W	050 - 12	50	22	66,0	40	8	–	–	5	0,403	4,0÷5,0	A				





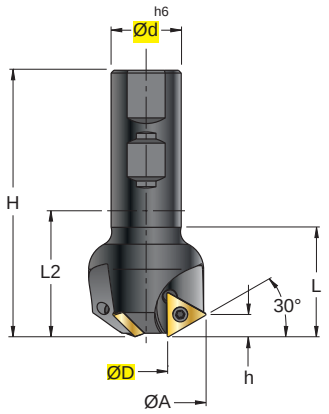
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
XLZ = EXTRALUNGA , STELO CILINDRICO - EXTRALONG , CYLINDRICAL SHANK - EXTRALANG , ZYLINDERSCHAFT - EXTRALONGUE , QUEUE CYLINDRIQUE

PAG. 1001

S 616.30 ..

Ø 16

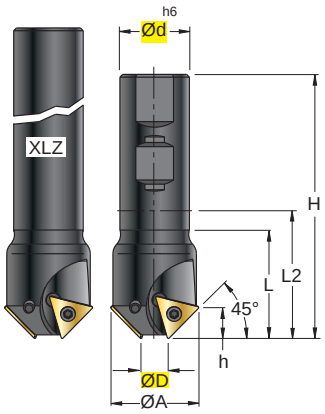
γ_p +10°
γ_f 0°
γ_o +5°



S 616.45 ..

Ø 1,2-25

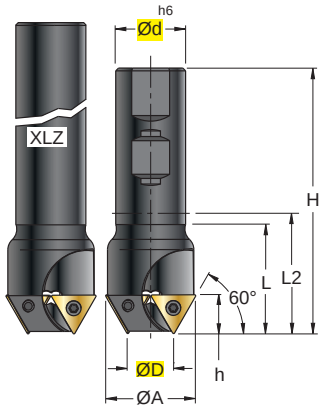
γ_p +29,5°/+6°
γ_f -15°/-5°
γ_o -15°/+1°



S 616.60 ..

Ø 5,4-17

γ_p +8,5°/+4°
γ_f -15°/-7°
γ_o -0,5°/0°



TCMT 110204 .G39	
TCMT S42	
TCMT G52	
TCMT 220408 EN .Z52	

INSERTI - INSERTS
PAG. 457

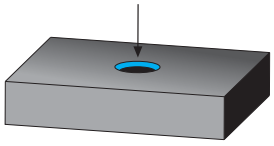
(mm)

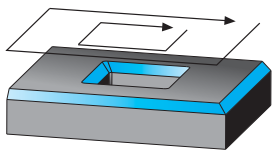
ART.	ØD	Ød	ØA	H	h	L	L2	Z	kg	Nm			
S616.30-16-16 (**)	16,0	25	42,5	95	7,5	39	39	3	0,420	3,8÷5,0	16T3	1240P	5615P
S616.45-1,2-11 (*)	1,2	12	15,0	70	6,9	25	25	1	0,060	1,1÷1,3	1102	12256P	5608P
S616.45-3,5-11 (*) New	3,5	12	16,0	70	6,0	25	25	1	0,060	1,1÷1,3			
S616.45-6,2-11 (*)	6,2	16	21,0	80	7,3	27	32	2	0,120	1,1÷1,3			
S616.45-10,4-16 (**)	10,4	25	32,0	95	10,8	39	39	2	0,352	3,8÷5,0	16T3	1240P	5615P
S616.45-25-22 (***)	25,0	32	53,0	110	13,8	40	50	3	0,694	4,0÷5,0	2204	124510	5620
S616XLZ.45-6,2-11 (*)	6,2	16	21,0	150	7,3	27	–	2	0,231	1,1÷1,3	1102	12256P	5608P
S616XLZ.45-10,4-16 (**)	10,4	25	32,0	150	10,8	39	–	2	0,519	3,8÷5,0	16T3	1240P	5615P
S616.60-5,4-11 (*)	5,4	12	16,0	70	9,0	25	25	1	0,060	1,1÷1,3	1102	12256P	5608P
S616.60-14,4-11 (*)	14,4	16	24,0	80	8,5	27	32	2	0,140	1,1÷1,3			
S616.60-17-16 (**)	17,0	25	32,0	95	13,0	39	39	2	0,326	3,8÷5,0	16T3	1240P	5615P
S616XLZ.60-14,4-11 (*)	14,4	16	24,0	150	8,5	27	–	2	0,248	1,1÷1,3	1102	12256P	5608P
S616XLZ.60-17-16 (**)	17,0	25	32,0	150	13,0	39	–	2	0,543	3,8÷5,0	16T3	1240P	5615P

(*) Misure rilevate con inserto TCMT 110202
Dimensions obtained with insert TCMT 110202
Mit der Wendeplatte TCMT 110202 aufgenommene Bemessungen
Dimensions relevées avec plaquette TCMT 110202

(**) Misure rilevate con inserto TCMT 16T304
Dimensions obtained with insert TCMT 16T304
Mit der Wendeplatte TCMT 16T304 aufgenommene Bemessungen
Dimensions relevées avec plaquette TCMT 16T304

(***) Misure rilevate con inserto TCMT 220408
Dimensions obtained with insert TCMT 220408
Mit der Wendeplatte Tcmt 220408 aufgenommene Bemessungen
Dimensions relevées avec plaquette TCMT 220408

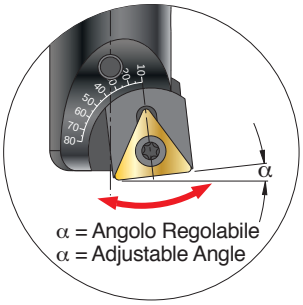


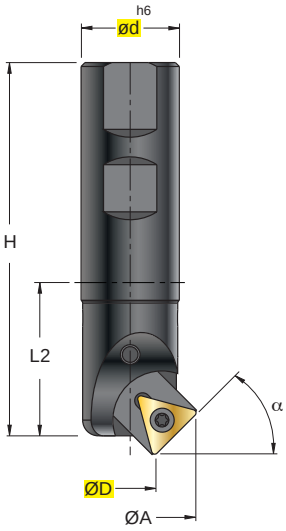


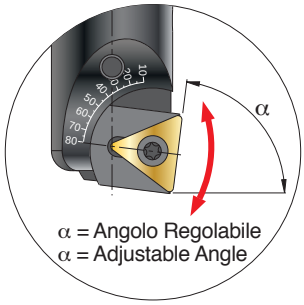
XLZ = EXTRALUNGA , STELO CILINDRICO - EXTRALONG , CYLINDRICAL SHANK - EXTRALANG , ZYLINDERSCHAFT - EXTRALONGUE , QUEUE CYLINDRIQUE

S 618 .. .3

Ø 20-25



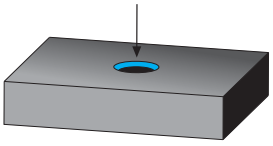


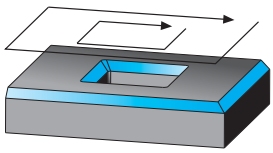


TCMT 110204 .G39	
TCMT S42	
TCMT G52	

INSERTI - INSERTS
PAG. 457

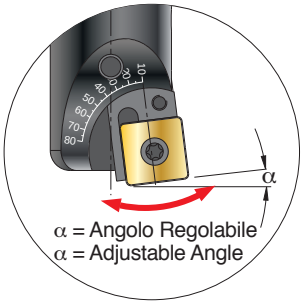
ART.		(mm) ØD	Ød	ØA	H	L2	α	kg	Nm					
S 618	020-11 .3	7,1	20	25,6	100	51	10°	0,213	1,1÷1,3	1102	S11	12256P	5608P	FS243
		8,6	20	26,2	100	51	20°	0,213	1,1÷1,3					
		10,3	20	26,5	100	51	30°	0,213	1,1÷1,3					
		12,2	20	26,4	100	51	40°	0,213	1,1÷1,3					
		13,2	20	26,3	100	51	45°	0,213	1,1÷1,3					
		14,2	20	26,0	100	51	50°	0,213	1,1÷1,3					
		16,2	20	25,3	100	51	60°	0,213	1,1÷1,3					
		18,2	20	24,2	100	51	70°	0,213	1,1÷1,3					
		20,1	20	22,9	100	51	80°	0,213	1,1÷1,3					
S 618	025-16 .3	4,9	25	31,6	100	44	10°	0,310	3,8÷5,0	16T3	S16	12409P	5515P	SM612
		7,1	25	32,6	100	44	20°	0,310	3,8÷5,0					
		9,7	25	33,1	100	44	30°	0,310	3,8÷5,0					
		12,4	25	33,1	100	44	40°	0,310	3,8÷5,0					
		13,8	25	32,9	100	44	45°	0,310	3,8÷5,0					
		15,3	25	32,6	100	44	50°	0,310	3,8÷5,0					
		18,2	25	31,6	100	44	60°	0,310	3,8÷5,0					
		21,0	25	30,1	100	44	70°	0,310	3,8÷5,0					
		23,8	25	28,2	100	44	80°	0,310	3,8÷5,0					

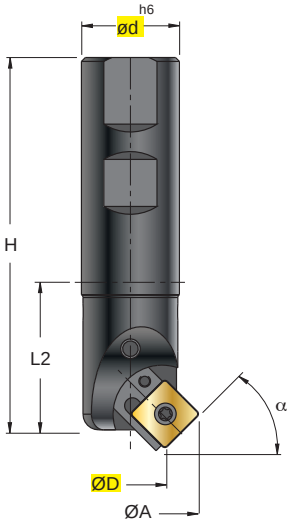


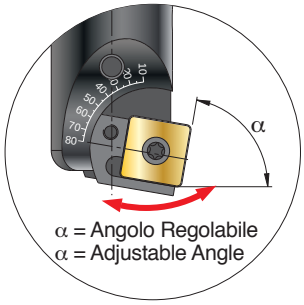


S 618 .. .4

Ø 20



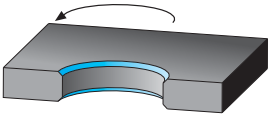


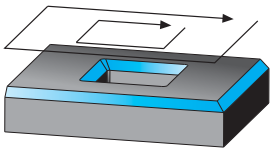


SCMT 1204.. .G52

INSERTI - INSERTS **PAG. 151**

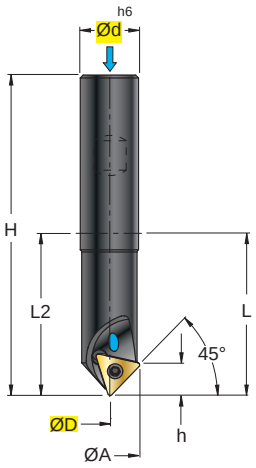
ART.		(mm) ØD	Ød	ØA	H	L2	α	kg	Nm							
S 618	020-12 .4	7,8	20	29,5	100	51	10°	0,213	5,5÷7,0	1204	S12.4	FS243	5620	SM612	5004	5015
		10,5	20	31,0	100	51	20°	0,213	5,5÷7,0							
		13,3	20	32,3	100	51	30°	0,213	5,5÷7,0							
		16,2	20	33,0	100	51	40°	0,213	5,5÷7,0							
		17,7	20	33,1	100	51	45°	0,213	5,5÷7,0							
		19,2	20	33,2	100	51	50°	0,213	5,5÷7,0							
		22,1	20	32,8	100	51	60°	0,213	5,5÷7,0							
		24,8	20	32,0	100	51	70°	0,213	5,5÷7,0							
		27,2	20	30,7	100	51	80°	0,213	5,5÷7,0							





S 613.45W-0-16

Ø 0

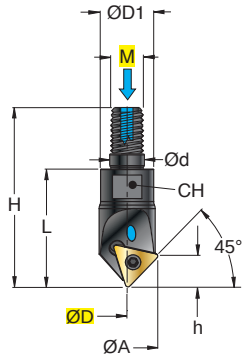


S 613.9.45W-0-16

Ø 0

NEW

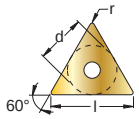
DISPONIBILE DA NOVEMBRE 2017
AVAILABLE FROM NOVEMBER 2017
AB NOVEMBER 2017 LIEFERBAR
DISPONIBLE À PARTIR DE NOVEMBRE 2017



TCMX 16T308ZN .S52

INSERTI - INSERTS
PAG. 457

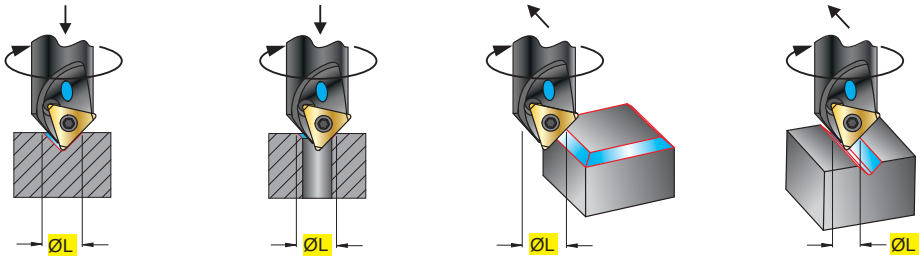
GRADO GRADE	QUICK PICK	MATERIALI MATERIALS P	M	K	N	S	H
F4140		●	●	○	○	●	



mm l	d	S	d1	r
16,5	9,52	3,97	4,4	0,8

(mm)

ART.	ØD	M	Ød	ØD1	ØA	H	h	L	L2	Z	CH	kg	Nm			
S 613.45W-0-16	0	–	20	–	21,6	110	10	50	60	1	–	0,21	3,8÷5,0	16T308	12409P	5615P
S 613.9.45W-0-16	0	10	10,5	18	21,6	59	10	40	–	1	15	0,07	3,8÷5,0	16T308	12409P	5615P



① ② ③ ④

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	Vc m/min	fz mm		
				F4140	①	②-③	④
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	120	0,02-0,04	0,05-0,2	0,03-0,08
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	100	0,02-0,04	0,05-0,2	0,03-0,08
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	80	0,02-0,04	0,05-0,2	0,03-0,08
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	100	0,02-0,04	0,05-0,2	0,03-0,08
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	100	0,03-0,05	0,05-0,2	0,03-0,08
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	120	0,03-0,06	0,05-0,2	0,05-0,1
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	140	0,03-0,06	0,05-0,2	0,05-0,1
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	120	0,03-0,06	0,05-0,2	0,05-0,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	200	0,03-0,06	0,05-0,2	0,08-0,15
	RAME E SUE LEGHE - COPPER	26--28	90-110	150	0,03-0,06	0,05-0,2	0,08-0,15
	NON METALLICI - PLASTICS	29-30	/				
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	50	0,01-0,06	0,03-0,07	0,05-0,1
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	50	0,01-0,06	0,03-0,07	0,05-0,1
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]				

$$n = \frac{Vc \cdot 1000}{ØL \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

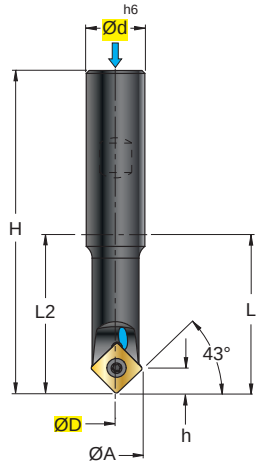
F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

S 614.45W-0-12

Ø 0

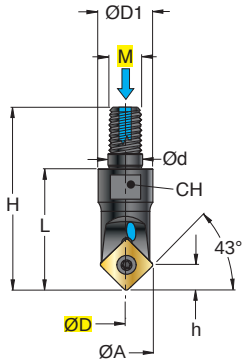


S 614.9.45W-0-12

Ø 0

NEW

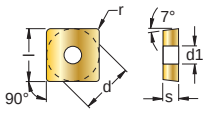
DISPONIBILE DA NOVEMBRE 2017
AVAILABLE FROM NOVEMBER 2017
AB NOVEMBER 2017 LIEFERBAR
DISPONIBLE À PARTIR DE NOVEMBRE 2017



SCMX 120408ZN .S52

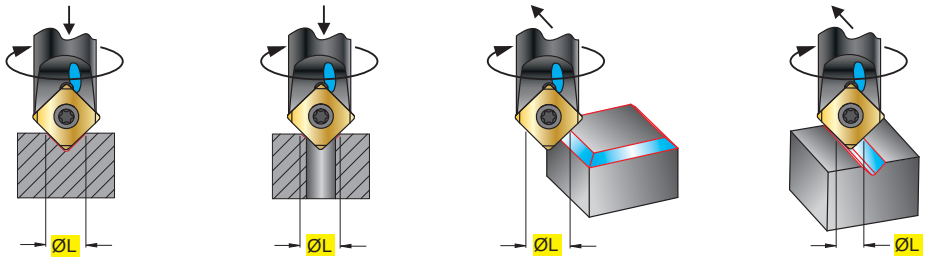
INSERTI - INSERTS
PAG. 453

GRADO GRADE	QUICK PICK	MATERIALI MATERIALS P	M	K	N	S	H
F4140		●	●	○	○	●	



mm l	d	S	d1	r
12,7	12,7	4,76	5,3	0,8

ART.	(mm) ØD	M	Ød	ØD1	ØA	H	h	L	L2	Z	CH	kg	Nm			
S 614.45W-0-12	0	–	20	–	18,4	110	7,8	50	60	1	–	0,21	5,5÷7,0	120408	FS242	5620
S 614.9.45W-0-12	0	10	10,5	18	18,4	59	7,8	40	–	1	15	0,07	5,5÷7,0	120408	FS242	5620



1 2 3 4

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	Vc m/min	fz mm		
				F4140	①	②-③	④
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	120	0,02-0,04	0,05-0,2	0,03-0,08
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	100	0,02-0,04	0,05-0,2	0,03-0,08
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	80	0,02-0,04	0,05-0,2	0,03-0,08
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	100	0,02-0,04	0,05-0,2	0,03-0,08
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	100	0,03-0,05	0,05-0,2	0,03-0,08
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	120	0,03-0,06	0,05-0,2	0,05-0,1
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	140	0,03-0,06	0,05-0,2	0,05-0,1
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	120	0,03-0,06	0,05-0,2	0,05-0,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	200	0,03-0,06	0,05-0,2	0,08-0,15
	RAME E SUE LEGHE - COPPER	26--28	90-110	150	0,03-0,06	0,05-0,2	0,08-0,15
	NON METALLICI - PLASTICS	29-30	/				
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	50	0,01-0,06	0,03-0,07	0,05-0,1
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	50	0,01-0,06	0,03-0,07	0,05-0,1
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]				

$$n = \frac{Vc \cdot 1000}{ØL \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

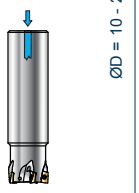
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

SAU
QUALITY TOOLS ENGINEERING

FRESE PER SPALLAMENTI
SHOULDER MILLING CUTTERS
ECKFRÄSER
FRAISES À DRESSER
FRESAS PARA ESCUADRAR

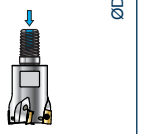
S2000. 86..07 — Pag. 358



S 2000.86W .. 07

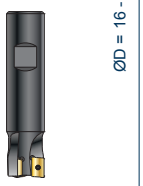
90° h — **BD..0703** — **h = 6**

S2000. 89..07 — Pag. 358

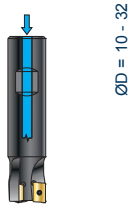


S 2000.89W .. 07

S1086 — Pag. 364



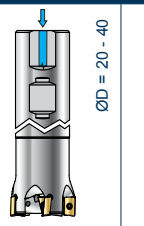
S 1086 .. 10



S 1086W/GW .. 10

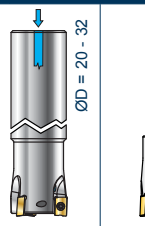
90° h — **AP..1003** — **h = 10**

S9001- 6..-10 — Pag. 370



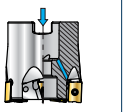
S 9001-6W .. -10

S9001- 6XLW — Pag. 370



S 9001-6XLW .. -10
S 9001-6XLMW .. -10

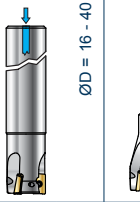
S9001- 8W..-10 — Pag. 370



S 9001-8W .. -10

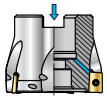
90° h — **LNMM..1006** — **h = 9**

S2000. 86..11 — Pag. 360



S 2000.86W .. 11
S 2000.86MW .. 11
S 2000.86XLW .. 11
S 2000.86XLMW .. 11

S2000. 88..11 — Pag. 360



S 2000.88W .. 11

S2000. 89..11 — Pag. 360

S 2000.89W .. 11

90° h — **BD..11T3** — **h = 11**

S1086 — Pag. 366

S 1086GXL .. 10

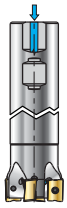
S 1086XLZ .. 10
S 1086XLZM .. 10

S1087 — Pag. 366

S 1087 .. 10

90° h — **AP..1003** — **h = 10**

S9001- 6W..-15 — Pag. 372



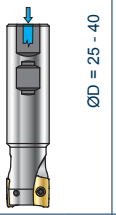
S 9001-6W .. -15

S9001- 8W..-15 — Pag. 372

S 9001-8W .. -15

90° h — **LNMM..1510** — **h = 14**

S2000. 86..17 — Pag. 362

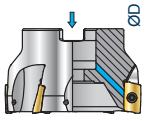


S 2000.86W .. 17

S2000. 86XLMW — Pag. 362

S 2000.86XLMW .. 17

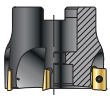
S2000. 88..17 — Pag. 362



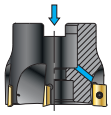
S 2000.88W .. 17

90° h — **BD..1704** — **h = 15,7**

S1088 — Pag. 368



S 1088 .. 10



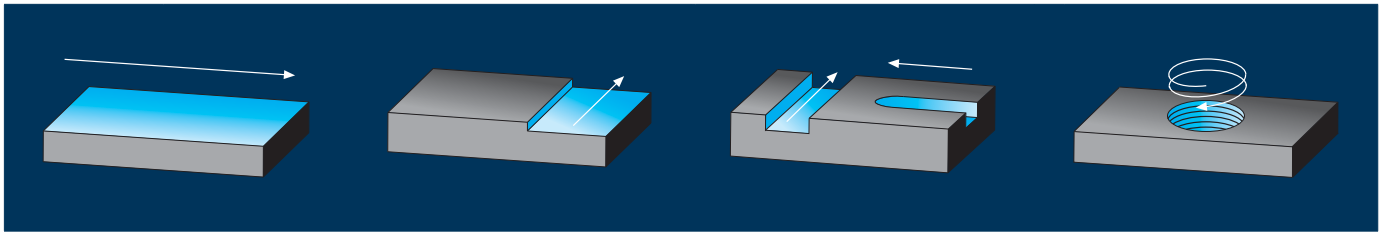
S 1088W/GW .. 10

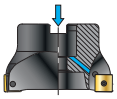
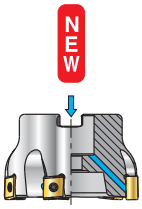
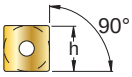
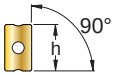
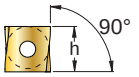
90° h — **AP..1003** — **h = 10**

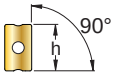
S1089 — Pag. 368

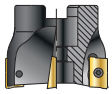
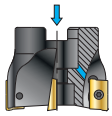
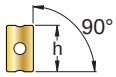
S 1089W ..

90° h — **AP..1003** — **h = 10**



S1296	Pag. 374	S1298	Pag. 374	S1696	Pag. 376	S9003.8W	Pag. 382
 ØD = 32 - 40	 ØD = 32 - 40	 ØD = 50 - 250		 ØD = 25 - 40	 ØD = 25 - 40	 ØD = 50 - 125	
S 1296W .. 12	S 1296XLZ .. 12	S 1298W/GW.. 12		S 1696 .. 16	S 1696W .. 16	S 9003.8W ..13	
 90° h	SD..1205	h = 10,5		 90° h	AP..1604	h = 16	 90° h LNMX 1313 h = 12

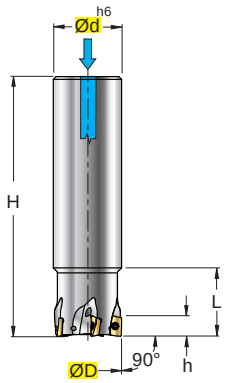
S1696	Pag. 378	S1697	Pag. 378
 ØD = 25 - 40		 ØD = 25 - 40	
S 1696XLZ .. 16 S 1696XLZM .. 16		S 1697 .. 16	
 90° h AP..1604 h = 16			

S1698	Pag. 380
 ØD = 40 - 125	 ØD = 40 - 125
S 1698 .. 16	S 1698W/GW .. 16
 90° h AP..1604 h = 16	

S 2000.86W.. 07

Ø 10-25

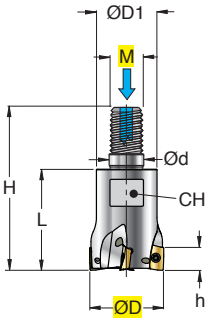
γ_p +3,5°/+7°
γ_f -18,7°/-9,7°
γ_o -18,7°/-9,7°



S 2000.89W.. 07

Ø 18-35

γ_p +7°
γ_f -10,85°/-8,56°
γ_o -10,85°/-8,56°



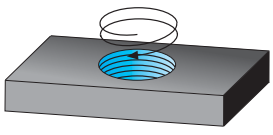
BDMT 0703 .Y42

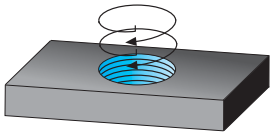
BDMT 0703 .Y52

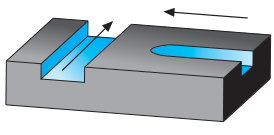
INSERTI - INSERTS
PAG. 450

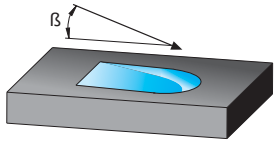
(mm)

ART.	ØD	M	Ød	ØD1	H	h	L	ß	Z	CH	kg	Nm			
S 2000.86W 010-01.07	10	–	10	–	80	6	17	6°	1	–	0,04	0,5÷0,6	0703	122041P	5606P
S 2000.86W 012-02.07	12	–	12	–	80	6	18	3,5°	2	–	0,06	0,5÷0,6			
S 2000.86W 014-02.07	14	–	12	–	80	6	18	3°	2	–	0,07	0,5÷0,6			
S 2000.86W 016-03.07	16	–	16	–	85	6	20	1,8°	3	–	0,12	0,5÷0,6	0703	122041P	5606P
S 2000.86W 020-04.07	20	–	20	–	90	6	20	1,4°	4	–	0,20	0,5÷0,6			
S 2000.86W 025-05.07	25	–	25	–	95	6	25	1,0°	5	–	0,33	0,5÷0,6			
S 2000.89W 018-03.07	18	8	8,5	13	42	6	25	1,6°	3	10	0,04	0,5÷0,6	0703	122041P	5606P
S 2000.89W 022-03.07	22	10	10,5	18	49	6	30	1,2°	3	15	0,07	0,5÷0,6			
S 2000.89W 022-04.07	22	10	10,5	18	49	6	30	1,2°	4	15	0,07	0,5÷0,6			
S 2000.89W 028-05.07	28	12	12,5	21	57	6	35	0,9°	5	17	0,12	0,5÷0,6			
S 2000.89W 035-07.07	35	16	17,0	29	67	6	43	0,7°	7	24	0,26	0,5÷0,6			









W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

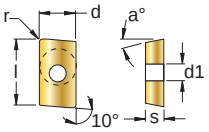
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness +/-

Pag.424

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F3710 NEW	HC F4725 NEW	l	d	s	d1	r	a°
BDMT	070304ER	.Y42	○	●	●	○	●	●	○	●	●				○	○							■	■	6,7	4,6	2,6	2,3	0,4	16
BDMT	070302ER	.Y52	○	●	●	○	●	●																■	6,7	4,6	2,6	2,3	0,2	16
BDMT	070304ER	.Y52	○	●	●	○	●	●	○	●	●				○	○							■	■	6,7	4,6	2,6	2,3	0,4	16



CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ● ●

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ○ ○

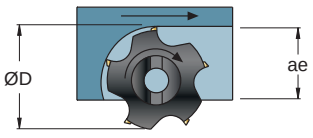
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 F3710	Vc m/min F4725
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,15	0,25		200
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,2		170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16		160
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,12	0,15		140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,08	0,12	0,15		170
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,08	0,18	0,25	190	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2	170	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,15	0,2	150	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130					
N	RAME E SUE LEGHE - COPPER	26--28	90-110					
N	NON METALLICI - PLASTICS	29-30	/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,07	0,1	50	
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,05	0,07	0,1	50	
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]					

$$n = \frac{Vc \cdot 1000}{\text{Ø}D \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

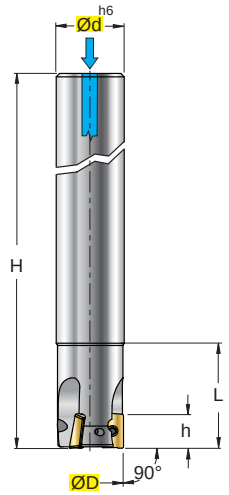
F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

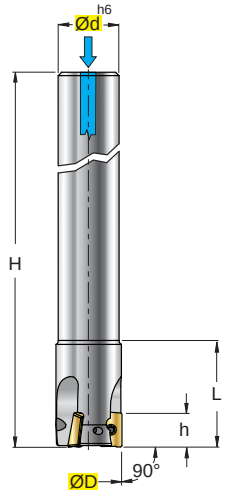
S 2000.86W..11 S2000.86XLW..11

Ø 16-40 γ_p +6,3°/+11,7° γ_f -15°/-7,63° γ_o -15°/-7,63°



S2000.86MW..11 S2000.86XLMW..11

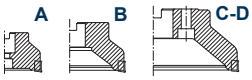
Ø 16-32 γ_p +6,3°/+11,7° γ_f -15°/-7,63° γ_o -15°/-7,63°

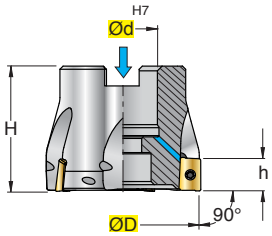


S 2000.88W.. 11

Ø 40-80 γ_p +11°/+11,7° γ_f -7°/-7,5° γ_o -7°/-7,5°

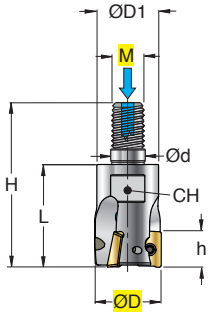
ISO 6462 ...





S 2000.89W.. 11

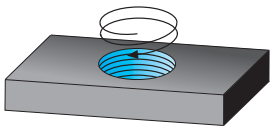
Ø 16-35 γ_p +6,3°/+10,5° γ_f -15°/-8,5° γ_o -15°/-8,5°

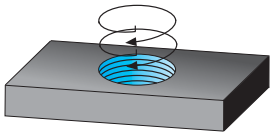


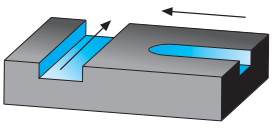
BDGT 11T3 .Y57	
BDMT 11T3 .Y42	
BDMT 11T3 .Y52	

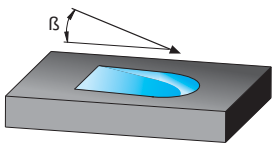
INSERTI - INSERTS PAG. 450

ART.	(mm) ØD	M	Ød	ØD1	H	h	L	ß	Z	CH	kg	Nm	ISO 6462			
S 2000.86W 016-02.11	16	–	16	–	100	10	30	3°	2	–	0,14	1,1÷1,3	–	11T3	122555PK	5608	–
S 2000.86W 020-03.11	20	–	20	–	110	10	26	5°	3	–	0,23	1,1÷1,3	–				
S 2000.86W 025-03.11	25	–	25	–	120	10	32	2,5°	3	–	0,42	1,1÷1,3	–				
S 2000.86W 032-04.11	32	–	32	–	130	10	30	1,5°	4	–	0,73	1,1÷1,3	–				
S 2000.86XLW 020-02-11	20	–	20	–	140	10	60	5°	2	–	0,30	1,1÷1,3	–	11T3	122555PK	5608	–
S 2000.86XLW 025-02-11	25	–	25	–	160	10	60	2,5°	2	–	0,58	1,1÷1,3	–				
S 2000.86XLW 032-02-11	32	–	32	–	200	10	65	1,5°	2	–	1,18	1,1÷1,3	–				
S 2000.86XLW 040-02-11	40	–	32	–	240	10	65	0,7°	2	–	1,62	1,1÷1,3	–				
S 2000.86XLW 040-03-11	40	–	32	–	240	10	65	0,7°	3	–	1,60	1,1÷1,3	–				
S 2000.86MW 016-02.11	16	–	12	–	100	10	32	3°	2	–	0,10	1,1÷1,3	–	11T3	122555PK	5608	–
S 2000.86MW 020-03.11	20	–	16	–	110	10	32	5°	3	–	0,17	1,1÷1,3	–				
S 2000.86MW 025-03.11	25	–	20	–	120	10	34	2,5°	3	–	0,30	1,1÷1,3	–				
S 2000.86MW 032-04.11	32	–	25	–	130	10	43	1,5°	4	–	0,52	1,1÷1,3	–				
S 2000.86XLMW 018-02-11	18	–	16	–	170	10	32	3°	2	–	0,24	1,1÷1,3	–	11T3	122555PK	5608	–
S 2000.86XLMW 020-02-11	20	–	16	–	170	10	32	5°	2	–	0,25	1,1÷1,3	–				
S 2000.86XLMW 020-03-11	20	–	16	–	170	10	32	5°	3	–	0,24	1,1÷1,3	–				
S 2000.86XLMW 022-02-11	22	–	20	–	170	10	32	2,5°	2	–	0,39	1,1÷1,3	–				
S 2000.86XLMW 022-03-11	22	–	20	–	170	10	32	2,5°	3	–	0,39	1,1÷1,3	–				
S 2000.86XLMW 025-02-11	25	–	20	–	210	10	34	2,5°	2	–	0,49	1,1÷1,3	–				
S 2000.86XLMW 025-03-11	25	–	20	–	210	10	34	2,5°	3	–	0,48	1,1÷1,3	–				
S 2000.86XLMW 032-02-11	32	–	25	–	210	10	43	1,5°	2	–	0,78	1,1÷1,3	–				
S 2000.86XLMW 032-03-11	32	–	25	–	210	10	43	1,5°	3	–	0,77	1,1÷1,3	–				
S 2000.88W 040-05.11	40	–	16	–	40	10	–	0,7°	5	–	0,2	1,1÷1,3	A	11T3	122555PK	5608	VBSF08L
S 2000.88W 050-05.11	50	–	22	–	40	10	–	–	5	–	0,3	1,1÷1,3	A	11T3	122555PK	5608	VBSF10
S 2000.88W 063-06.11	63	–	22	–	40	10	–	–	6	–	0,5	1,1÷1,3	A				
S 2000.88W 080-07.11	80	–	27	–	50	10	–	–	7	–	1,0	1,1÷1,3	A	11T3	122555PK	5608	VBSF12
S 2000.89W 016-02.11	16	8	8,5	13	42	10	25	3°	2	10	0,03	1,1÷1,3	–	11T3	122555PK	5608	–
S 2000.89W 020-03.11	20	10	10,5	18	49	10	30	5°	3	15	0,06	1,1÷1,3	–				
S 2000.89W 022-03.11	22	10	10,5	18	49	10	30	2,5°	3	15	0,06	1,1÷1,3	–				
S 2000.89W 025-03.11	25	12	12,5	21	57	10	35	2,5°	3	17	0,10	1,1÷1,3	–				
S 2000.89W 028-03.11	28	12	12,5	21	57	10	35	1,5°	3	17	0,10	1,1÷1,3	–				
S 2000.89W 028-04.11	28	12	12,5	21	57	10	35	1,5°	4	17	0,11	1,1÷1,3	–				
S 2000.89W 032-04.11	32	16	17	29	67	10	43	1,5°	4	24	0,25	1,1÷1,3	–				
S 2000.89W 035-04.11	35	16	17	29	67	10	43	1°	4	24	0,27	1,1÷1,3	–				
S 2000.89W 035-05.11	35	16	17	29	67	10	43	1°	5	24	0,27	1,1÷1,3	–				









W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

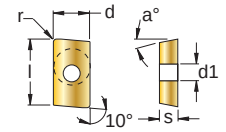
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW N3015	HC F3710 NEW	HC F4725 NEW	l	d	s	d1	r	a°
BDGT	11T302FR	.Y57										●	●	●	○	○	○					□			11,0	6,7	3,8	2,8	0,2	18
BDGT	11T304FR	.Y57										●	●	●	○	○	○					■			11,0	6,7	3,8	2,8	0,4	18
BDGT	11T308FR	.Y57										●	●	●	○	○	○					■			11,0	6,7	3,8	2,8	0,8	18
BDMT	11T304ER	.Y42	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	0,4	18
BDMT	11T308ER	.Y42	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	0,8	18
BDMT	11T308ER	.Y52	○	●	●	○	●	●	○	●	●				○	○							■	■	11,0	6,7	3,8	2,8	0,8	18
BDMT	11T312ER	.Y52	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	1,2	18
BDMT	11T316ER	.Y52	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	1,6	18
BDMT	11T320ER	.Y52	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	2,0	18
BDMT	11T324ER	.Y52	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	2,4	18
BDMT	11T331ER	.Y52	○	●	●	○	●	●																■	11,0	6,7	3,8	2,8	3,1	18
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																						●		●						
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																						○		○						



MATERIALI - MATERIALS

Pag. 1063

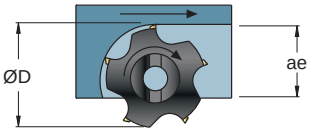
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min N3015	Vc m/min F3710	Vc m/min F4725
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,15	0,25			200
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,2			170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16			160
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,12	0,15			140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,08	0,12	0,15			170
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,08	0,18	0,25		190	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2		170	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,15	0,2		150	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,15	0,2	950		
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,08	0,15	0,2	625		
N	NON METALLICI - PLASTICS	29-30	/	0,08	0,15	0,2	285		
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,10	0,15	80		
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,05	0,10	0,15	80		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]						

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

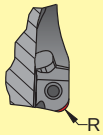


ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



Raggio Inserto Insert Radius (mm)	Raggio Fresa Milling cutter Radius (mm)
1,6	R1,0
2,0	
2,4	R1,2
3,1	R1,6
4,0	R2,5

- Per usare inserti con r≥1,6mm, bisogna modificare il corpo fresa come indicato in figura.
- To use inserts with r≥1,6mm, it is necessary to modify the milling cutting body as illustred in the figure
- Um wendeschneidplatten mit r≥1,6mm, muss der fräserkörper wie in der abbildung angegeben verändert werden
- Pour utiliser les plaquettes avec r≥1,6mm, il faut modifier le corps de la fraise comme il est indiqué dans l'illustration.

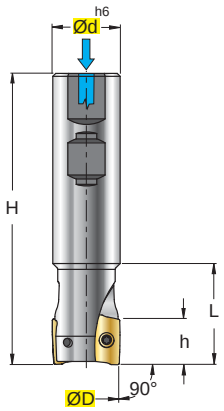
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 2000.86W.. 17

Ø 25-40

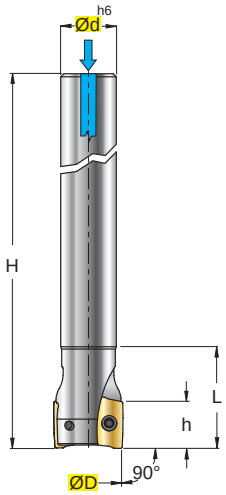
γ_p +7°/+10°
γ_f -11°/-7°
γ_o -11°/-7°



S 2000.86XLMW.. 17

Ø 25-40

γ_p +7°/+10°
γ_f -11°/-7°
γ_o -11°/-7°

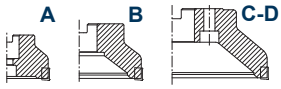


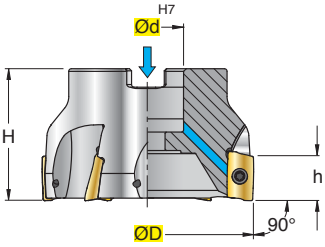
S 2000.88W.. 17

Ø 40-100

γ_p +10°
γ_f -7°
γ_o -7°

ISO 6462 ...



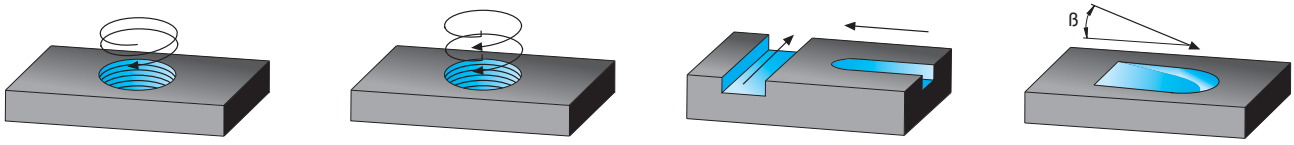


BDGT 1704 .Y57	
BDMT 1704 .Y42	
BDMT 1704 .Y52	

INSERTI - INSERTS **PAG. 450**

(mm)

ART.	ØD	M	Ød	ØD1	H	h	L	ß	Z	CH	kg	Nm	ISO 6462				
S 2000.86W 025-02.17	25	–	25	–	92	15,7	36	4,5°	2	–	0,28	3,8÷5,0	–	1704	C04008P	5615P	–
S 2000.86W 032-03.17	32	–	32	–	100	15,7	40	2,5°	3	–	0,50	3,8÷5,0	–				
S 2000.86W 040-04.17	40	–	32	–	110	15,7	50	2°	4	–	0,63	3,8÷5,0	–				
S 2000.86XLMW 025-02-17	25	–	20	–	210	15,7	60	4,5°	2	–	0,48	3,8÷5,0	–	1704	C04008P	5615P	–
S 2000.86XLMW 032-03-17	32	–	25	–	250	15,7	65	2,5°	3	–	0,90	3,8÷5,0	–				
S 2000.86XLMW 040-04-17	40	–	32	–	250	15,7	65	2°	4	–	1,49	3,8÷5,0	–				
S 2000.88W 040-04.17	40	–	16	–	40	15,7	–	2°	4	–	0,17	3,8÷5,0	A	1704	C04008P	5615P	VBSF08L
S 2000.88W 050-04.17	50	–	22	–	40	15,7	–	1,5°	4	–	0,29	3,8÷5,0	A	1704	C04008P	5615P	VBSF10
S 2000.88W 050-05.17 New	50	–	22	–	40	15,7	–	1,5°	5	–	0,27	3,8÷5,0	A				
S 2000.88W 063-05.17	63	–	22	–	40	15,7	–	1°	5	–	0,51	3,8÷5,0	A				
S 2000.88W 063-06.17 New	63	–	22	–	40	15,7	–	1°	6	–	0,49	3,8÷5,0	A				
S 2000.88W 080-06.17	80	–	27	–	50	15,7	–	1°	6	–	0,97	3,8÷5,0	A-B	1704	C04008P	5615P	AL12x35
S 2000.88W 100-07.17	100	–	32	–	50	15,7	–	0,5°	7	–	1,44	3,8÷5,0	A-B	1704	C04008P	5615P	AL16x35



W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

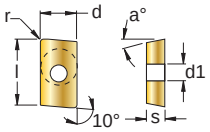
PAG. 1001

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424



COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW N3015	HC F3710 NEW	HC F4725 NEW	l	d	s	d1	r	a°
BDGT	170404FR	.Y57										●	●	●	○	○	○					■			17,0	9,6	4,9	4,4	0,4	18
BDGT	170408FR	.Y57										●	●	●	○	○	○					■			17,0	9,6	4,9	4,4	0,8	18
BDGT	170420FR	.Y57										●	●	●	○	○	○					■			17,0	9,6	4,9	4,4	2,0	18
BDGT	170431FR	.Y57										●	●	●	○	○	○					■			17,0	9,6	4,9	4,4	3,1	18
BDMT	170404ER	.Y42	○	●	●	○	●	●																■	17,0	9,6	4,9	4,4	0,4	18
BDMT	170408ER	.Y42	○	●	●	○	●	●																■	17,0	9,6	4,9	4,4	0,8	18
BDMT	170404ER	.Y52							○	●	●				○	○							■		17,0	9,6	4,9	4,4	0,4	18
BDMT	170408ER	.Y52	○	●	●	○	●	●	○	●	●				○	○							■	■	17,0	9,6	4,9	4,4	0,8	18
BDMT	170412ER	.Y52	○	●	●	○	●	●	○	●	●				○	○							■	■	17,0	9,6	4,9	4,4	1,2	18
BDMT	170416ER	.Y52	○	●	●	○	●	●	○	●	●				○	○							■	■	17,0	9,6	4,9	4,4	1,6	18
BDMT	170420ER	.Y52	○	●	●	○	●	●																■	17,0	9,6	4,9	4,4	2,0	18
BDMT	170424ER	.Y52	○	●	●	○	●	●																■	17,0	9,6	4,9	4,4	2,4	18
BDMT	170431ER	.Y52	○	●	●	○	●	●																■	17,0	9,6	4,9	4,4	3,1	18
BDMT	170440ER	.Y52	○	●	●	○	●	●																■	17,0	9,6	4,9	4,4	4,0	18
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																						●	●	●						
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																						○	○	○						

MATERIALI - MATERIALS

Pag. 1063

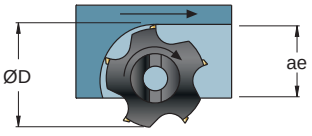
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 N3015	F3710	F4725
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,15	0,25			200
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,2			170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16			160
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,12	0,15			140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,08	0,12	0,15			170
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,08	0,18	0,25		190	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2		170	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,15	0,2		150	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,15	0,2	950		
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,08	0,15	0,2	625		
N	NON METALLICI - PLASTICS	29-30	/	0,08	0,15	0,2	285		
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,10	0,15	80		
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,05	0,10	0,15	80		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]						

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

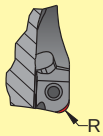


ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



Raggio Inserto Insert Radius (mm)	Raggio Fresa Milling cutter Radius (mm)
1,6	R1,0
2,0	
2,4	R1,2
3,1	R1,6
4,0	R2,5

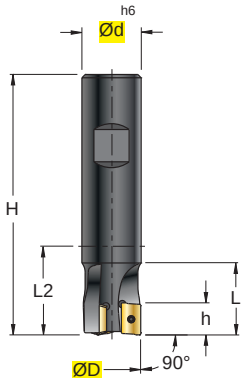
- Per usare inserti con r≥1,6mm, bisogna modificare il corpo fresa come indicato in figura.
- To use inserts with r≥1,6mm, it is necessary to modify the milling cutting body as illustred in the figure
- Um wendeschneidplatten mit r≥1,6mm, muss der fräserkörper wie in der abbildung angegeben verändert werden
- Pour utiliser les plaquettes avec r≥1,6mm, il faut modifier le corps de la fraise comme il est indiqué dans l'illustration.

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 1086 .. 10

Ø 16-32

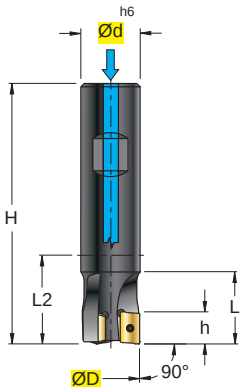
γ_p -1,5°/+10°
γ_f -21°/-11,5°
γ_o -21°/-11,5°



S 1086W/GW..10

Ø 10-32

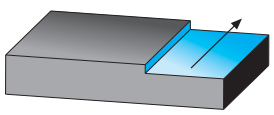
γ_p -1,5°/+10°
γ_f -21°/-11,5°
γ_o -21°/-11,5°

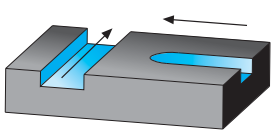


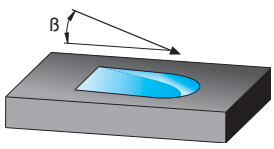
APKT 1003 .I52	
APKT 1003 .L52	
APKT 1003 .S52	
APKX 1003 .S52	
APHT 1003 .Z53	
APKT 1003 .Z54	
APHT 1003 .S57	

INSERTI - INSERTS
PAG. 448

ART.		(mm) ØD	Ød	H	h	L	L2	Z	ß	kg	Nm			
S 1086	016 - 10	16	16	85	10	25	37	2	3,5°	0,11	1,1÷1,3	1003	12255P	5608P
S 1086	020 - 10	20	20	90	10	25	40	3	1,5°	0,18	1,1÷1,3			
S 1086	025 - 10	25	25	95	10	25	39	4	0,9°	0,30	1,1÷1,3			
S 1086	032 - 10	32	25	95	10	25	39	5	0,6°	0,33	1,1÷1,3			
S 1086W	010 - 10	10	16	80	10	24	32	1	11°	0,09	1,1÷1,3	1003	12255P	5608P
S 1086W	011 - 10	11	16	80	10	24	32	1	11°	0,10	1,1÷1,3			
S 1086W	012 - 10	12	16	80	10	24	32	1	9°	0,10	1,1÷1,3			
S 1086W	013 - 10	13	16	80	10	24	32	1	8,5°	0,10	1,1÷1,3			
S 1086W	014 - 10	14	16	80	10	25	32	1	8°	0,10	1,1÷1,3			
S 1086W	015 - 10	15	16	85	10	25	37	2	4°	0,10	1,1÷1,3			
S 1086W	016 - 10	16	16	85	10	25	37	2	3,5°	0,11	1,1÷1,3			
S 1086W	017 - 10	17	20	85	10	25	35	2	3°	0,16	1,1÷1,3			
S 1086W	018 - 10	18	20	85	10	26,5	35	2	2,5°	0,16	1,1÷1,3			
S 1086W	019 - 10	19	20	90	10	25	40	2	2°	0,18	1,1÷1,3			
S 1086W	020 - 10	20	20	90	10	25	40	3	1,5°	0,18	1,1÷1,3			
S 1086W	022 - 10	22	25	95	10	25	39	3	1,5°	0,29	1,1÷1,3			
S 1086W	024 - 10	24	25	95	10	25	39	4	1°	0,29	1,1÷1,3			
S 1086W	025 - 10	25	25	95	10	25	39	4	0,9°	0,30	1,1÷1,3			
S 1086W	028 - 10	28	25	95	10	25	39	4	0,9°	0,32	1,1÷1,3			
S 1086W	029 - 10	29	25	95	10	25	39	4	0,8°	0,32	1,1÷1,3			
S 1086W	030 - 10	30	25	95	10	25	39	4	0,8°	0,33	1,1÷1,3			
S 1086W	032 - 10	32	25	95	10	25	39	5	0,6°	0,33	1,1÷1,3			
S 1086GW	020 - 10	20	20	90	10	25	40	2	1,5°	0,18	1,1÷1,3	1003	12255P	5608P
S 1086GW	025 - 10	25	25	95	10	25	39	3	0,9°	0,30	1,1÷1,3			
S 1086GW	032 - 10	32	25	95	10	25	39	4	0,6°	0,33	1,1÷1,3			







W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.

SAU QUALITY TOOLS ENGINEERING

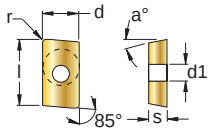
SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.				P			M			K			N			S			H		
				F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
APKT	1003	PDR	.I52	●	●	○	○	○	○	○	○	○				○	○	○			
APKT	1003	PDER	.L52	○	●	●	○	●	○	○	○	○				○	●	○			
APKT	1003	PDTR	.S52	○	●	●	○	●	●	○	●	●		○			○				
APKX	1003	PDR	.S52	○	●	●	○	●	●	○	○	○					○			○	
APKT	1003	PDSR	.Z54	○	●	●	○	●	○												
APKT	1003	PDER	.Z54		●	●															
APHT	100312SR		.Z53	○	○	○	●	●	●								○				
APHT	100320SR		.Z53	○	○	○	●	●	●								○				
APHT	1003	PDFR	.S57							●	●	●	●	●	●	○	○	○			

HT	HW	HC									
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS									
	T120	F2140 (NEW)	T516	T526	T528N	T530	T525	T533	F1035		
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	○	●	●	○	○	●	○	○	●		
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	●	○	●	●	○	○	○	○		



l	d	s	d1	r	a°
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	1,2	11
10,5	6,70	3,50	2,8	2,0	11
10,5	6,70	3,50	2,8	0,5	11

MATERIALI - MATERIALS

Pag. 1063

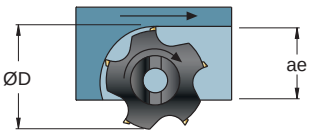
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	M	R	Vc m/min Pag. 440 T120	T516	T525	T526	T528N	T530	T533	F1035	F2140		
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,15	0,2			250	220	220	230	240	125	200		
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,1	0,15			200	160	160	180	150	120	170		
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,1	0,15			170	150	150	150	140	100	120		
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,08	0,1			150	140	140	140	160	100	120		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,08	0,1	100		140	130	120	120	140		140		
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,15	0,2	120	250	200		180	160	160				
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,06	0,12	0,15	110	200	180		160	150	150				
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,06	0,12	0,15	120	220	200		170	160	160				
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,15	0,2	500					600					
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,12	0,18	300					300					
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,12	0,18											
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,1	20		40		40	40	50		50		
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,06	0,08	0,1	30		50		60	50	50		50		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,06	0,08	0,1			40								

$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			

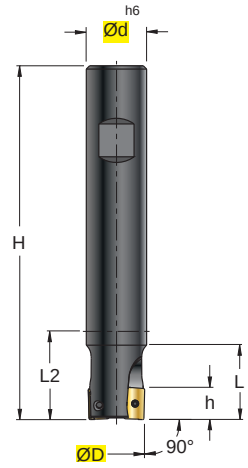
F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

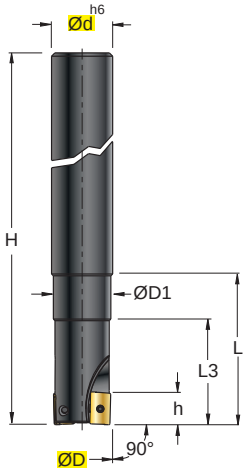
S 1086GXL..10

Ø 20-40 — γ_p +7°/+10° — γ_f -13,5°/-10° — γ_o -13,5°/-10°



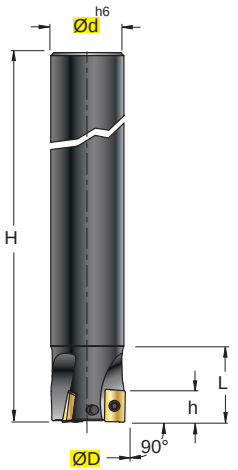
S 1086XLZ..10

Ø 10-32 — γ_p -1,5°/+10° — γ_f -21°/-11,5° — γ_o -21°/-11,5°



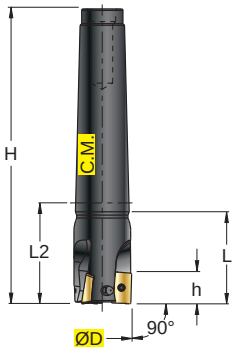
S 1086XLZM..10

Ø 16-25 — γ_p -1,5°/+10° — γ_f -21°/-11,5° — γ_o -21°/-11,5°



S 1087..10

Ø 20-32 — γ_p +7°/+10° — γ_f -13,5°/-11,5° — γ_o -13,5°/-11,5°

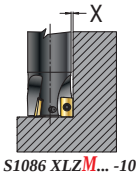


APKT 1003 .I52	
APKT 1003 .L52	
APKT 1003 .S52	
APKX 1003 .S52	
APHT 1003 .Z53	
APKT 1003 .Z54	
APHT 1003 .S57	

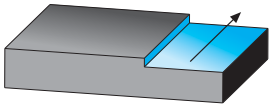
INSERTI - INSERTS
PAG. 448

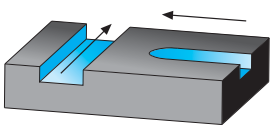
(mm)

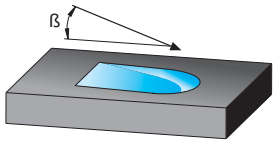
ART.		ØD	Ød/CM	ØD1	H	h	L	L2	L3	ß	Z	X	kg	Nm			
S 1086GXL	020 - 10	20	20	–	130	10	40	80	–	1,5°	2	–	0,29	1,1÷1,3	1003	12255P	5608P
S 1086GXL	025 - 10	25	25	–	140	10	40	84	–	0,9°	3	–	0,47	1,1÷1,3			
S 1086GXL	032 - 10	32	32	–	160	10	50	100	–	0,6°	4	–	0,93	1,1÷1,3			
S 1086GXL	040 - 10	40	32	–	200	10	60	140	–	–	5	–	1,23	1,1÷1,3			
S 1086XLZ	010 - 10	10	20	11,5	200	10	50	–	18	11°	1	–	0,40	1,1÷1,3	1003	12255P	5608P
S 1086XLZ	011 - 10	11	20	13,5	200	10	50	–	19	11°	1	–	0,41	1,1÷1,3			
S 1086XLZ	012 - 10	12	20	13,5	200	10	50	–	21	9°	1	–	0,41	1,1÷1,3			
S 1086XLZ	013 - 10	13	20	15,0	200	10	50	–	22	8,5°	1	–	0,42	1,1÷1,3			
S 1086XLZ	014 - 10	14	20	15,5	200	10	50	–	21	8°	1	–	0,43	1,1÷1,3			
S 1086XLZ	015 - 10	15	20	16,0	200	10	50	–	23	4°	2	–	0,42	1,1÷1,3			
S 1086XLZ	016 - 10	16	20	17,0	200	10	50	–	35	3,5°	2	–	0,43	1,1÷1,3			
S 1086XLZ	017 - 10	17	20	18,0	200	10	50	–	35	3°	2	–	0,44	1,1÷1,3			
S 1086XLZ	018 - 10	18	20	19,0	200	10	50	–	35	2,5°	2	–	0,44	1,1÷1,3			
S 1086XLZ	019 - 10	19	20	19,0	200	10	50	–	35	2°	2	–	0,45	1,1÷1,3			
S 1086XLZ	020 - 10	20	20	–	200	10	50	–	50	1,5°	2	–	0,46	1,1÷1,3			
S 1086XLZ	022 - 10	22	25	–	220	10	50	–	50	1,5°	2	–	0,76	1,1÷1,3			
S 1086XLZ	024 - 10	24	25	–	220	10	50	–	50	1°	3	–	0,79	1,1÷1,3			
S 1086XLZ	025 - 10	25	25	–	220	10	50	–	50	0,9°	3	–	0,80	1,1÷1,3			
S 1086XLZ	028 - 10	28	32	–	250	10	50	–	50	0,9°	3	–	1,44	1,1÷1,3			
S 1086XLZ	029 - 10	29	32	–	250	10	50	–	50	0,8°	3	–	1,46	1,1÷1,3			
S 1086XLZ	030 - 10	30	32	–	250	10	50	–	50	0,8°	4	–	1,46	1,1÷1,3			
S 1086XLZ	032 - 10	32	32	–	250	10	50	–	50	0,6°	4	–	1,50	1,1÷1,3			
S 1086XLZM	016 - 10	16	15	–	150	10	25	–	–	1,5°	2	0,5	0,20	1,1÷1,3	1003	12255P	5608P
S 1086XLZM	020 - 10	20	19	–	160	10	25	–	–	1,5°	2	0,5	0,34	1,1÷1,3			
S 1086XLZM	025 - 10	25	24	–	200	10	25	–	–	0,9°	3	0,5	0,68	1,1÷1,3			
S 1087	020 - 10	20	CM2	–	100	10	31	36	–	1,5°	3	–	0,14	1,1÷1,3	1003	12255P	5608P
S 1087	025 - 10	25	CM3	–	124	10	38	43	–	0,9°	4	–	0,33	1,1÷1,3			
S 1087	032 - 10	32	CM3	–	124	10	38	43	–	0,6°	5	–	0,35	1,1÷1,3			



S1086 XLZM... -10







XLZ = EXTRALUNGA , STELO CILINDRICO - EXTRALONG , CYLINDRICAL SHANK - EXTRALANG , ZYLINDERSCHAFT - EXTRALONGUE , QUEUE CYLINDRIQUE
GXL = PASSO GROSSO EXTRALUNGA - EXTRALONG WITH LARGE TEETH DISTANCE - EXTRALANG MIT NORMAL ZUHNTEILUNG - EXTRALONGUE AVEC GRANDE DISTANCE DENTS

PAG. 1001

SAU QUALITY TOOLS ENGINEERING

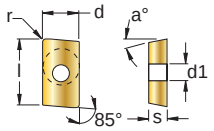
SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.				P			M			K			N			S			H		
				F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
APKT	1003	PDR	.I52	●	●	○	○	○	○	○	○	○				○	○	○			
APKT	1003	PDER	.L52	○	●	●	○	●	○	○	○	○				○	●	○			
APKT	1003	PDTR	.S52	○	●	●	○	●	●	○	●	●		○			○				
APKX	1003	PDR	.S52	○	●	●	○	●	●	○	○	○					○			○	
APKT	1003	PDSR	.Z54	○	●	●	○	●	○												
APKT	1003	PDER	.Z54		●	●															
APHT	100312SR		.Z53	○	○	○	●	●	●								○				
APHT	100320SR		.Z53	○	○	○	●	●	●								○				
APHT	1003	PDFR	.S57							●	●	●	●	●	●	○	○	○			

HT	HW	HC									
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS									
	T120	NEW F2140	T516	T526	T528N	T530	T525	T533	F1035		
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	○	●	●	○	○	●	○	○	●		
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	●	○	●	●	○	○	○	○		



l	d	s	d1	r	a°
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	1,2	11
10,5	6,70	3,50	2,8	2,0	11
10,5	6,70	3,50	2,8	0,5	11

MATERIALI - MATERIALS

Pag. 1063

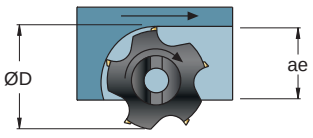
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	M	R	Vc m/min Pag. 440 T120	T516	T525	T526	T528N	T530	T533	F1035	F2140		
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,15	0,2			250	220	220	230	240	125	200		
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,1	0,15			200	160	160	180	150	120	170		
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,1	0,15			170	150	150	150	140	100	120		
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,08	0,1			150	140	140	140	160	100	120		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,08	0,1	100		140	130	120	120	140		140		
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,15	0,2	120	250	200		180	160	160				
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,06	0,12	0,15	110	200	180		160	150	150				
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,06	0,12	0,15	120	220	200		170	160	160				
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,15	0,2	500					600					
	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,12	0,18	300					300					
	NON METALLICI - PLASTICS	29-30	/	0,06	0,12	0,18											
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,1	20		40		40	40	50		50		
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,06	0,08	0,1	30		50		60	50	50		50		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,06	0,08	0,1			40								

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

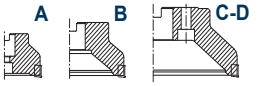
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

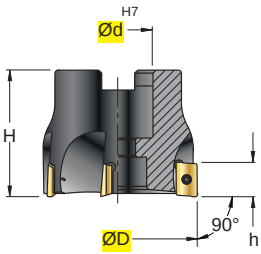
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 1088 .. 10

Ø 40-63 — γ_p +11°/+12° — γ_f -10°/-8° — γ_o -10°/-8°

ISO 6462 ...

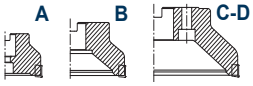


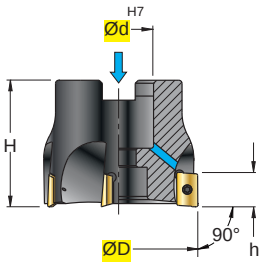


S 1088W .. 10
S 1088GW .. 10

Ø 40-63 — γ_p +11°/+12° — γ_f -10°/-8° — γ_o -10°/-8°

ISO 6462 ...

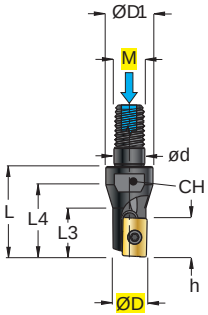




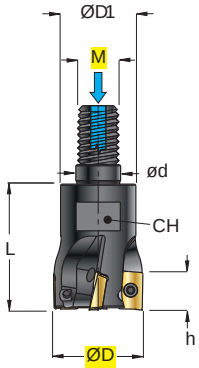
S 1089W ..

Ø 10-32 — γ_p -1,5°/+10° — γ_f -21°/-11,5° — γ_o -21°/-11,5°

FORM A



FORM B

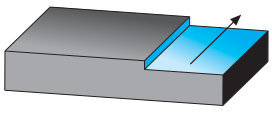


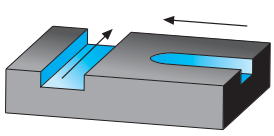
APKT 1003 .I52	
APKT 1003 .L52	
APKT 1003 .S52	
APKX 1003 .S52	
APHT 1003 .Z53	
APKT 1003 .Z54	
APHT 1003 .S57	

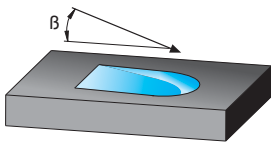
INSERTI - INSERTS
PAG. 448

(mm)

ART.		FORM	ØD	M	Ød	ØD1	H	h	L	L3	L4	ß	Z	CH	kg	Nm	ISO 6462				
S 1088	040 - 10	–	40	–	22	–	40	10	–	–	–	–	6	–	0,210	1,1÷1,3	A	1003	12255P	5608P	VBSF10
S 1088	050 - 10	–	50	–	22	–	40	10	–	–	–	–	7	–	0,320	1,1÷1,3	A				
S 1088	063 - 10	–	63	–	22	–	40	10	–	–	–	–	8	–	0,550	1,1÷1,3	A				
S 1088W	040 - 10	–	40	–	22	–	40	10	–	–	–	–	6	–	0,210	1,1÷1,3	A	1003	12255P	5608P	VBSF10
S 1088W	050 - 10	–	50	–	22	–	40	10	–	–	–	–	7	–	0,320	1,1÷1,3	A				
S 1088W	063 - 10	–	63	–	22	–	40	10	–	–	–	–	8	–	0,350	1,1÷1,3	A				
S 1088GW	040 - 10	–	40	–	22	–	40	10	–	–	–	–	5	–	0,210	1,1÷1,3	A	1003	12255P	5608P	VBSF10
S 1088GW	050 - 10	–	50	–	22	–	40	10	–	–	–	–	6	–	0,320	1,1÷1,3	A				
S 1088GW	063 - 10	–	63	–	22	–	40	10	–	–	–	–	7	–	0,550	1,1÷1,3	A				
S 1089W	10 25 01.10	A	10	8	8,5	13	–	10	25	13,5	20	11°	1	10	0,017	1,1÷1,3	–	1003	12255P	5608P	–
S 1089W	12 25 01.10	A	12	8	8,5	13	–	10	25	13	20	9°	1	10	0,020	1,1÷1,3	–				
S 1089W	16 25 02.10	B	16	8	8,5	13	–	10	25	–	–	3,5°	2	10	0,023	1,1÷1,3	–				
S 1089W	20 30 03.10	B	20	10	10,5	18	–	10	30	–	–	1,5°	3	15	0,049	1,1÷1,3	–				
S 1089W	25 35 03.10	B	25	12	12,5	21	–	10	35	–	–	0,9°	3	17	0,090	1,1÷1,3	–				
S 1089W	25 35 04.10	B	25	12	12,5	21	–	10	35	–	–	0,9°	4	17	0,089	1,1÷1,3	–				
S 1089W	32 43 05.10	B	32	16	17	29	–	10	43	–	–	0,6°	5	24	0,212	1,1÷1,3	–				







W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.

SAU QUALITY TOOLS ENGINEERING

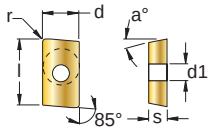
SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.				P			M			K			N			S			H		
				F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
APKT	1003	PDR	.I52	●	●	○	○	○	○	○	○	○				○	○	○			
APKT	1003	PDER	.L52	○	●	●	○	●	○	○	○	○				○	●	○			
APKT	1003	PDTR	.S52	○	●	●	○	●	●	○	●	●		○			○				
APKX	1003	PDR	.S52	○	●	●	○	●	●	○	○	○					○			○	
APKT	1003	PDSR	.Z54	○	●	●	○	●	○												
APKT	1003	PDER	.Z54		●	●															
APHT	100312SR		.Z53	○	○	○	●	●	●								○				
APHT	100320SR		.Z53	○	○	○	●	●	●								○				
APHT	1003	PDFR	.S57							●	●	●	●	●	●	○	○	○			

HT	HW	HC									
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS									
	T120	NEW F2140	T516	T526	T528N	T530	T525	T533	F1035		
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	○	●	●	○	○	●	○	○	●		
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	●	○	●	●	○	○	○	○		



l	d	s	d1	r	a°
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	1,2	11
10,5	6,70	3,50	2,8	2,0	11
10,5	6,70	3,50	2,8	0,5	11

MATERIALI - MATERIALS

Pag. 1063

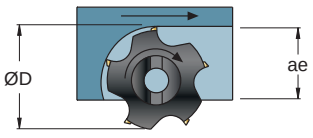
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	M	R	Vc m/min Pag. 440 T120	T516	T525	T526	T528N	T530	T533	F1035	F2140		
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,15	0,2			250	220	220	230	240	125	200		
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,1	0,15			200	160	160	180	150	120	170		
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,1	0,15			170	150	150	150	140	100	120		
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,08	0,1			150	140	140	140	160	100	120		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,08	0,1	100		140	130	120	120	140		140		
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,15	0,2	120	250	200		180	160	160				
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,06	0,12	0,15	110	200	180		160	150	150				
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,06	0,12	0,15	120	220	200		170	160	160				
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,15	0,2	500					600					
	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,12	0,18	300					300					
	NON METALLICI - PLASTICS	29-30	/	0,06	0,12	0,18											
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,1	20		40		40	40	50		50		
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,06	0,08	0,1	30		50		60	50	50		50		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,06	0,08	0,1			40								

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

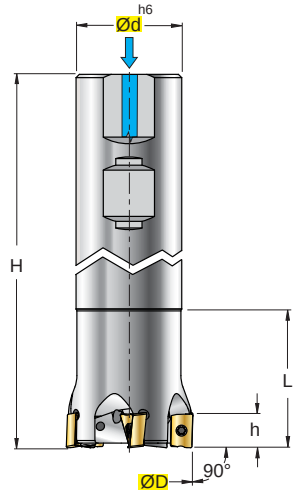
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 9001-6W..-10

Ø 20-40

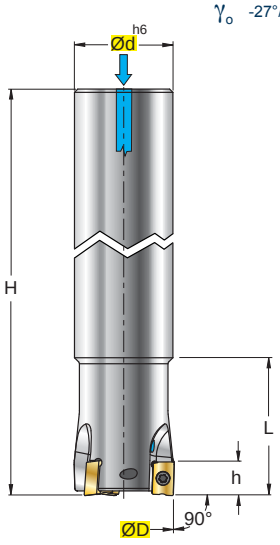
γ_p -6°
γ_f -27°/-17,5°
γ_o -27°/-17,5°



S 9001-6XLW.. -10
S 9001-6XLMW.. -10

Ø 20-32

γ_p -6°
γ_f -27°/-19°
γ_o -27°/-19°

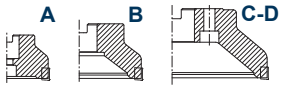


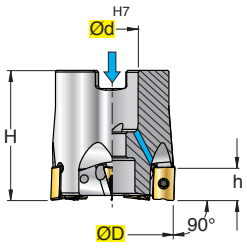
S 9001-8W..-10

Ø 40-63

γ_p -6,35°/-6°
γ_f -17,5°/-13°
γ_o -17,5°/-13°

ISO 6462 ...



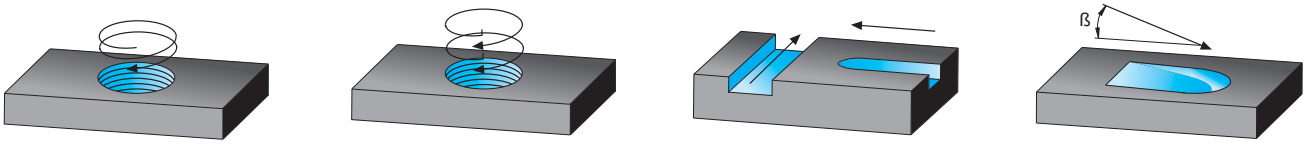


LNMM 1006 .F56	
LNMM 1006 .F61	 NEW

INSERTI - INSERTS PAG. 450

(mm)

ART.	ØD	Ød	H	h	L	ß	Z	kg	Nm	ISO 6462				
S9001-6W-020-02-10	20	20	100	9	30	4°	2	0,20	1,5÷2,0	–	1006	C03007	5609	–
S9001-6W-020-03-10	20	20	100	9	30	4°	3	0,20	1,5÷2,0	–				
S9001-6W-025-02-10	25	25	115	9	35	3,5°	2	0,41	1,5÷2,0	–				
S9001-6W-025-03-10	25	25	115	9	35	3,5°	3	0,41	1,5÷2,0	–				
S9001-6W-032-03-10	32	32	125	9	42	3°	3	0,76	1,5÷2,0	–				
S9001-6W-032-04-10	32	32	125	9	42	3°	4	0,76	1,5÷2,0	–				
S9001-6W-040-04-10	40	32	130	9	42	2°	4	0,87	1,5÷2,0	–				
S9001-6W-040-05-10	40	32	130	9	42	2°	5	0,87	1,5÷2,0	–				
S9001-6XLW-020-02-10 New	20	20	150	9	30	4°	2	0,31	1,5÷2,0	–	1006	C03007	5609	–
S9001-6XLW-025-02-10 New	25	25	150	9	35	3,5°	2	0,51	1,5÷2,0	–				
S9001-6XLW-032-03-10 New	32	32	180	9	42	3°	3	0,99	1,5÷2,0	–				
S9001-6XLMW-020-02-10	20	19	150	9	30	4°	2	0,31	1,5÷2,0	–	1006	C03007	5609	–
S9001-6XLMW-025-02-10	25	24	150	9	35	3,5°	2	0,51	1,5÷2,0	–				
S9001-6XLMW-032-03-10	32	30	180	9	42	3°	3	0,99	1,5÷2,0	–				
S9001-8W-040-04-10	40	16	40	9	–	2°	4	0,24	1,5÷2,0	A	1006	C03007	5609	VBSF08L
S9001-8W-040-05-10	40	16	40	9	–	2°	5	0,24	1,5÷2,0	A				
S9001-8W-050-05-10	50	22	40	9	–	1,5°	5	0,35	1,5÷2,0	A	1006	C03007	5609	VBSF10
S9001-8W-050-07-10	50	22	40	9	–	1,5°	7	0,35	1,5÷2,0	A				
S9001-8W-063-06-10 New	63	22	40	9	–	1°	6	0,60	1,5÷2,0	A				
S9001-8W-063-08-10 New	63	22	40	9	–	1°	8	0,60	1,5÷2,0	A				



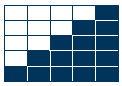
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

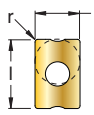
SAU QUALITY TOOLS ENGINEERING

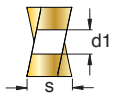
SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -



Pag. 424





COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS T3116 NEW	HC F3120 NEW	HC F3420	HC F1325 NEW	HC F1335 NEW	HC F4345 NEW	l	d	s	d1	r	a°
LNMM	100605	.F56	○	●	●	○	○	○	○	○	○														■		■		■		10	6,5	6,5	3,5	0,5	–
				●	●		○	○																											
				●	●		○	○																											
LNMM	100605	.F61		○	○					●	●														■	■					10	6,5	6,5	3,5	0,5	–
										●																									
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																									○	○	●	○	○	○					
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																									●	●	●	●	●	●					

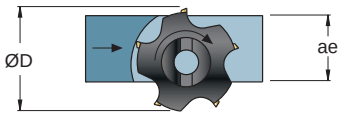
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T3116	Vc m/min F3120	Vc m/min F3420	Vc m/min F1325	Vc m/min F1335	Vc m/min F4345
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,15	0,25		200		230	220	200
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,2		180		190	180	170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16		160		170	160	160
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,12	0,15		120				
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,08	0,12	0,15				100	90	80
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,08	0,18	0,25	310	280	250	220		
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2	180	260	260	180		
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,15	0,2	280	240	240	160		
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130									
N	RAME E SUE LEGHE - COPPER	26--28	90-110									
N	NON METALLICI - PLASTICS	29-30	/									
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320									
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]									
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]									

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

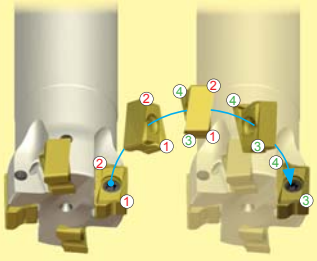


ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



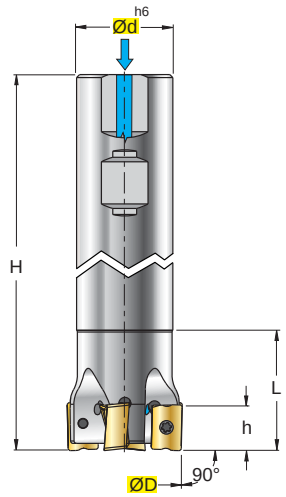
- 4 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 4 "Useful" cutting-edges thanks to two-sided insert
- "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- Tranchants "Utiles" disponibles grace a la plaquette bilaterale

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 9001-6W..-15

Ø 32-40

γ_p -6°
γ_f -24°/-20°
γ_o -24°/-20°

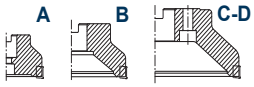


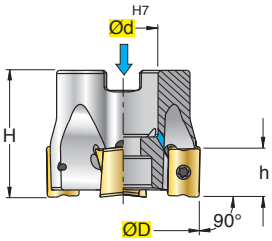
S 9001-8W..-15

Ø 50-80

γ_p -6,35°/-6°
γ_f -17°
γ_o -17°

ISO 6462 ...





LNMM 1510 .F56

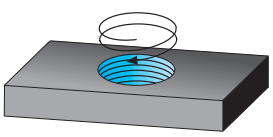
LNMM 1510 .F61

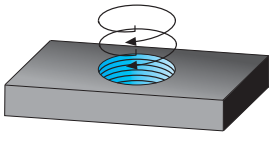
NEW

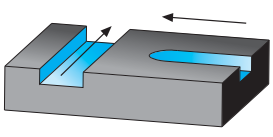
INSERTI - INSERTS
PAG. 450

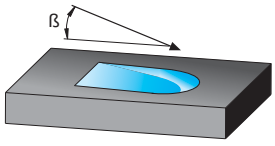
(mm)

ART.	ØD	Ød	H	h	L	ß	Z	kg	Nm	ISO 6462				
S9001-6W-032-02-15	32	32	125	14	40	2,5°	2	0,71	3,8÷5	–	1510	1240P	5615P	–
S9001-6W-032-03-15	32	32	125	14	40	2,5°	3	0,71	3,8÷5	–				
S9001-6W-040-03-15	40	32	130	14	40	2°	3	0,78	3,8÷5	–				
S9001-6W-040-04-15	40	32	130	14	40	2°	4	0,78	3,8÷5	–				
S9001-8W-050-03-15	50	22	40	14	–	2°	3	0,31	3,8÷5	A	1510	1240P	5615P	VBSF10
S9001-8W-050-04-15	50	22	40	14	–	2°	4	0,31	3,8÷5	A				
S9001-8W-063-04-15	63	22	40	14	–	2°	4	0,54	3,8÷5	A				
S9001-8W-063-06-15	63	22	40	14	–	2°	6	0,54	3,8÷5	A				
S9001-8W-080-05-15	80	27	50	14	–	1,5°	5	1,0	3,8÷5	A-B	1510	1240P	5615P	AL12x35
S9001-8W-080-07-15	80	27	50	14	–	1,5°	7	1,0	3,8÷5	A-B				







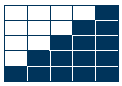


W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

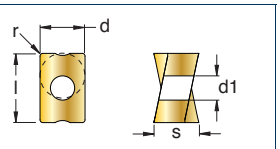


Pag. 424

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS T3116	HC F3120	HC F3420	HC F1325	HC F1335	HC F4345	l	d	s	d1	r	a°
LNMM	151008	.F56	○	●	●	○	○	○	○	○	○													■		■		■	15	10	10	4,5	0,8	–
				●	●		○	○																			■							
				●	●		○	○																			■							
LNMM	151008	.F61		○	○					●	●													■		■			15	10	10	4,5	0,8	–
										●																								

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ○ ○ ● ○ ○ ○

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ● ● ● ● ● ●



MATERIALI - MATERIALS

Pag. 1063

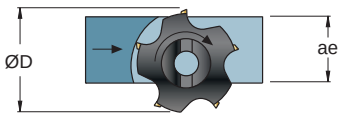
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T3116	F3120	F3420	F1325	F1335	F4345
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,15	0,25		200		230	220	200
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,2		180		190	180	170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16		160		170	160	160
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,08	0,12	0,15		120				
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,08	0,12	0,15				100	90	80
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,08	0,18	0,25	310	280	250	220		
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2	180	260	260	180		
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,15	0,2	280	240	240	160		
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130									
N	RAME E SUE LEGHE - COPPER	26--28	90-110									
N	NON METALLICI - PLASTICS	29-30	/									
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320									
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]									
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]									

$$n = \frac{Vc \cdot 1000}{\text{ØD} \cdot 3{,}14} \text{ = giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae \text{ = mm}$$

$$fn = fz \cdot z \text{ = mm}$$

$$Vf = fz \cdot z \cdot n \text{ = mm/min}$$

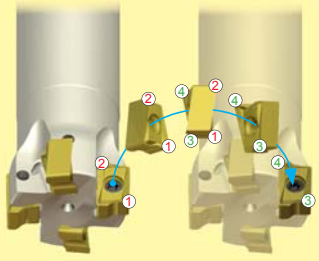


ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



- 4 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 4 "Useful" cutting-edges thanks to two-sided insert
- 4 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 4 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

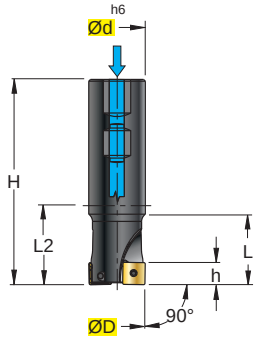
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 1296W .. 12

Ø 32-40

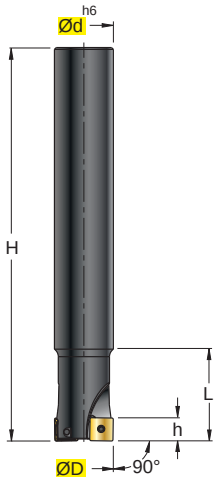
γ_p +8°/+7°
γ_f -9°/-8°
γ_o -9°/-8°



S 1296XLZ .. 12

Ø 32-40

γ_p +8°/+7°
γ_f -9°/-8°
γ_o -9°/-8°

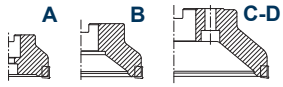


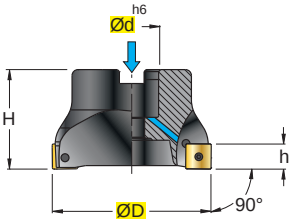
S 1298W ..12
S 1298GW..12
S 1298G..12

Ø 50-250

γ_p +7°/+8°
γ_f -8°/-1,6°
γ_o -8°/-1,6°

ISO 6462 ...



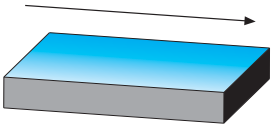


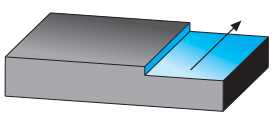
SDMT 1205 .Z51	
SDHT 1205 .Z57P	
SDMT 1205 .Z62	
SDHT 1205 .Z63	

INSERTI - INSERTS
PAG. 453

(mm)

ART.	ØD	Ød	H	h	L	L2	Z	kg	Nm	ISO 6462				
S 1296W 032 - 12	32	32	110	10,5	40	50	2	0,545	3,8÷5,0	–	1205	124011	5620	–
S 1296W 040 - 12	40	32	115	10,5	45	45	3	0,618	3,8÷5,0	–				
S 1296XLZ 032 - 12	32	32	250	10,5	40	–	2	1,432	3,8÷5,0	–	1205	124011	5620	–
S 1296XLZ 040 - 12	40	40	250	10,5	45	–	3	2,247	3,8÷5,0	–				
S 1298W 050 - 12	50	22	40	10,5	–	–	5	0,295	3,8÷5,0	A	1205	124011	5620	VBSF10
S 1298W 063 - 12	63	22	40	10,5	–	–	6	0,470	3,8÷5,0	A				
S 1298W 080 - 12	80	27	50	10,5	–	–	6	1,040	3,8÷5,0	A	1205	124011	5620	VBSF12
S 1298W 100 - 12	100	32	50	10,5	–	–	8	1,600	3,8÷5,0	A	1205	124011	5620	VBSF16
S 1298W 125 - 12	125	40	63	10,5	–	–	9	3,300	3,8÷5,0	A	1205	124011	5620	VBSF20
S 1298GW 050 - 12	50	22	40	10,5	–	–	3	0,289	3,8÷5,0	A	1205	124011	5620	VBSF10
S 1298GW 063 - 12	63	22	40	10,5	–	–	4	0,474	3,8÷5,0	A				
S 1298GW 080 - 12	80	27	50	10,5	–	–	5	1,04	3,8÷5,0	A	1205	124011	5620	VBSF12
S 1298GW 100 - 12	100	32	50	10,5	–	–	6	1,61	3,8÷5,0	A-B	1205	124011	5620	VBSF16
S 1298GW 125 - 12	125	40	63	10,5	–	–	7	3,275	3,8÷5,0	A-B	1205	124011	5620	VBSF20
S 1298G 160 - 12	160	40	63	10,5	–	–	8	3,74	3,8÷5,0	C	1205	124011	5620	–
S 1298G 200 - 12	200	60	63	10,5	–	–	10	7,07	3,8÷5,0	D				
S 1298G 250 - 12	250	60	63	10,5	–	–	12	10,06	3,8÷5,0	D				





W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
XLZ = EXTRALUNGA , STELO CILINDRICO - EXTRALONG , CYLINDRICAL SHANK - EXTRALANG , ZYLINDERSCHAFT - EXTRALONGUE , QUEUE CYLINDRIQUE
G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.

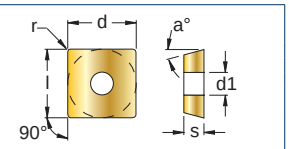
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES T115	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F4635	HC F2140	HC T3215	HC T5130	l	d	s	d1	r	a°
SDMT	1205ZZ SN	.Z51							○	●	●														■		12,7	12,7	5,0	5,5	0,8	15
SDHT	120508 FR	.Z57P										●	●	●								■					12,7	12,7	5,0	5,5	0,8	15
SDMT	1205ZZ SN	.Z62	○	●	●		○	○	○	●	●												■			■	12,7	12,7	5,0	5,5	0,8	15
			●	●	●	●	●			○														■								
			○	○	○	●	●	●								○									■								
SDHT	120512 FR	.Z63	○	○	○	●	●	●								○									■		12,7	12,7	5,0	5,5	1,2	15



CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ● ● ● ○ ●

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ○ ○ ● ● ●

MATERIALI - MATERIALS

Pag. 1063

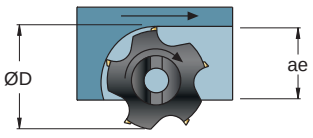
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T115	T3215	T5130	F4635	F2140
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,2	0,3			200	200	200
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,25			160	150	170
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,08	0,15	0,25			140	120	120
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,12	0,2			140	120	120
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,1	0,15				100	140
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,25	0,35		390	150	150	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,2	0,3		330	150	150	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,2	0,3		270	150	150	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,2	0,3	950				
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,18	0,25	400				
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,18	0,25					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,08	0,12					50
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,05	0,08	0,12					50
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]								

$$n = \frac{Vc \cdot 1000}{\text{Ø}D \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

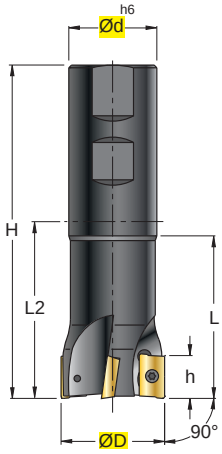
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 1696 .. 16

Ø 25-40

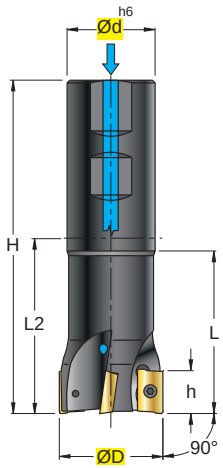
γ_p +4°/+8°
γ_f -13,5°/-12,5°
γ_o -13,5°/-12,5°



S 1696W .. 16

Ø 25-40

γ_p +4°/+8°
γ_f -13,5°/-12,5°
γ_o -13,5°/-12,5°

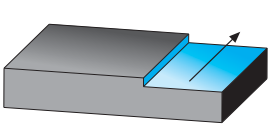


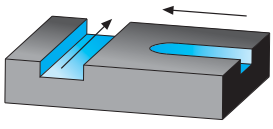
APKT 1604 .S51/.S54	
APKT 1604 .K52	
APKT 1604 .S52	
APMT 1604 .I52	
APKT 1604 .Z52	
APFT 1604 .S52	
APKX 1604 .S52	
APFX 1604 .S52	
APKT 1604 .Z54	
APKT 1604 .K57P	

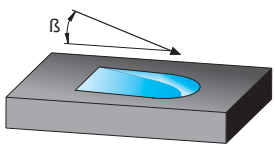
INSERTI - INSERTS
PAG. 449

(mm)

ART.		ØD	Ød	H	h	L	L2	ß	Z	kg	Nm			
S 1696	025 - 16	25	25	100	16	44	44	3,5°	2	0,29	3,8÷5,0	1604	C04008P	5615P
S 1696	032 - 16	32	32	110	16	50	50	2,0°	3	0,54	3,8÷5,0	1604	C04011P	5615P
S 1696	040 - 16	40	32	115	16	55	55	1,5°	4	0,64	3,8÷5,0			
S 1696W	025 - 16	25	25	100	16	44	44	3,5°	2	0,29	3,8÷5,0	1604	C04008P	5615P
S 1696W	032 - 16	32	32	110	16	50	50	2,0°	3	0,54	3,8÷5,0	1604	C04011P	5615P
S 1696W	040 - 16	40	32	115	16	55	55	1,5°	4	0,64	3,8÷5,0			







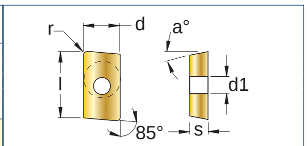
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
XLZ = EXTRALUNGA , STELO CILINDRICO - EXTRALONG , CYLINDRICAL SHANK - EXTRALANG , ZYLINDERSCHAFT - EXTRALONGUE , QUEUE CYLINDRIQUE

SCELTA VELOCE - QUICK PICK

Tenacità + / *Toughness* -

Pag. 424

HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.				P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	T110	T120	F4635 (NEW)	T516	T526	T528N	T530	T525	T544	F8015	l	d	s	d1	r	a°
APKT	1604	PDR	.S51				○	○	○	○	●	●	○	○	○	○	○	○					■									17,0	9,45	5,26	4,4	0,4	11
APKT	1604	PDSR	.K52													○	●	●													■	17,0	9,45	5,26	4,4	0,4	11
APMT	1604	PDR	.I52	○	●	●	○	○	○	○	○	○				○	○	○									■					17,0	9,45	5,26	4,4	0,8	11
APKT	1604	PDTR	.S52	○	●	●	○	●	●	○	○	○		○		○	○	○										■				17,0	9,45	5,26	4,4	0,8	11
										○	●	●													■												
APKT	1604	PDSR	.Z52	●	●	●	●	●									○							■ (red)								17,0	9,45	5,26	4,4	0,8	11
APFT	1604	PDTR	.S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	0,8	11
APKX	1604	PDR	.S52							○	●	●													■							17,0	9,45	5,76	4,4	0,8	11
				○	●	●	○	●	●		○						○			○									■								
				○	●	●	○	●	●		○			○			○													■							
APFX	160416	R	.S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	1,6	11
APFX	160424	R	.S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	2,4	11
APFX	160430	R	.S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	3,0	11
APFX	160440	R	.S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	4,0	11
APFX	160448	R	.S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	4,8	11
APFX	160460	R	.S52	○	●	●	○	●	●		○			○			○													■		17,0	9,45	4,76	4,4	6,0	11
APKT	1604	PDTR	.S54	●	●	●	○	●	○								○												■			17,0	9,45	5,26	4,4	0,4	11
APKT	1604	PDSR	.Z54		●	●																				■						17,0	9,45	5,26	4,4	0,8	11
APKT	1604	PDFR	.K57P										●	●	●							■										16,4	9,53	4,76	4,4	0,2	11

	T110	T120	F4635	T516	T526	T528N	T530	T525	T544	F8015
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	●	●	○	○	●	○	●	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	○	○	●	●	○	○	○	○

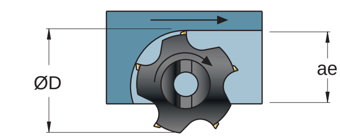
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T110	T120	F8015	T516	T525	T526	T528N	T530	F4635	T544
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,2	0,3					250	220	220	230	200	230
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,25					200	160	160	180	150	180
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,08	0,15	0,25					170	150	150	150	120	150
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,12	0,2					150	140	140	140	120	140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,1	0,15		100			140	130	120	120	100	120
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,25	0,35	120	120		250	200		180	160	150	160
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,2	0,3	120	110		200	180		160	150	150	150
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,2	0,3	120	120		220	200		170	160	150	160
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,2	0,35	950	500						600		600
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,18	0,3	400	300						300		300
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,18	0,3	300									
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,08	0,12	20	20	60		40		40	40		40
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,05	0,08	0,12	30	30	80		50		60	50		50
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,05	0,08						40					

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

$$fn = fz \cdot z = mm$$

$$Vf = fz \cdot z \cdot n = mm/min$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

	ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440		Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

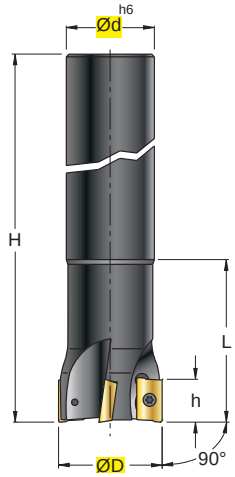
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 1696XLZ .. 16

Ø 25-40

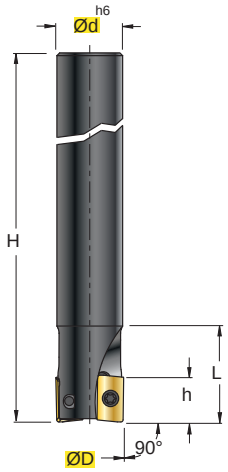
γ_p +4°/+8°
γ_f -13,5°/-12,5°
γ_o -13,5°/-12,5°



S 1696XLZM..16

Ø 25-32

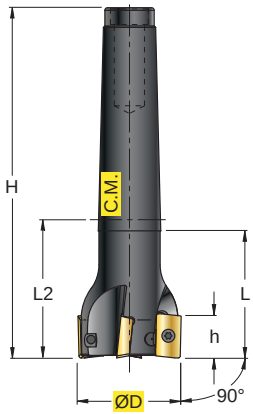
γ_p +4°/+8°
γ_f -13,5°/-12,5°
γ_o -13,5°/-12,5°



S 1697 .. 16

Ø 25-40

γ_p +4°/+8°
γ_f -13,5°/-12,5°
γ_o -13,5°/-12,5°

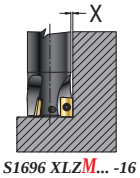


APKT 1604 .S51/.S54	
APKT 1604 .K52	
APKT 1604 .S52	
APMT 1604 .I52	
APKT 1604 .Z52	
APFT 1604 .S52	
APKX 1604 .S52	
APFX 1604 .S52	
APKT 1604 .Z54	
APKT 1604 .K57P	

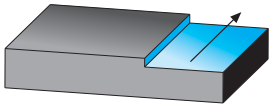
INSERTI - INSERTS
PAG. 449

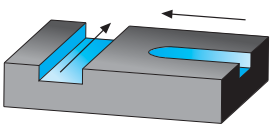
(mm)

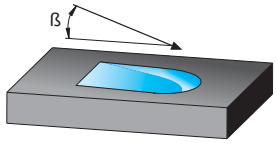
ART.		ØD	Ød/CM	H	h	L	L2	ß	Z	X	kg	Nm			
S 1696XLZ	025 - 16	25	25	200	16	44	–	3,5°	2	–	0,69	3,8÷5,0	1604	C04008P	5615P
S 1696XLZ	032 - 16	32	32	250	16	50	–	2,0°	3	–	1,44	3,8÷5,0	1604	C04011P	5615P
S 1696XLZ	040 - 16	40	32	250	16	50	–	1,5°	4	–	2,30	3,8÷5,0			
S 1696XLZM	025 - 16	25	24	200	16	35	–	3,5°	2	0,5	0,67	3,8÷5,0	1604	C04008P	5615P
S 1696XLZM	032 - 16	32	30	250	16	35	–	2,0°	3	1,0	1,51	3,8÷5,0	1604	C04011P	5615P
S 1697	025 - 16	25	CM3	124	16	38	43	3,5°	2	–	0,30	3,8÷5,0	1604	C04008P	5615P
S 1697	032 - 16	32	CM3	124	16	38	43	2,0°	3	–	0,34	3,8÷5,0	1604	C04011P	5615P
S 1697	040 - 16	40	CM3	135	16	49	54	1,5°	4	–	0,43	3,8÷5,0			



S1696 XLZM... -16







W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
GXL = PASSO GROSSO EXTRALUNGA - EXTRALONG WITH LARGE TEETH DISTANCE - EXTRALANG MIT NORMAL ZUHNTEILUNG - EXTRALONGUE AVEC GRANDE DISTANCE DENTS

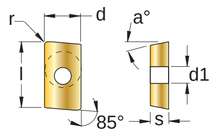
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / *Toughness* -

Pag. 424

HW: NON RIV. - CEMENTED CARBIDE GRADES (T110, T120)
HC: RIVESTITI - COATED GRADES - BESCHICHTET - RECOUVERTS (F4635 NEW, T516, T526, T528N, T530, T525, T544, F8015)



COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	T110	T120	F4635	T516	T526	T528N	T530	T525	T544	F8015	l	d	s	d1	r	a°
APKT 1604 PDR .S51				○	○	○	○	●	●	○	○	○	○	○	○					■									17,0	9,45	5,26	4,4	0,4	11
APKT 1604 PDSR .K52													○	●	●													■	17,0	9,45	5,26	4,4	0,4	11
APMT 1604 PDR .I52	○	●	●	○	○	○	○	○	○				○	○	○									■					17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDTR .S52	○	●	●	○	●	●	○	○	○		○		○	○	○										■				17,0	9,45	5,26	4,4	0,8	11
							○	●	●													■												
APKT 1604 PDSR .Z52	●	●	●	●	●									○							■ (NEW)								17,0	9,45	5,26	4,4	0,8	11
APFT 1604 PDTR .S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	0,8	11
APKX 1604 PDR .S52							○	●	●													■							17,0	9,45	5,76	4,4	0,8	11
	○	●	●	○	●	●		○						○			○									■								
	○	●	●	○	●	●		○			○			○													■							
APFX 160416 R .S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	1,6	11
APFX 160424 R .S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	2,4	11
APFX 160430 R .S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	3,0	11
APFX 160440 R .S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	4,0	11
APFX 160448 R .S52	○	●	●	○	●	●		○						○			○									■			17,0	9,45	4,76	4,4	4,8	11
APFX 160460 R .S52	○	●	●	○	●	●		○			○			○													■		17,0	9,45	4,76	4,4	6,0	11
APKT 1604 PDTR .S54	●	●	●	○	●	○								○												■			17,0	9,45	5,26	4,4	0,4	11
APKT 1604 PDSR .Z54		●	●																				■						17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDFR .K57P										●	●	●							■										16,4	9,53	4,76	4,4	0,2	11

	T110	T120	F4635	T516	T526	T528N	T530	T525	T544	F8015
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	●	●	○	○	●	○	●	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	○	○	●	●	○	○	○	○

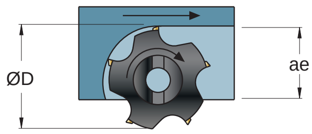
	MATERIALI - MATERIALS Pag. 1063	VDI 3323 GR.	HB Rm 1) HRC 2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T110	T120	F8015	T516	T525	T526	T528N	T530	F4635	T544
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,2	0,3					250	220	220	230	200	230
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,25					200	160	160	180	150	180
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,08	0,15	0,25					170	150	150	150	120	150
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,12	0,2					150	140	140	140	120	140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,1	0,15		100			140	130	120	120	100	120
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,25	0,35	120	120		250	200		180	160	150	160
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,2	0,3	120	110		200	180		160	150	150	150
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,2	0,3	120	120		220	200		170	160	150	160
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,2	0,35	950	500						600		600
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,18	0,3	400	300						300		300
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,18	0,3	300									
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,08	0,12	20	20	60		40		40	40		40
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,05	0,08	0,12	30	30	80		50		60	50		50
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)	0,05	0,08						40					

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

$$fn = fz \cdot z = mm$$

$$Vf = fz \cdot z \cdot n = mm/min$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

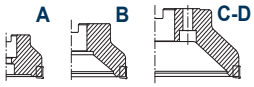
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

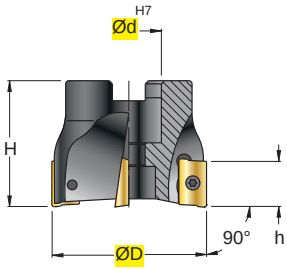
S 1698 .. 16

Ø 40-125

γ_p +6°/+9°
γ_f -12,5°/-3°
γ_o -12,5°/-3°

ISO 6462 ...



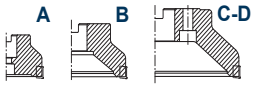


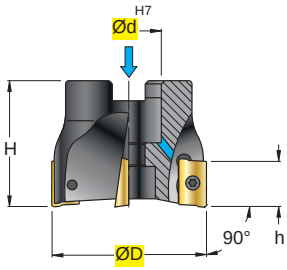
S 1698W ..16
S 1698GW..16

Ø 40-125

γ_p +6°/+9°
γ_f -12,5°/-3°
γ_o -12,5°/-3°

ISO 6462 ...

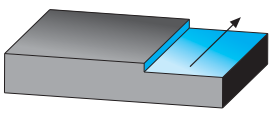


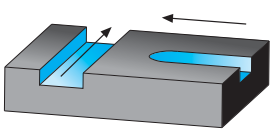


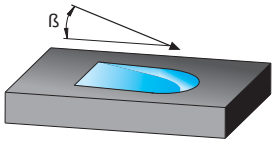
APKT 1604 .S51/.S54	
APKT 1604 .K52	
APKT 1604 .S52	
APMT 1604 .I52	
APKT 1604 .Z52	
APFT 1604 .S52	
APKX 1604 .S52	
APFX 1604 .S52	
APKT 1604 .Z54	
APKT 1604 .K57P	

INSERTI - INSERTS
PAG. 449

ART.		(mm) ØD	Ød	H	h	ß	Z	kg	Nm	ISO 6462				
S 1698	040 - 16	40	16	40	16	1,8°	4	0,18	3,8÷5,0	A	1604	C04011P	5615P	VBSF08
S 1698	050 - 16	50	22	40	16	1,0°	5	0,25	3,8÷5,0	A	1604	C04011P	5615P	VBSF10
S 1698	063 - 16	63	22	40	16	0,7°	6	0,47	3,8÷5,0	A				
S 1698	080 - 16	80	27	50	16	0,6°	7	0,94	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF12
S 1698	100 - 16	100	32	50	16	0,4°	8	1,55	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF16
S 1698	125 - 16	125	40	63	16	0,3°	9	3,43	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF20
S 1698W	040 - 16	40	16	40	16	1,8°	4	0,18	3,8÷5,0	A	1604	C04011P	5615P	VBSF08
S 1698W	050 - 16	50	22	40	16	1,0°	5	0,25	3,8÷5,0	A	1604	C04011P	5615P	VBSF10
S 1698W	063 - 16	63	22	40	16	0,7°	6	0,47	3,8÷5,0	A				
S 1698W	080 - 16	80	27	50	16	0,6°	7	0,94	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF12
S 1698W	100 - 16	100	32	50	16	0,4°	8	1,55	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF16
S 1698W	125 - 16	125	40	63	16	0,3°	9	3,43	3,8÷5,0	A	1604	C04011P	5615P	VBSF20
S 1698GW	040 - 16	40	16	40	16	1,8°	3	0,17	3,8÷5,0	A	1604	C04011P	5615P	VBSF08
S 1698GW	050 - 16	50	22	40	16	1,0°	4	0,24	3,8÷5,0	A	1604	C04011P	5615P	VBSF10
S 1698GW	063 - 16	63	22	40	16	0,7°	5	0,45	3,8÷5,0	A				
S 1698GW	080 - 16	80	27	50	16	0,6°	6	0,92	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF12
S 1698GW	100 - 16	100	32	50	16	0,4°	7	1,52	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF16
S 1698GW	125 - 16	125	40	63	16	0,3°	8	3,10	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF20







W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.

PAG. 1001

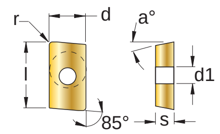
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / *Toughness* -

Pag. 424

HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R
APKT 1604 PDR .S51				○	○	○	○	●	●	○	○	○	○	○	○			
APKT 1604 PDSR .K52													○	●	●			
APMT 1604 PDR .I52	○	●	●	○	○	○	○	○	○				○	○	○			
APKT 1604 PDTR .S52	○	●	●	○	●	●	○	○	○		○		○	○	○			
							○	●	●									
APKT 1604 PDSR .Z52	●	●	●	●	●									○				
APFT 1604 PDTR .S52	○	●	●	○	●	●		○						○			○	
APKX 1604 PDR .S52							○	●	●									
	○	●	●	○	●	●		○						○			○	
	○	●	●	○	●	●		○			○			○				
APFX 160416 R .S52	○	●	●	○	●	●		○						○			○	
APFX 160424 R .S52	○	●	●	○	●	●		○						○			○	
APFX 160430 R .S52	○	●	●	○	●	●		○						○			○	
APFX 160440 R .S52	○	●	●	○	●	●		○						○			○	
APFX 160448 R .S52	○	●	●	○	●	●		○						○			○	
APFX 160460 R .S52	○	●	●	○	●	●		○			○			○				
APKT 1604 PDTR .S54	●	●	●	○	●	○								○				
APKT 1604 PDSR .Z54		●	●															
APKT 1604 PDFR .K57P										●	●	●						

COD.	T110	T120	F4635 (NEW)	T516	T526	T528N	T530	T525	T544	F8015
APKT 1604 PDR .S51		■								
APKT 1604 PDSR .K52										■
APMT 1604 PDR .I52						■				
APKT 1604 PDTR .S52							■			
				■						
APKT 1604 PDSR .Z52			■ (red)							
APFT 1604 PDTR .S52								■		
APKX 1604 PDR .S52				■						
								■		
									■	
APFX 160416 R .S52								■		
APFX 160424 R .S52								■		
APFX 160430 R .S52								■		
APFX 160440 R .S52								■		
APFX 160448 R .S52								■		
APFX 160460 R .S52									■	
APKT 1604 PDTR .S54								■		
APKT 1604 PDSR .Z54					■					
APKT 1604 PDFR .K57P	■									
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	●	●	○	○	●	○	●	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	○	○	●	●	○	○	○	○

COD.	l	d	s	d1	r	a°
APKT 1604 PDR .S51	17,0	9,45	5,26	4,4	0,4	11
APKT 1604 PDSR .K52	17,0	9,45	5,26	4,4	0,4	11
APMT 1604 PDR .I52	17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDTR .S52	17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDSR .Z52	17,0	9,45	5,26	4,4	0,8	11
APFT 1604 PDTR .S52	17,0	9,45	4,76	4,4	0,8	11
APKX 1604 PDR .S52	17,0	9,45	5,76	4,4	0,8	11
APFX 160416 R .S52	17,0	9,45	4,76	4,4	1,6	11
APFX 160424 R .S52	17,0	9,45	4,76	4,4	2,4	11
APFX 160430 R .S52	17,0	9,45	4,76	4,4	3,0	11
APFX 160440 R .S52	17,0	9,45	4,76	4,4	4,0	11
APFX 160448 R .S52	17,0	9,45	4,76	4,4	4,8	11
APFX 160460 R .S52	17,0	9,45	4,76	4,4	6,0	11
APKT 1604 PDTR .S54	17,0	9,45	5,26	4,4	0,4	11
APKT 1604 PDSR .Z54	17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDFR .K57P	16,4	9,53	4,76	4,4	0,2	11

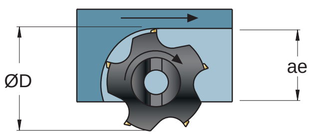
	MATERIALI - MATERIALS Pag. 1063	VDI 3323 GR.	HB Rm 1) HRC 2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T110	T120	F8015	T516	T525	T526	T528N	T530	F4635	T544
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,2	0,3					250	220	220	230	200	230
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,25					200	160	160	180	150	180
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,08	0,15	0,25					170	150	150	150	120	150
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,12	0,2					150	140	140	140	120	140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,1	0,15		100			140	130	120	120	100	120
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,25	0,35	120	120		250	200		180	160	150	160
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,2	0,3	120	110		200	180		160	150	150	150
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,2	0,3	120	120		220	200		170	160	150	160
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,2	0,35	950	500						600		600
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,18	0,3	400	300						300		300
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,18	0,3	300									
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,08	0,12	20	20	60		40		40	40		40
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,05	0,08	0,12	30	30	80		50		60	50		50
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)	0,05	0,08						40					

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$fz = fz0 \cdot Kae$ = mm

$fn = fz \cdot z$ = mm

$Vf = fz \cdot z \cdot n$ = mm/min



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

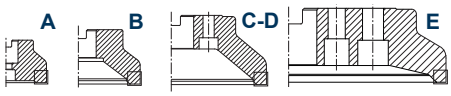
S 9003.8W .. 13

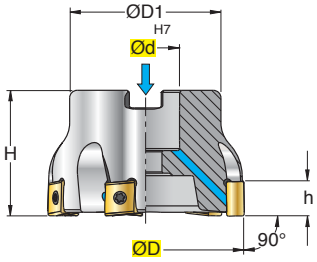
NEW

Ø 50-125

γ_p -5°
γ_f -15,8°/-9°
γ_o -15,8°/-9°

ISO 6462 ...

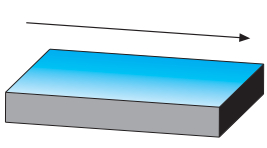
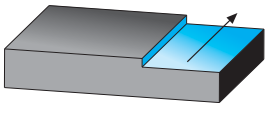
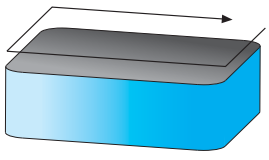




LNMX 131308.. .F58	 NEW
LNMX 131308.. .F61	 NEW

INSERTI - INSERTS
PAG. 451

ART.	(mm) ØD	Ød	ØD1	H	h	Z	kg	Nm	ISO 6462				
S 9003.8W-050-05-13	50	22	42	40	12	5	0,30	3,8÷5,0	A	1313	1240P	5615P	VBSF10
S 9003.8W-050-06-13	50	22	42	40	12	6	0,29	3,8÷5,0	A				
S 9003.8W-063-06-13	63	22	48	40	12	6	0,51	3,8÷5,0	A				
S 9003.8W-063-08-13	63	22	48	40	12	8	0,50	3,8÷5,0	A				
S 9003.8W-080-07-13	80	27	60	50	12	7	1,00	3,8÷5,0	A	1313	1240P	5615P	AL 12x35
S 9003.8W-080-10-13	80	27	60	50	12	10	1,00	3,8÷5,0	A				
S 9003.8W-100-09-13	100	32	80	50	12	9	1,66	3,8÷5,0	A	1313	1240P	5615P	AL 16x35
S 9003.8W-100-13-13	100	32	80	50	12	13	1,64	3,8÷5,0	A				
S 9003.8W-125-11-13	125	40	95	63	12	11	3,20	3,8÷5,0	A-B	1313	1240P	5615P	AL 20x45
S 9003.8W-125-17-13	125	40	95	63	12	17	3,17	3,8÷5,0	A-B				

W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

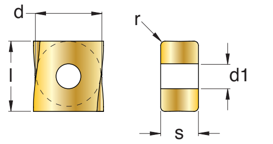
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	F3120 (NEW)	F1325 (NEW)	F1335 (NEW)	l	d	s	d1	r	a°
LNMX	131308	.F58	○	●	●	○	○	○	○	○	○											■		13	13	7,94	4,6	0,8	–
				●	●		○	○															■						
LNMX	131308	.F61		○	○					●	●										■			13	13	7,94	4,6	0,8	–

	F3120	F1325	F1335
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	○	○	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	●	●	●

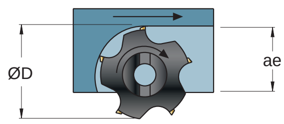
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 F3120	F1325	F1335
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,15	0,25	0,4	200	230	220
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,12	0,18	0,3	180	190	180
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,12	0,18	0,3	160	170	160
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,1	0,14	0,25	120		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,1	0,12	0,2		100	90
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,15	0,3	0,5	280	220	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,15	0,25	0,4	260	180	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,12	0,2	0,35	240	160	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130						
N	RAME E SUE LEGHE - COPPER	26--28	90-110						
N	NON METALLICI - PLASTICS	29-30	/						
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320						
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]						
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]						

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (\text{min}^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

$$fn = fz \cdot z = mm$$

$$Vf = fz \cdot z \cdot n = mm/min$$

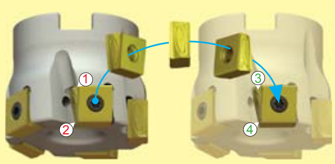


ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

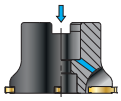
F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

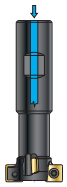
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

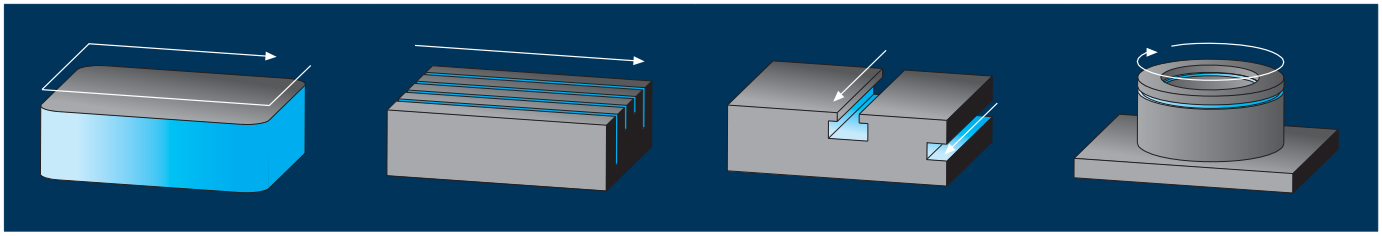


- 4 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 4 "Useful" cutting-edges thanks to two-sided insert
- 4 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 4 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

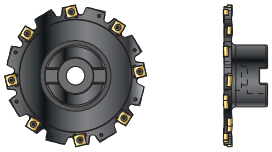
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

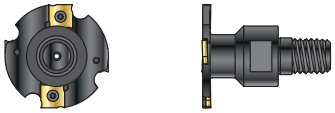
S1056 Pag. 386	S1058 Pag. 386	S666 Pag. 390	S668 Pag. 390		
 ØD = 20 - 40	 ØD = 40 - 63	 ØD = 19 - 34	 ØD = 48 - 63		
S 1056W .. 10	S 1058W .. 10 S 1058WF .. 10	S 666 .. 16	S 668 .. 16		
 AP..1003		 156.15.16..			

S1656 Pag. 388	S1658 Pag. 388	S976 Pag. 392			
 ØD = 25 - 40	 ØD = 50 - 125	 ØD = 21 - 50			
S 1656W .. 16	S 1658 .. 16	S 976W ..			
 AP..1604		 SP..0603 SP..09T3 SP..1204			



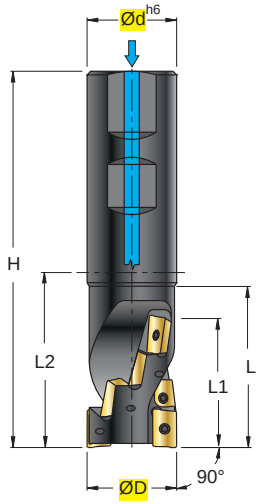
S950	Pag. 394	S905	Pag. 400		
 ØD = 63 - 250		 ØD = 20 - 32			
S 950 ..		S 905W ..			
 **SNHX..11.. SNHX..12..**		 **AP..1003 AP..1604**			

S955	Pag. 396				
 ØD = 50 - 160					
S 955 ..					
 **SNHX..11.. SNHX..12..**					

S959	Pag. 398				
 ØD = 50 - 80					
S 959 ..					
 **SNHX..11.. SNHX..12..**					

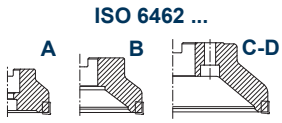
S 1056W .. 10

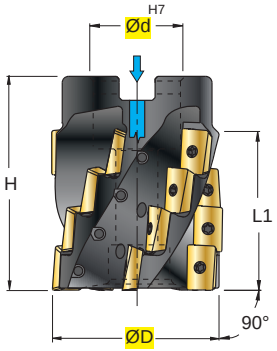
Ø 20-40



S 1058W .. 10
S 1058WF .. 10

Ø 40-63



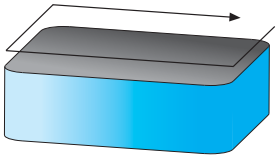


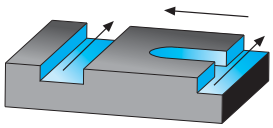
APKT 1003 .I52	
APKT 1003 .L52	
APKT 1003 .S52	
APKX 1003 .S52	
APKT 1003 .Z54	
APHT 1003 .S57	

INSERTI - INSERTS
PAG. 448

(mm)

ART.		ØD	Ød	H	L	L1	L2	Z	N	K	kg	Nm	ISO 6462				
S 1056W	020-10	20	20	87	37	28	37	2	4	1	0,200	1,1÷1,3	–	1003	12255P	5608P	–
S 1056W	020.2-10(**)	20	20	87	37	28	37	2	6	2	0,200	1,1÷1,3	–				
S 1056W	025-10	25	25	105	49	37	49	2	8	2	0,340	1,1÷1,3	–				
S 1056W	032-10(***)	32	32	115	55	46	55	4	12	2	0,605	1,1÷1,3	–				
S 1056W	032.2-10(**)	32	32	115	55	46	55	2	10	2	0,605	1,1÷1,3	–				
S 1056W	032.3-10(*)	32	32	115	55	46	55	3	15	3	0,600	1,1÷1,3	–				
S 1056W	040-10	40	32	130	70	55	70	3	18	3	0,810	1,1÷1,3	–				
S 1056W	040.2-10(**)	40	32	130	70	55	70	2	12	2	0,810	1,1÷1,3	–				
S 1058W	040-10	40	16	50	–	37	–	3	12	3	0,250	1,1÷1,3	A	1003	12255P	5608P	VBSF08L
S 1058W	050-10	50	22	60	–	46	–	3	15	3	0,510	1,1÷1,3	A	1003	12255P	5608P	VBSF10L
S 1058W	063-10	63	27	60	–	46	–	4	20	4	0,800	1,1÷1,3	A	1003	12255P	5608P	VBSF12L
S 1058WF	040-10	40	16	50	–	37	–	5	20	5	0,240	1,1÷1,3	A	1003	12255P	5608P	VBSF08L
S 1058WF	050-10	50	22	60	–	46	–	5	25	5	0,510	1,1÷1,3	A	1003	12255P	5608P	VBSF10L
S 1058WF	063-10	63	27	60	–	46	–	7	35	7	0,840	1,1÷1,3	A	1003	12255P	5608P	VBSF12L





(*) 3 ELICHE
(*) 3 FLUTES
(*) 3 SPIRALEN
(*) 3 HÉLICES

(**) 2 ELICHE
(**) 2 FLUTES
(**) 2 SPIRALEN
(**) 2 HÉLICES

(***) 2 ELICHE N°4 INSERTI IN TESTA
(***) 2 FLUTES 4 FRONT INSERTS
(***) 2 SPIRALEN A STIRNWENDEPLATTEN
(***) 2 HÉLICES 4 PLAQUETTES À L' EXTREMITÉ

Z = Numero di eliche - Number of flutes - Spiralenanzahl - Nombre d' helices
K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance
N = Numero d'inserti - Insert number - Wendeplattenanzahl - Nombre des plaquettes
W = Foro per liquido refrigerante - Coollant bore - Kühlmittelbohrung - Trou du liquide d'arrosage
F = Passo fine - Fine pitch - Feine Zuhnteilung - Pas fin

PAG. 1001

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.				P			M			K			N			S			H		
				F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
APKT	1003	PDR	.I52	●	●	○	○	○	○	○	○	○				○	○	○			
APKT	1003	PDER	.L52	○	●	●	○	●	○	○	○	○				○	●	○			
APKT	1003	PDTR	.S52	○	●	●	○	●	●	○	●	●		○			○				
APKX	1003	PDR	.S52	○	●	●	○	●	●	○	○	○					○		○		
APKT	1003	PDSR	.Z54	○	●	●	○	●	○												
APKT	1003	PDER	.Z54		●	●															
APHT	1003	PDFR	.S57							●	●	●	●	●	●	○	○	○			

HT	HW	HC										
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS										
	T120	T516	T526	T528N	T530	T525	T533	F1035				
		■		■								
					■	■						
	■	■			■							
						■						
			■									
							■					
	■											

l	d	s	d1	r	a°
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11
10,5	6,70	3,50	2,8	0,5	11

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY		○				●	○	○	●	○	○	●								
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY		○				○	●	●	○	○	○	○								

MATERIALI - MATERIALS

Pag. 1063

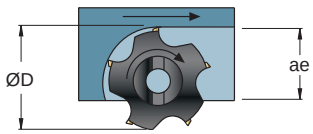
		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T120	T516	T525	T526	T528N	T530	T533	F1035
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,15	0,2			250	220	220	230	240	125
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,1	0,15			200	160	160	180	150	120
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,1	0,15			170	150	150	150	140	100
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,08	0,1			150	140	140	140	160	100
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,08	0,1	100		140	130	120	120	140	
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,15	0,2	120	250	200		180	160	160	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,06	0,12	0,15	110	200	180		160	150	150	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,06	0,12	0,15	120	220	200		170	160	160	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,15	0,2	500					600		
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,12	0,18	300					300		
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,12	0,18								
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,1	20		40		40	40	50	
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,06	0,08	0,1	30		50		60	50	50	
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,06	0,08	0,1			40					

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae \cdot Kap = \text{mm}$$

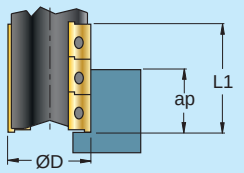
$$fn = fz \cdot K = \text{mm}$$

$$Vf = fz \cdot K \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			



ap/D	0,25	0,5	0,75	1,0	ap max=L1
Kap	1	1	0,8	0,7	0,5

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

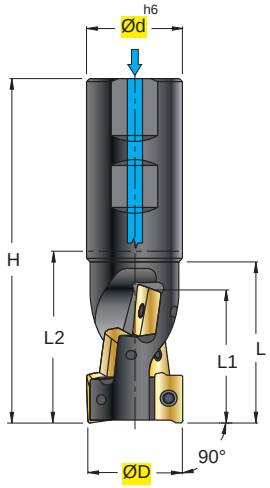
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae / Kap = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

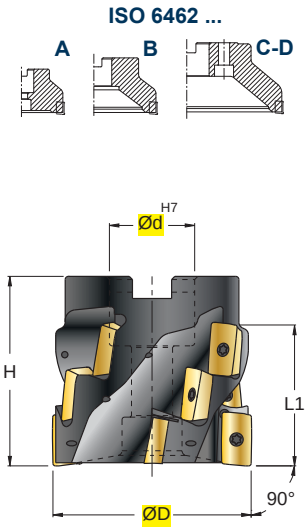
S 1656W .. 16

Ø 25-40



S 1658 .. 16

Ø 50-125

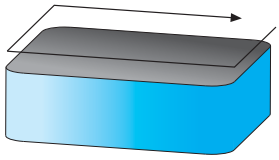


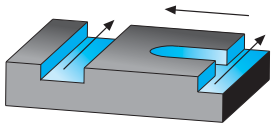
APKT 1604 .S51/.S54	
APMT 1604 .I52	
APKT 1604 .Z52	
APFT 1604 .S52	
APKX 1604 .S52	
APKT 1604 .Z54	
APKT 1604 .K57P	

INSERTI - INSERTS
PAG. 449

(mm)

ART.		ØD	Ød	H	L	L1	L2	Z	N	K	kg	Nm	ISO 6462				
S 1656W	025-16	25	25	95	38	29	39	1	2	1	0,29	3,8÷5,0	–	1604	C04008P	5615P	–
S 1656W	032-16	32	32	115	53	44	55	2	6	2	0,52	3,8÷5,0	–				
S 1656W	040-16	40	32	130	65	58	70	2	8	2	0,73	3,8÷5,0	–	1604	C04011P	5615P	–
S 1658	050-16	50	27	50	–	30	–	3	6	3	0,36	3,8÷5,0	A	1604	C04011P	5615P	VBSF12
S 1658	063-16	63	27	60	–	44	–	4	12	4	0,74	3,8÷5,0	A	1604	C04011P	5615P	VBSF12L
S 1658	080-16	80	32	60	–	44	–	5	15	5	1,20	3,8÷5,0	A	1604	C04011P	5615P	VBSF16L
S 1658	100-16	100	40	60	–	44	–	6	18	6	1,70	3,8÷5,0	A-B	1604	C04011P	5615P	VBSF20
S 1658	125-16	125	40	60	–	44	–	7	21	7	3,15	3,8÷5,0	A-B				





Z = Numero di eliche - Number of flutes - Spiralenanzahl - Nombre d' helices
K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance
N = Numero d'inserti - Insert number - Wendeplattenanzahl - Nombre des plaquettes
W = Foro per liquido refrigerante - Coollant bore - Kühlmittelbohrung - Trou du liquide d'arrosage

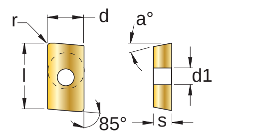
PAG. 1001

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / *Toughness* -

Pag. 424



COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HW T110	HW T120	HC F4635 (NEW)	HC T516	HC T526	HC T528N	HC T525	HC T544	l	d	s	d1	r	a°
APKT 1604 PDR .S51				○	○	○	○	●	●	○	○	○	○	○	○					■							17,0	9,45	5,26	4,4	0,4	11
APMT 1604 PDR .I52	○	●	●	○	○	○	○	○	○				○	○	○									■			17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDSR .Z52	●	●	●	●	●									○							■ (NEW)						17,0	9,45	5,26	4,4	0,8	11
APFT 1604 PDTR .S52	○	●	●	○	●	●		○						○			○								■		17,0	9,45	4,76	4,4	0,8	11
APKX 1604 PDR .S52							○	●	●													■					17,0	9,45	5,76	4,4	0,8	11
	○	●	●	○	●	●		○						○			○								■							
	○	●	●	○	●	●		○			○			○												■						
APKT 1604 PDTR .S54	●	●	●	○	●	○								○											■		17,0	9,45	5,26	4,4	0,4	11
APKT 1604 PDSR .Z54	○	●	●	○	●	○																	■				17,0	9,45	5,26	4,4	0,8	11
APKT 1604 PDFR .K57P										●	●	●							■								16,4	9,53	4,76	4,4	0,2	11

HT = CERMET; HW = NON RIV. CEMENTED CARBIDE GRADES; HC = RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

	T110	T120	F4635	T516	T526	T528N	T525	T544
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	●	●	○	○	○	●
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	○	○	●	●	○	○

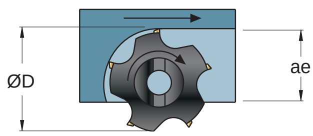
	MATERIALI - MATERIALS Pag. 1063	VDI 3323 GR.	HB Rm 1) HRC 2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T110	T120	T516	T525	T526	T528N	F4635	T544
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,2	0,3				250	220	220	200	230
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,08	0,15	0,25				200	160	160	150	180
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,08	0,15	0,25				170	150	150	120	150
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,12	0,2				150	140	140	120	140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,1	0,15		100		140	130	120	100	120
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,12	0,25	0,35	120	120	250	200		180	150	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,1	0,2	0,3	120	110	200	180		160	150	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,1	0,2	0,3	120	120	220	200		170	150	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,2	0,35	950	500						600
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,18	0,3	400	300						300
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,18	0,3	30							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,05	0,08	0,12	20	20		40		40		50
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,05	0,08	0,12	30	30		50		60		50
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)	0,05	0,08					40				

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae \cdot Kap = mm$$

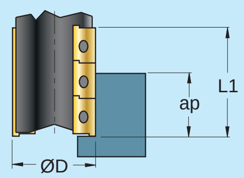
$$fn = fz \cdot K = mm$$

$$Vf = fz \cdot K \cdot n = mm/min$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

Vc Pag. 440	ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
	Vc (min)---------Vc(max)				



ap/D	0,25	0,5	0,75	1,0	ap max=L1
Kap	1	1	0,8	0,7	0,5

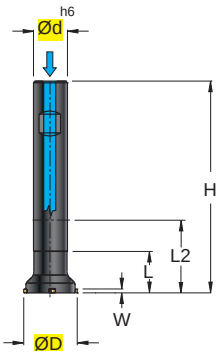
F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae / Kap = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

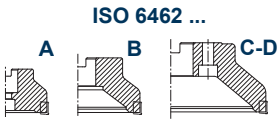
S 666W .. 16

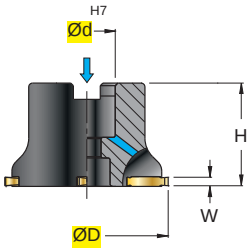
Ø 19-34



S 668W .. 16

Ø 48-63

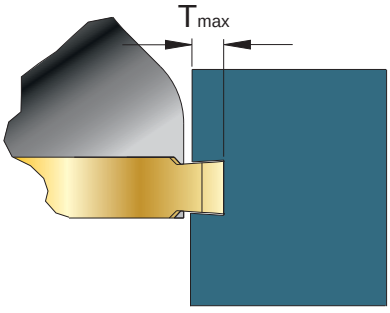




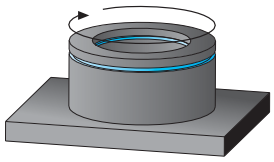
156.15.16.. .C54	
156.15.16.. .C57	
154.15.16..	

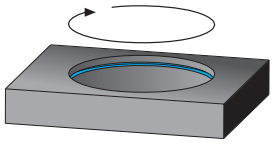
INSERTI - INSERTS
PAG. 447

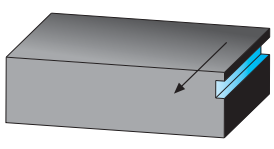
ART.		(mm) ØD	Ød	H	L	L2	Z	K	W	kg	Nm	ISO 6462				
S 666W	019-16	19	16	100	20	52	1	1	1,1-1,3	0,15	3,5÷4,0	–	156.15-16	FS244P	5615P	–
S 666W	034-16	34	20	125	25	75	3	3	1,6-2,15	0,31	3,5÷4,0	–				
S 668W	048-16	48	16	40	–	–	4	4	2,15-3,15	0,35	3,5÷4,0	A	156.15-16	FS244P	5515P	VBSF08
S 668W	063-16	63	22	40	–	–	5	5	2,65-4,15	0,44	3,5÷4,0	A	156.15-16	FS244P	5515P	VBSF10



ØD	T max
19	1,8
34 - 48 - 63	2,3





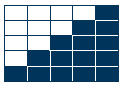


K = FATTORE D 'AVANZAMENTO - FACTOR OF FEED - VORSCHUBFAKTOR - FACTEUR D' AVANCE

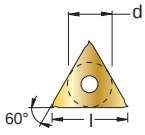
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -



Pag. 424



COD.	P	M	K	N	S	H	HT CERMET	HW N6315	HC F6315	l	d	s	d1	T	r/W
										TOLLERANZA W - W TOLERANCE					+0,05 +0,01
156.15-16110 .C54	●	●	●						■	16,0	9,52	3	4,5	3,0	1,10
156.15-16130 .C54	●	●	●						■	16,0	9,52	3	4,5	3,0	1,30
156.15-16160 .C54	●	●	●						■	16,0	9,52	3	4,5	3,0	1,60
156.15-16185 .C54	●	●	●						■	16,0	9,52	3	4,5	3,0	1,85
156.15-16215 .C54	●	●	●						■	16,0	9,52	3	4,5	3,0	2,15
156.15-16265 .C54	●	●	●						■	16,0	9,52	3	4,5	3,0	2,65
156.15-16315 .C54	●	●	●						■	16,0	9,52	3,5	4,5	3,3	3,15
156.15-16415 .C54	●	●	●						■	16,0	9,52	4,5	4,5	3,3	4,15
156.15-16110 .C57				●				■		16,0	9,52	3	4,5	3,0	1,10
156.15-16130 .C57				●				■		16,0	9,52	3	4,5	3,0	1,30
156.15-16160 .C57				●				■		16,0	9,52	3	4,5	3,0	1,60
156.15-16185 .C57				●				■		16,0	9,52	3	4,5	3,0	1,85
156.15-16215 .C57				●				■		16,0	9,52	3	4,5	3,0	2,15
156.15-16265 .C57				●				■		16,0	9,52	3	4,5	3,0	2,65
156.15-16315 .C57				●				■		16,0	9,52	3,5	4,5	3,3	3,15
156.15-16415 .C57				●				■		16,0	9,52	4,5	4,5	3,3	4,15

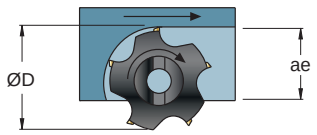
É POSSIBILE UTILIZZARE INSERTI **154..** NON RETTIFICATI, PAG 447
154.. INSERTS CAN BE USED.. NOT GROUND, PAGE 447
DIE VERWENDUNG NICHT GESCHLIFFENER WENDEPLATTEN 154.. IST MÖGLICH, S. SEITE 447
IL EST POSSIBLE D'UTILISER DES PLAQUETTES **154..** NON RECTIFIÉES, PAGE 447

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY		●	●
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY		○	○

MATERIALI - MATERIALS
Pag. 1063

		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	M	R	Vc m/min Pag.440 N6315	F6315		
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,06	0,08	0,1		140		
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,08	0,1		130		
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,08	0,1		130		
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,08	0,1		130		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,08	0,1		110		
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,08	0,1	0,12		110		
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,1	0,12		110		
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,1	0,12		110		
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,08	0,1	340			
	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,08	0,1	300			
	NON METALLICI - PLASTICS	29-30	/	0,06	0,08	0,1	290			
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320							
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]							
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]							

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)--------Vc(max)			



ae/D	0,1 10%	0,05 5%	0,04 4%	0,03 3%	0,02 2%
Kae	2,1	3	3,5	4	4,8

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

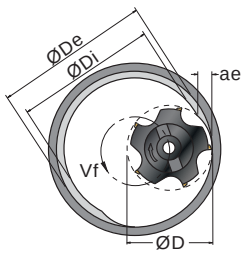
$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

$$ae = \frac{ØDe^2 - ØDi^2}{4 \cdot (ØDe - ØD)} = \text{mm}$$

$$Vf = \left(1 - \frac{ØD}{ØDe}\right) \cdot n \cdot fz \cdot z = \text{mm/min}$$

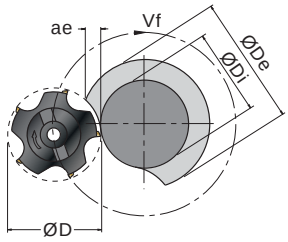


F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

$$ae = \frac{ØDe^2 - ØDi^2}{4 \cdot (ØDi + ØD)} = \text{mm}$$

$$Vf = \left(1 + \frac{ØD}{ØDi}\right) \cdot n \cdot fz \cdot z = \text{mm/min}$$

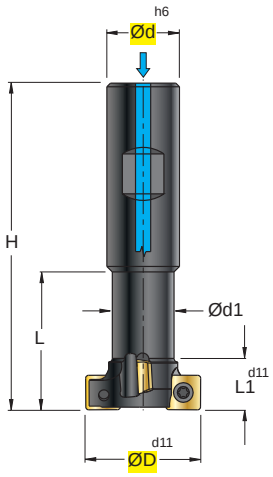


■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 976W ..

Ø 21-50



SPMT N54	
SPMW.. .N51	
SPMW.. .N59	

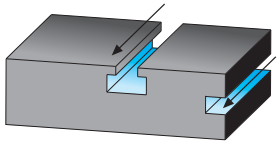
INSERTI - INSERTS
PAG. 457

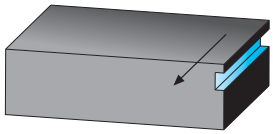
(mm)

ART.		ØD	Ød	Ød1	H	L	L1	Z	K	kg	Nm			
S 976W	021-06	21	16	11	76	24	9	2	1	0,10	1,1÷1,3	060304	12256P	5608P
S 976W	025-06	25	16	13	82	28	11	4	2	0,11	1,1÷1,3			
S 976W	032-09	32	20	17	88	35	14	4	2	0,15	3,0÷3,5	09T308	123509P	5615P
S 976W	040-09	40	25	21	108	44	17	4	2	0,37	3,0÷3,5			
S 976W	050-12	50	32	27	120	59	21	4	2	0,65	4,0÷5,0	120408	124510	5620

NOTE:

- Per cave a "T" secondo norme DIN 650-UNI 4788-ISO 299
- For "T" slot cutters according to DIN 650-UNI 4788-ISO 299 norms
- Fuer "T" Nuten nach DIN 650-UNI 4788-ISO 299 Normen
- Pour rainures à "T" selon les normes DIN 650-UNI 4788-ISO 299





Z = Numero di eliche - Number of flutes - Spiralenanzahl - Nombre d' helices
K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance
W = Foro per liquido refrigerante - Coollant bore - Kühlmittelbohrung - Trou du liquide d'arrosage

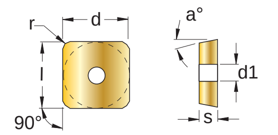
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	T3115 (NEW)	T528N (NEW)	l	d	s	d1	r	a°
SPMT	060304	.N54	○	○	○	●	●	●							○	○						■	6,35	6,35	3,18	2,8	0,4	11
SPMT	09T308	.N54	○	○	○	●	●	●							○	○						■	9,52	9,52	3,97	4,5	0,8	11
SPMT	120408	.N54	○	○	○	●	●	●							○	○						■	12,7	12,7	4,76	5,5	0,8	11
SPMW	060304	.N51							○	●	●										■		6,35	6,35	3,18	2,8	0,4	11
SPMW	09T308	.N51							○	●	●										■		9,52	9,52	3,97	4,5	0,8	11
SPMW	120408	.N51							○	●	●										■		12,7	12,7	4,76	5,5	0,8	11
SPMW	060304	.N59	○	●	●		○									○						■	6,35	6,35	3,18	2,8	0,4	11
SPMW	09T308	.N59	○	●	●		○									○						■	9,52	9,52	3,97	4,5	0,8	11
SPMW	120408	.N59	○	●	●		○									○						■	12,7	12,7	4,76	5,5	0,8	11

	T3115	T528N
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	●

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm 1) HRC 2)	fz0 mm 1°	fz0 mm 2°	fz0 mm 3°	Vc m/min Pag. 440 T3115	T528N
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,1	0,15	0,2		220
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,1	0,15		220
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,1	0,15		180
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,06	0,08	0,12		160
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,06	0,08	0,12		150
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,15	0,2	250	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,12	0,16	200	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,12	0,16	230	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130					
N	RAME E SUE LEGHE - COPPER	26--28	90-110					
N	NON METALLICI - PLASTICS	29-30	/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,12		40
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,06	0,08	0,12		60
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)					

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

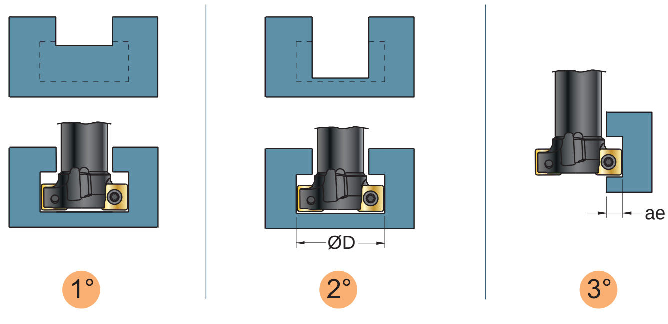
$$fn = fz \cdot K = mm$$

$$Vf = fz \cdot K \cdot n = mm/min$$

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

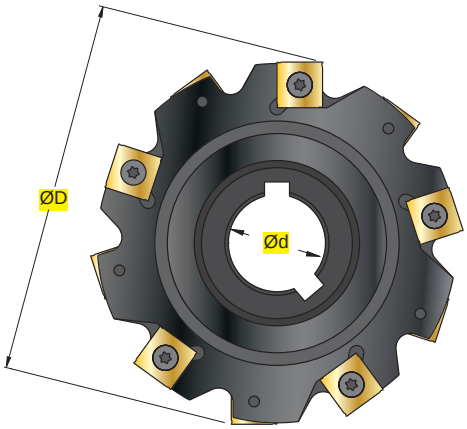
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

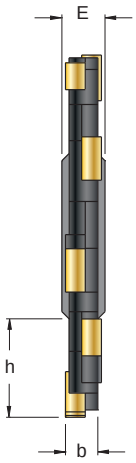


■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 950 ..

Ø 63-250

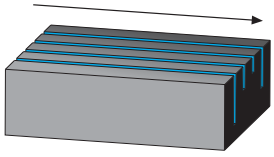


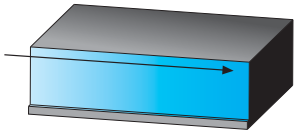


SNHX.. .Z47	
SNHX.. .Z52	
SNHX.. .Z62	

INSERTI - INSERTS
PAG. 456

ART.		(mm) ØD	Ød	h	b	E	Z	K	kg	Nm			
S 950	063 - 04	63	22	14	4	8	8	4	0,06	1,8÷2,0	1102	C93504	5609
S 950	063 - 05	63	22	14	5	8	8	4	0,07	1,8÷2,0	1103	C93505	5609
S 950	063 - 06	63	22	14	6	8	6	3	0,07	2,0÷2,2	1203	C94005	5615
S 950	080 - 04	80	22	22	4	8	10	5	0,10	1,8÷2,0	1102	C93504	5609
S 950	080 - 05	80	22	22	5	8	10	5	0,12	1,8÷2,0	1103	C93505	5609
S 950	080 - 06	80	22	22	6	8	8	4	0,13	2,0÷2,2	1203	C94005	5615
S 950	100 - 04	100	27	25	4	12	12	6	0,20	1,8÷2,0	1102	C93504	5609
S 950	100 - 05	100	27	25	5	12	12	6	0,23	1,8÷2,0	1103	C93505	5609
S 950	100 - 06	100	27	25	6	12	10	5	0,26	2,0÷2,2	1203	C94005	5615
S 950	100 - 07/08	100	27	25	7/8	12	10	5	0,30	2,0÷2,2	1204/12045	C94006	5615
S 950	100 - 10	100	27	25	10	12	10	5	0,37	2,0÷2,2	1205	C94008	5615
S 950	125 - 04	125	40	31	4	12	12	6	0,31	1,8÷2,0	1102	C93504	5609
S 950	125 - 05	125	40	31	5	12	12	6	0,35	1,8÷2,0	1103	C93505	5609
S 950	125 - 06	125	40	31	6	12	12	6	0,40	2,0÷2,2	1203	C94005	5615
S 950	125 - 07/08	125	40	31	7/8	12	12	6	0,45	2,0÷2,2	1204/12045	C94006	5615
S 950	125 - 10	125	40	31	10	12	12	6	0,57	2,0÷2,2	1205	C94008	5615
S 950	125 - 12	125	40	31	12	12	12	6	0,67	2,0÷2,2	1207	C94010	5615
S 950	160 - 04	160	40	44	4	12	18	9	0,56	1,8÷2,0	1102	C93504	5609
S 950	160 - 05	160	40	44	5	12	18	9	0,64	1,8÷2,0	1103	C93505	5609
S 950	160 - 06	160	40	44	6	12	16	8	0,74	2,0÷2,2	1203	C94005	5615
S 950	160 - 07/08	160	40	44	7/8	12	16	8	0,82	2,0÷2,2	1204/12045	C94006	5615
S 950	160 - 10	160	40	44	10	12	16	8	1,03	2,0÷2,2	1205	C94008	5615
S 950	160 - 12	160	40	44	12	12	16	8	1,30	2,0÷2,2	1207	C94010	5615
S 950	160 - 14	160	40	44	14	14	15	5	1,50	2,0÷2,2	1205	C94008	5615
S 950	200 - 04	200	50	62	4	12	18	9	0,76	1,8÷2,0	1102	C93504	5609
S 950	200 - 05	200	50	62	5	12	18	9	0,89	1,8÷2,0	1103	C93505	5609
S 950	200 - 06	200	50	62	6	12	18	9	1,10	2,0÷2,2	1203	C94005	5615
S 950	200 - 07/08	200	50	62	7/8	12	18	9	1,30	2,0÷2,2	1204/12045	C94006	5615
S 950	200 - 10	200	50	62	10	12	18	9	1,70	2,0÷2,2	1205	C94008	5615
S 950	200 - 12	200	50	62	12	12	18	9	2,00	2,0÷2,2	1207	C94010	5615
S 950	200 - 14	200	50	62	14	14	18	6	2,40	2,0÷2,2	1205	C94008	5615
S 950	250 - 10	250	50	87	10	12	24	12	2,70	2,0÷2,2	1205	C94008	5615
S 950	250 - 12	250	50	87	12	12	20	10	3,40	2,0÷2,2	1207	C94010	5615





K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance

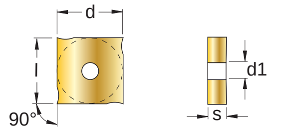
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	T115	T5020	T528N	F1035	l	d	s	d1	r	a°
SNHX	1102	.Z47							●	●		●	●								■				11,0	11,0	2,3	4,4	–	–
SNHX	1103	.Z47							●	●		●	●								■				11,0	11,0	2,7	4,4	–	–
SNHX	1203	.Z47							●	●		●	●								■				12,7	12,7	3,2	5,0	–	–
SNHX	1204	.Z47							●	●		●	●								■				12,7	12,7	4,0	5,0	–	–
SNHX	12045	.Z47							●	●		●	●								■				12,7	12,7	4,5	5,0	–	–
SNHX	1205	.Z47							●	●		●	●								■				12,7	12,7	5,4	5,0	–	–
SNHX	1207	.Z47							●	●		●	●								■				12,7	12,7	7,0	5,0	–	–
SNHX	1102	.Z52		●	●					●	●											■			11,0	11,0	2,3	4,4	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1103	.Z52		●	●					●	●											■			11,0	11,0	2,7	4,4	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1203	.Z52		●	●					●	●											■			12,7	12,7	3,2	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1204	.Z52		●	●					●	●											■			12,7	12,7	4,0	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	12045	.Z52		●	●					●	●											■			12,7	12,7	4,5	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1205	.Z52		●	●					●	●											■			12,7	12,7	5,4	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1207	.Z52		●	●					●	●											■			12,7	12,7	7,0	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1102	.Z62			●																			■	11,0	11,0	2,3	4,4	–	–
SNHX	1103	.Z62			●																			■	11,0	11,0	2,7	4,4	–	–
SNHX	1203	.Z62			●																			■	12,7	12,7	3,2	5,0	–	–
SNHX	1204	.Z62			●																			■	12,7	12,7	4,0	5,0	–	–
SNHX	12045	.Z62			●																			■	12,7	12,7	4,5	5,0	–	–
SNHX	1205	.Z62			●																			■	12,7	12,7	5,4	5,0	–	–
SNHX	1207	.Z62			●																			■	12,7	12,7	7,0	5,0	–	–

	T115	T5020	T528N	F1035
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	○	●
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	●	●

	MATERIALI - MATERIALS Pag. 1063	VDI 3323 GR.	HB Rm[1) HRC[2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T115	T5020	T528N	F1035
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,12	0,16		220	220	125
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,11	0,15		150	160	120
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,11	0,15		140	150	100
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,05	0,07	0,1		150	140	100
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,05	0,07	0,1			120	90
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,14	0,18	120	160	180	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,12	0,16	120	150	160	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,12	0,16	120	160	170	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,12	0,16	950			
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,1	0,15	400			
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,1	0,15	300			
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,12			40	
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,06	0,08	0,12			60	
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]							

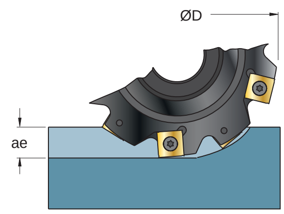
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

$$fn = fz \cdot K = mm$$

$$Vf = fz \cdot K \cdot n = mm/min$$

Vc Pag. 440	ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
	Vc (min)---------Vc(max)				



ae/D	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1,2	1,5	2,1	3	4,8

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

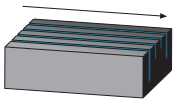
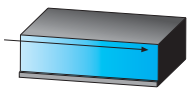
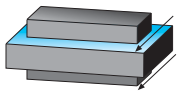
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

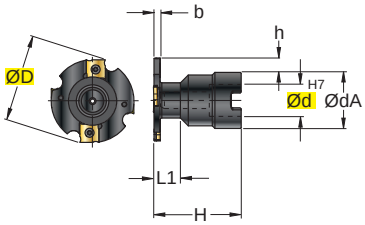
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 955 ..
S 955M ..

Ø 50-160

ISO 6462 ...
A B



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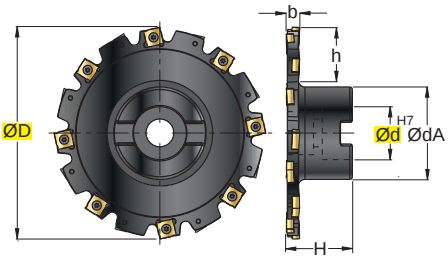


Ø63÷Ø160

SNHX.. .Z47	
SNHX.. .Z52	
SNHX.. .Z62	

INSERTI - INSERTS
PAG. 456

ART.			(mm) ØD	Ød	b	ØdA	H	L1	h	Z	K	kg	Nm	ISO 6462					
S 955	050 - 04		50	16	4	32	50	15	8,5	4	2	0,20	1,8÷2,0	–	1102	C93504	5609	VDST2008	–
S 955	050 - 05		50	16	5	32	50	15	8,5	4	2	0,21	1,8÷2,0	–	1103	C93505	5609	VDST2008	–
S 955	050 - 06		50	16	6	32	50	15	8,5	4	2	0,21	2,0÷2,2	–	1203	C94005	5615	VDST2008	–
S 955	050 - 07/08		50	16	7/8	32	50	15	8,5	4	2	0,22	2,0÷2,2	–	1204/12045	C94006	5615	VDST2008	–
S 955	050 - 10		50	16	10	32	50	15	8,5	4	2	0,25	2,0÷2,2	–	1205	C94008	5615	VDST2008	–
S 955	050 - 12		50	16	12	32	50	15	8,5	4	2	0,26	2,0÷2,2	–	1207	C94010	5615	VDST2008	–
S 955	063 - 04		63	22	4	40	50	–	10,5	8	4	0,34	1,8÷2,0	A	1102	C93504	5609	–	AL10x40
S 955	063 - 05		63	22	5	40	50	–	10,5	8	4	0,35	1,8÷2,0	A	1103	C93505	5609	–	AL10x40
S 955	063 - 06		63	22	6	40	50	–	10,5	6	3	0,35	2,0÷2,2	A	1203	C94005	5615	–	AL10x40
S 955	063 - 07/08		63	22	7/8	40	50	–	10,5	6	3	0,37	2,0÷2,2	A	1204/12045	C94006	5615	–	AL10x40
S 955	063 - 10		63	22	10	40	50	–	10,5	6	3	0,39	2,0÷2,2	A	1205	C94008	5615	–	AL10x40
S 955	063 - 12		63	22	12	40	50	–	10,5	6	3	0,40	2,0÷2,2	A	1207	C94010	5615	–	AL10x40
S 955	063 - 14		63	22	14	40	50	–	10,5	6	2	0,43	2,0÷2,2	A	1205	C94008	5615	–	AL10x40
S 955	063 - 16		63	22	16	40	50	–	10,5	6	2	0,45	2,0÷2,2	A	1207	C94008	5615	–	AL10x40
S 955	080 - 04		80	22	4	40	50	–	20	10	5	0,38	1,8÷2,0	A	1102	C93504	5609	–	AL10x40
S 955	080 - 05		80	22	5	40	50	–	20	10	5	0,40	1,8÷2,0	A	1103	C93505	5609	–	AL10x40
S 955	080 - 06		80	22	6	40	50	–	20	8	4	0,41	2,0÷2,2	A	1203	C94005	5615	–	AL10x40
S 955	080 - 07/08		80	22	7/8	40	50	–	20	8	4	0,44	2,0÷2,2	A	1204/12045	C94006	5615	–	AL10x40
S 955	080 - 10		80	22	10	40	50	–	20	8	4	0,49	2,0÷2,2	A	1205	C94008	5615	–	AL10x40
S 955	080 - 12		80	22	12	40	50	–	20	8	4	0,53	2,0÷2,2	A	1207	C94010	5615	–	AL10x40
S 955	080 - 14		80	22	14	40	50	–	20	6	2	0,59	2,0÷2,2	A	1205	C94008	5615	–	AL10x40
S 955	080 - 16		80	22	16	40	50	–	20	6	2	0,63	2,0÷2,2	A	1207	C94008	5615	–	AL10x40
S 955	100 - 04		100	27	4	48	50	–	24,2	12	6	0,64	1,8÷2,0	A	1102	C93504	5609	–	VBSF12L
S 955	100 - 05		100	27	5	48	50	–	24,2	12	6	0,68	1,8÷2,0	A	1103	C93505	5609	–	VBSF12L
S 955	100 - 06		100	27	6	48	50	–	24,2	10	5	0,69	2,0÷2,2	A	1203	C94005	5615	–	VBSF12L
S 955	100 - 07/08		100	27	7/8	48	50/50,5	–	24,2	10	5	0,73	2,0÷2,2	A	1204/12045	C94006	5615	–	VBSF12L
S 955	100 - 10		100	27	10	48	50	–	24,2	10	5	0,79	2,0÷2,2	A	1205	C94008	5615	–	VBSF12L
S 955	100 - 12		100	27	12	48	50	–	24,2	10	5	0,85	2,0÷2,2	A	1207	C94010	5615	–	VBSF12L
S 955	100 - 14		100	27	14	48	50	–	24,2	9	3	0,95	2,0÷2,2	A	1205	C94008	5615	–	VBSF12L
S 955	100 - 16		100	27	16	48	50	–	24,2	9	3	1,00	2,0÷2,2	A	1207	C94008	5615	–	VBSF12L
S 955M	125 - 04	New	125	32	4	59	50	–	31	12	6	0,98	1,8÷2,0	A	1102	C93504	5609	–	VBSF16
S 955M	125 - 05	New	125	32	5	59	50	–	31	12	6	1,02	1,8÷2,0	A	1103	C93505	5609	–	VBSF16
S 955M	125 - 06	New	125	32	6	59	50	–	31	12	6	1,05	2,0÷2,2	A	1203	C94005	5615	–	VBSF16
S 955M	125 - 07/08	New	125	32	7/8	59	50/50,5	–	31	12	6	1,09	2,0÷2,2	A	1204/12045	C94006	5615	–	VBSF16
S 955M	125 - 10	New	125	32	10	59	50	–	31	12	6	1,19	2,0÷2,2	A	1205	C94008	5615	–	VBSF16
S 955M	125 - 12	New	125	32	12	59	50	–	31	12	6	1,28	2,0÷2,2	A	1207	C94010	5615	–	VBSF16
S 955	125 - 04		125	40	4	70	50	–	23,7	12	6	0,95	1,8÷2,0	A	1102	C93504	5609	–	–
S 955	125 - 05		125	40	5	70	50	–	23,7	12	6	0,99	1,8÷2,0	A	1103	C93505	5609	–	–
S 955	125 - 06		125	40	6	70	50	–	23,7	12	6	1,02	2,0÷2,2	A	1203	C94005	5615	–	–
S 955	125 - 07/08		125	40	7/8	70	50/50,5	–	23,7	12	6	1,06	2,0÷2,2	A	1204/12045	C94006	5615	–	–
S 955	125 - 10		125	40	10	70	50	–	23,7	12	6	1,16	2,0÷2,2	A	1205	C94008	5615	–	–
S 955	125 - 12		125	40	12	70	50	–	23,7	12	6	1,25	2,0÷2,2	A	1207	C94010	5615	–	–
S 955	125 - 14		125	40	14	70	50	–	23,7	12	4	1,35	2,0÷2,2	A	1205	C94008	5615	–	–
S 955	125 - 16		125	40	16	70	50	–	23,7	12	4	1,43	2,0÷2,2	A	1207	C94008	5615	–	–
S 955	160 - 04		160	40	4	70	50	–	41,2	16	8	1,14	1,8÷2,0	B	1102	C93504	5609	–	–
S 955	160 - 05		160	40	5	70	50	–	41,2	16	8	1,21	1,8÷2,0	B	1103	C93505	5609	–	–
S 955	160 - 06		160	40	6	70	50	–	41,2	16	8	1,41	2,0÷2,2	B	1203	C94005	5615	–	–
S 955	160 - 07/08		160	40	7/8	70	50/50,5	–	41,2	16	8	1,41	2,0÷2,2	B	1204/12045	C94006	5615	–	–
S 955	160 - 10		160	40	10	70	50	–	41,2	16	8	1,62	2,0÷2,2	B	1205	C94008	5615	–	–
S 955	160 - 12		160	40	12	70	50	–	41,2	16	8	1,81	2,0÷2,2	B	1207	C94010	5615	–	–
S 955	160 - 14		160	40	14	70	50	–	41,2	15	5	2,04	2,0÷2,2	B	1205	C94008	5615	–	–
S 955	160 - 16		160	40	16	70	50	–	41,2	15	5	2,23	2,0÷2,2	B	1207	C94008	5615	–	–

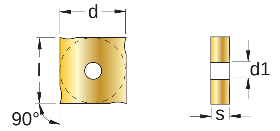
K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance

PAG. 1001

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424



HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	T115	T5020	T528N	F1035	l	d	s	d1	r	a°
SNHX	1102	.Z47							●	●		●	●								■				11,0	11,0	2,3	4,4	–	–
SNHX	1103	.Z47							●	●		●	●								■				11,0	11,0	2,7	4,4	–	–
SNHX	1203	.Z47							●	●		●	●								■				12,7	12,7	3,2	5,0	–	–
SNHX	1204	.Z47							●	●		●	●								■				12,7	12,7	4,0	5,0	–	–
SNHX	12045	.Z47							●	●		●	●								■				12,7	12,7	4,5	5,0	–	–
SNHX	1205	.Z47							●	●		●	●								■				12,7	12,7	5,4	5,0	–	–
SNHX	1207	.Z47							●	●		●	●								■				12,7	12,7	7,0	5,0	–	–
SNHX	1102	.Z52		●	●					●	●											■			11,0	11,0	2,3	4,4	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1103	.Z52		●	●					●	●											■			11,0	11,0	2,7	4,4	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1203	.Z52		●	●					●	●											■			12,7	12,7	3,2	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1204	.Z52		●	●					●	●											■			12,7	12,7	4,0	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	12045	.Z52		●	●					●	●											■			12,7	12,7	4,5	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1205	.Z52		●	●					●	●											■			12,7	12,7	5,4	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1207	.Z52		●	●					●	●											■			12,7	12,7	7,0	5,0	–	–
				●	●		●	●		○	○					●	●						■							
SNHX	1102	.Z62			●																			■	11,0	11,0	2,3	4,4	–	–
SNHX	1103	.Z62			●																			■	11,0	11,0	2,7	4,4	–	–
SNHX	1203	.Z62			●																			■	12,7	12,7	3,2	5,0	–	–
SNHX	1204	.Z62			●																			■	12,7	12,7	4,0	5,0	–	–
SNHX	12045	.Z62			●																			■	12,7	12,7	4,5	5,0	–	–
SNHX	1205	.Z62			●																			■	12,7	12,7	5,4	5,0	–	–
SNHX	1207	.Z62			●																			■	12,7	12,7	7,0	5,0	–	–

	T115	T5020	T528N	F1035
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	●	○	○	●
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	○	○	●	●

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm 1) HRC 2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T115	T5020	T528N	F1035
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,12	0,16		220	220	125
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,11	0,15		150	160	120
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,11	0,15		140	150	100
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,05	0,07	0,1		150	140	100
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,05	0,07	0,1			120	90
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,14	0,18	120	160	180	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,12	0,16	120	150	160	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,12	0,16	120	160	170	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,12	0,16	950			
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,1	0,15	400			
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,1	0,15	300			
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,12			40	
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,06	0,08	0,12			60	
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)							

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (\text{min}^{-1})$$

$fz = fz0 \cdot Kae$ = mm

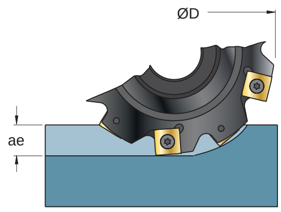
$fn = fz \cdot K$ = mm

$Vf = fz \cdot K \cdot n$ = mm/min

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



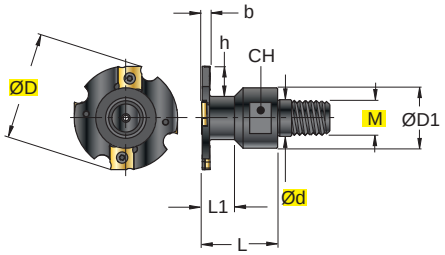
ae/D	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1,2	1,5	2,1	3	4,8

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 959 ..

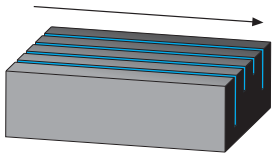
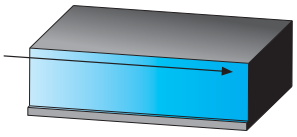
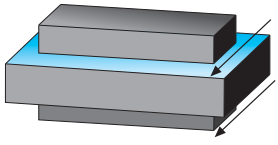
Ø 50-80



SNHX.. .Z47	
SNHX.. .Z52	
SNHX.. .Z62	

INSERTI - INSERTS
PAG. 456

ART.		(mm) ØD	M	Ød	b	ØD1	h	L	L1	Z	K	CH	kg	Nm			
S 959	050 - 04	50	16	17	4	29	14	35	15	4	2	24	0,19	1,8÷2,0	1102	C93504	5609
S 959	050 - 05	50	16	17	5	29	14	35	15	4	2	24	0,20	1,8÷2,0	1103	C93505	5609
S 959	050 - 06	50	16	17	6	29	14	35	15	4	2	24	0,20	2,0÷2,2	1203	C94005	5615
S 959	063 - 04	63	16	17	4	29	14	35	–	8	4	24	0,26	1,8÷2,0	1102	C93504	5609
S 959	063 - 05	63	16	17	5	29	14	35	–	8	4	24	0,27	1,8÷2,0	1103	C93505	5609
S 959	063 - 06	63	16	17	6	29	14	35	–	6	3	24	0,28	2,0÷2,2	1203	C94005	5615
S 959	080 - 04	80	16	17	4	29	22,5	35	–	10	5	24	0,31	1,8÷2,0	1102	C93504	5609
S 959	080 - 05	80	16	17	5	29	22,5	35	–	10	5	24	0,32	1,8÷2,0	1103	C93505	5609
S 959	080 - 06	80	16	17	6	29	22,5	35	–	8	4	24	0,34	2,0÷2,2	1203	C94005	5615

K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance

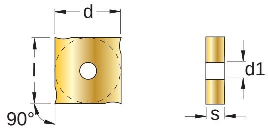
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	CERMET (HT)	T115 (HW)	T5020 (HC)	T528N (HC)	F1035 (HC)	l	d	s	d1	r	a°
SNHX 1102 .Z47							●	●		●	●									■				11,0	11,0	2,3	4,4	–	–
SNHX 1103 .Z47							●	●		●	●									■				11,0	11,0	2,7	4,4	–	–
SNHX 1203 .Z47							●	●		●	●									■				12,7	12,7	3,2	5,0	–	–
SNHX 1204 .Z47							●	●		●	●									■				12,7	12,7	4,0	5,0	–	–
SNHX 12045 .Z47							●	●		●	●									■				12,7	12,7	4,5	5,0	–	–
SNHX 1205 .Z47							●	●		●	●									■				12,7	12,7	5,4	5,0	–	–
SNHX 1207 .Z47							●	●		●	●									■				12,7	12,7	7,0	5,0	–	–
SNHX 1102 .Z52		●	●					●	●												■			11,0	11,0	2,3	4,4	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 1103 .Z52		●	●					●	●												■			11,0	11,0	2,7	4,4	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 1203 .Z52		●	●					●	●												■			12,7	12,7	3,2	5,0	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 1204 .Z52		●	●					●	●												■			12,7	12,7	4,0	5,0	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 12045 .Z52		●	●					●	●												■			12,7	12,7	4,5	5,0	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 1205 .Z52		●	●					●	●												■			12,7	12,7	5,4	5,0	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 1207 .Z52		●	●					●	●												■			12,7	12,7	7,0	5,0	–	–
		●	●		●	●		○	○					●	●							■							
SNHX 1102 .Z62			●																				■	11,0	11,0	2,3	4,4	–	–
SNHX 1103 .Z62			●																				■	11,0	11,0	2,7	4,4	–	–
SNHX 1203 .Z62			●																				■	12,7	12,7	3,2	5,0	–	–
SNHX 1204 .Z62			●																				■	12,7	12,7	4,0	5,0	–	–
SNHX 12045 .Z62			●																				■	12,7	12,7	4,5	5,0	–	–
SNHX 1205 .Z62			●																				■	12,7	12,7	5,4	5,0	–	–
SNHX 1207 .Z62			●																				■	12,7	12,7	7,0	5,0	–	–

	CERMET	T115	T5020	T528N	F1035
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY		●	○	○	●
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY		○	○	●	●

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm1) HRC2)	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T115	T5020	T528N	F1035
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,12	0,16		220	220	125
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,11	0,15		150	160	120
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,11	0,15		140	150	100
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,05	0,07	0,1		150	140	100
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,05	0,07	0,1			120	90
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,14	0,18	120	160	180	
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,12	0,16	120	150	160	
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,12	0,16	120	160	170	
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,12	0,16	950			
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,1	0,15	400			
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,1	0,15	300			
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,12			40	
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,06	0,08	0,12			60	
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)							

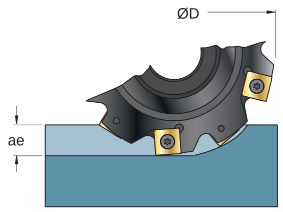
$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

$$fn = fz \cdot K = mm$$

$$Vf = fz \cdot K \cdot n = mm/min$$

	ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440		Vc (min)---------Vc(max)			



ae/D	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1,2	1,5	2,1	3	4,8

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

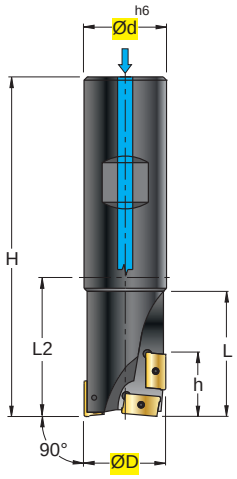
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● ● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ ○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 905W ..

Ø 20-32

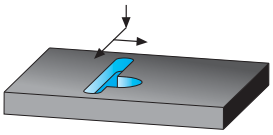


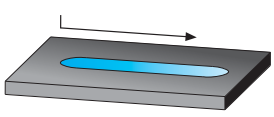
APKT 1003 .S52	
APKT 1604 .S52	

INSERTI - INSERTS
PAG. 448/449

(mm)

ART.		ØD	Ød	H	h	L	L2	Z	K	kg	Nm			
S 905W	020 - 10	20	20	90	19	35	40	2	1	0,17	1,1÷1,3	N°3 1003	12255P	5608P
S 905W	025 - 10	25	25	110	19	50	54	2	1	0,32	1,1÷1,3			
S 905W	032 - 16	32	32	130	29	50	70	2	1	0,64	3,8÷5,0	N°3 1604	C04011P	5615P





Z = Numero di eliche - Number of flutes - Spiralenanzahl - Nombre d' helices
K = Fattore d 'avanzamento - Factor of feed - Vorschubfaktor - Facteur d' avance
W = Foro per liquido refrigerante - Coollant bore - Kühlmittelbohrung - Trou du liquide d'arrosage

PAG. 1001

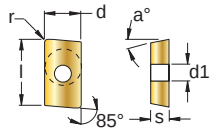
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

COD.				P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS T516	HC T530	l	d	s	d1	r	a°
APKT	1003	PDTR	.S52	○	●	●	○	●	●	○	●	●	○	○	○	○	○	○						■	■	10,5	6,70	3,5	2,8	0,5	11
				○	●	●	○	●	●	○	○	○	○	○	○	○	○	○													
APKT	1604	PDTR	.S52	○	●	●	○	●	●	○	●	●	○	○	○	○	○	○						■	■	17,0	9,45	5,26	4,4	0,8	11
				○	●	●	○	●	●	○	○	○	○	○	○	○	○	○													



CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ● ●

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ○ ○

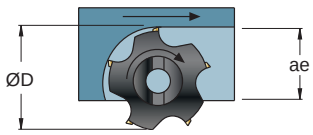
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	fz mm FORATURA DRILLING	Vc m/min Pag. 440 T516	Vc m/min T530
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,08	0,15	0,2	0,05		230
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,06	0,11	0,15	0,04		180
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,11	0,15	0,04		150
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,05	0,07	0,1	0,04		140
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,05	0,07	0,1	0,04		120
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,1	0,14	0,18	0,08	250	160
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,12	0,16	0,06	200	150
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,08	0,12	0,16	0,06	220	160
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,12	0,16	0,08		600
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,1	0,15	0,08		300
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,1	0,15	0,08		
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,06	0,08	0,12	0,04		40
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,06	0,08	0,12	0,04		50
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]						

$$n = \frac{Vc \cdot 1000}{\text{Ø}D \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot K = \text{mm}$$

$$Vf = fz \cdot K \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

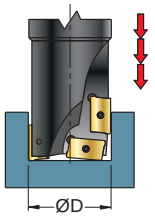
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

-IN FORATURA AVANZARE CON PASSI DI 1-1,5 mm PER ROMPERE IL TRUCIOLO

-FOR DRILLING FEED WITH 1-1,5 mm STEP TO BREAK THE CHIP

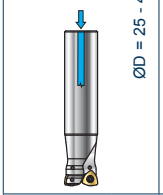


■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU
QUALITY TOOLS ENGINEERING

FRESE PER COPIATURA
COPY MILLING CUTTERS
KOPIERFRÄSER
FRAISE À COPIAGE
FRESAS COPIADORAS

S846W Pag. 404 | S848W Pag. 404 | S849W Pag. 404



S 846LW .. 06
S 846XLW .. 06
S 846LW .. 08
S 846GLW .. 08
S 846XLW .. 08
S 846GXLW .. 08

S 848W .. 06
S 848W .. 08
S 848WF .. 08

S 849W .. 06
S 849W .. 08
S 849W .. 08

WP..06..
WP..08.. **h = 1,5**

S806 Pag. 410

S 806W ..

RD.. 0701 **h = 3,5**
RD.. 0702 **h = 3,5**
RD.. 1003 **h = 5**

S1502 Pag. 406

S 1502.8W ..

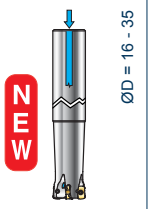
WN.. 1405 **h = 2**

S808 Pag. 412

S 808W ..

RD.. 12T3 **h = 6**
RD.. 1604 **h = 8**

S1503. 6LW Pag. 408 | S1503. 8W Pag. 408 | S1503. 9W Pag. 408



S 1503.6LW ..

S 1503.8W ..

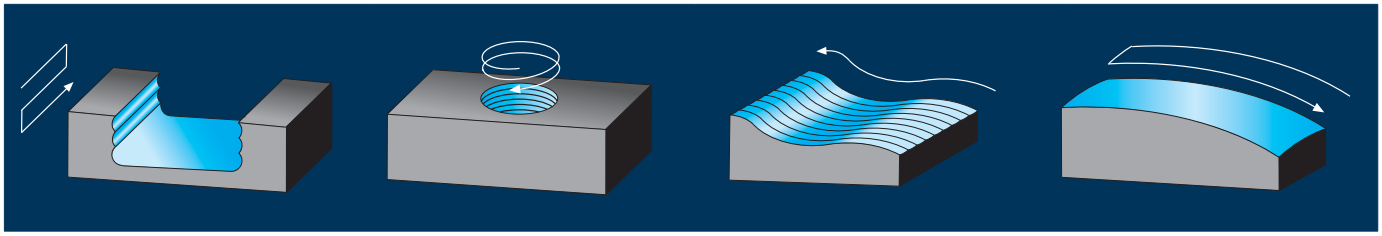
S 1503.9W ..

LNMT 060312 **h = 1**

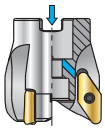
S809 Pag. 414

S 809W ..

RD.. 0501 **h = 2,5**
RD.. 0701 **h = 3,5**
RD.. 0702 **h = 3,5**
RD.. 1003 **h = 5**
RD.. 12T3 **h = 6**
RD.. 1604 **h = 8**



S926	Pag. 416	S9002. -6W..-11	Pag. 420	S9002. -9W..-11	Pag. 420		
 ØD = 8 - 32	 ØD = 12 - 32	 ØD = 16 - 25		 ØD = 16 - 25			
S 926 ..		S 9002-6W .. -11		S 9002-9W .. -11			
 **RA 08-32 r = 4-16** **RAE 10-25 r = 5-12,5** **RAET 10-25 r = 0,8-5,0**		 **VDKT 11T2 h = 8**					

S929	Pag. 418	S9002. -8W..-22	Pag. 422	S9002. -9W..-22	Pag. 422		
 ØD = 10 - 12	 ØD = 16 - 32	 ØD = 42 - 80		 ØD = 32 - 42			
S 929 ..		S 9002-8W .. -22		S 9002-9W .. -22			
 **RA 10-32 r = 5-16** **RAE 10-25 r = 5-12,5** **RAET 10-25 r = 0,8-5,0**		 **VCKT 2205 h = 15**					

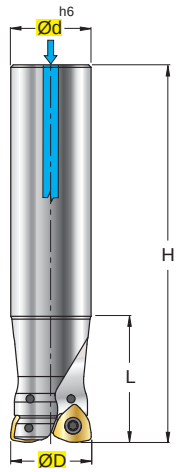
Frese per copiatura ad elevati avanzamenti
Copy milling cutters for high feeds
Kopierfräser für hohe vorschube
Fraises à copier avec hauts avancement

SAU QUALITY TOOLS ENGINEERING

S 846..W .. 06
S 846..W .. 08

Ø 25-40

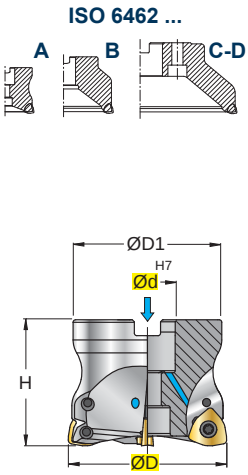
γ_p +5°/-4°
γ_f -2,8°
γ_o -5,8°



S 848..W .. 06
S 848..W .. 08
S 848..WF .. 08

Ø 40-100

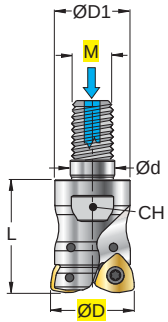
γ_p +5°
γ_f -3,5°
γ_o -6,2°



S 849..W .. 06
S 849..W .. 08

Ø 25-40

γ_p +4°/+5°
γ_f -2,8°
γ_o -5,7°



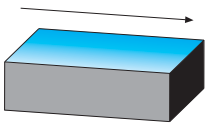
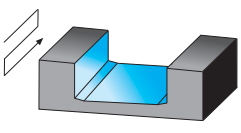
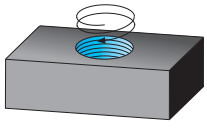
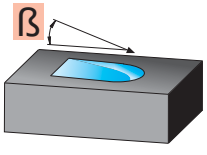
WPMT .. .N42 NEW

WPMW .. .N52 NEW

INSERTI - INSERTS PAG. 458

ART.		(mm) ØD	M	Ød	ØD1	H	L	ß	Z	CH	kg	Nm	ISO 6462					
S 846LW	025 - 06	25	–	25	–	140	60	5°	2	–	0,43	3,8÷5,0	–	06...	C04008P	5615P	–	2440
S 846LW	026 - 06	26	–	25	–	140	60	4,5°	2	–	0,44	3,8÷5,0	–					
S 846LW	032 - 06	32	–	32	–	150	70	3,5°	3	–	0,79	3,8÷5,0	–					
S 846LW	033 - 06	33	–	32	–	150	70	3°	3	–	0,80	3,8÷5,0	–					
S 846XLW	025 - 06	25	–	25	–	200	120	5°	2	–	0,60	3,8÷5,0	–	06...	C04008P	5615P	–	2440
S 846XLW	026 - 06	26	–	25	–	200	120	4,5°	2	–	0,62	3,8÷5,0	–					
S 846XLW	032 - 06	32	–	32	–	250	170	3,5°	3	–	1,29	3,8÷5,0	–					
S 846XLW	033 - 06	33	–	32	–	250	170	3°	3	–	1,32	3,8÷5,0	–					
S 846LW	032 - 08	32	–	32	–	150	50	10°	2	–	0,77	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 846LW	033 - 08	33	–	32	–	150	50	8°	2	–	0,78	4,0÷5,0	–					
S 846LW	040 - 08	40	–	32	–	150	50	6°	3	–	0,84	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 846GLW	040 - 08	40	–	32	–	150	50	6°	2	–	0,85	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 846XLW	032 - 08	32	–	32	–	250	50	10°	2	–	1,38	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 846XLW	033 - 08	33	–	32	–	250	50	8°	2	–	1,40	4,0÷5,0	–					
S 846XLW	040 - 08	40	–	32	–	250	50	6°	3	–	1,45	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 846GXLW	040 - 08	40	–	32	–	250	50	6°	2	–	1,46	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 848W	040 - 06	40	–	16	38	40	–	2°	3	–	0,21	3,8÷5,0	A	06...	C04008P	5615P	VBSF08L	2440
S 848W	050 - 08	50	–	22	48	50	–	4°	3	–	0,39	4,0÷5,0	A	08...	124513P	5520P	VBSF10AV	2445
S 848W	052 - 08	52	–	22	50	50	–	4°	3	–	0,45	4,0÷5,0	A					
S 848W	063 - 08	63	–	22	59	50	–	2,5°	4	–	0,65	4,0÷5,0	A	08...	124513P	5520P	VBSF10	2445
S 848W	066 - 08	66	–	27	63	50	–	2,5°	4	–	0,70	4,0÷5,0	A	08...	124513P	5520P	VBSF12	2445
S 848W	080 - 08	80	–	27	76	63	–	1,5°	5	–	1,47	4,0÷5,0	A	08...	124513P	5520P	VBSF12L	2445
S 848W	100 - 08	100	–	32	96	63	–	1°	6	–	2,45	4,0÷5,0	A	08...	124513P	5520P	VBSF16L	2445
S 848WF	050 - 08	50	–	22	48	50	–	4°	4	–	0,38	4,0÷5,0	A	08...	124513P	5520P	VBSF10AV	2445
S 848WF	052 - 08	52	–	22	50	50	–	4°	4	–	0,43	4,0÷5,0	A					
S 848WF	063 - 08	63	–	22	59	50	–	2,5°	5	–	0,67	4,0÷5,0	A	08...	124513P	5520P	VBSF10	2445
S 848WF	066 - 08	66	–	27	63	50	–	2,5°	5	–	0,73	4,0÷5,0	A	08...	124513P	5520P	VBSF12	2445
S 848WF	080 - 08	80	–	27	76	63	–	1,5°	6	–	1,51	4,0÷5,0	A	08...	124513P	5520P	VBSF12L	2445
S 848WF	100 - 08	100	–	32	96	63	–	1°	8	–	2,49	4,0÷5,0	A	08...	124513P	5520P	VBSF16L	2445
S 849W	025 - 06	25	12	12,5	21	–	35	5°	2	17	0,09	3,8÷5,0	–	06...	C04008P	5615P	–	2440
S 849W	026 - 06	26	12	12,5	21	–	35	4,5°	2	17	0,09	3,8÷5,0	–					
S 849W	032 - 06	32	16	17	29	–	43	3,5°	3	24	0,20	3,8÷5,0	–					
S 849W	033 - 06	33	16	17	29	–	43	3°	3	24	0,20	3,8÷5,0	–					
S 849W	032 - 08	32	16	17	29	–	43	10°	2	24	0,17	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 849W	033 - 08	33	16	17	29	–	43	8°	2	24	0,18	4,0÷5,0	–					
S 849W	040 - 08	40	16	17	29	–	43	6°	3	24	0,22	4,0÷5,0	–	08...	124512P	5620P	–	2445
S 849GW	040 - 08	40	16	17	29	–	43	6°	2	24	0,24	4,0÷5,0	–	08...	124512P	5620P	–	2445

PAG. 1001

W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.
L = LUNGA, STELO CILINDRICO - LONG, CYLINDRICAL SHANK - LANG, ZYLINDERSCHAFT - LONGUE, QUEUE CYLINDRIQUE
XL = EXTRALUNGA, STELO CILINDRICO - EXTRALONG, CYLINDRICAL SHANK - EXTRALANG, ZYLINDERSCHAFT - EXTRALONGUE, QUEUE CYLINDRIQUE

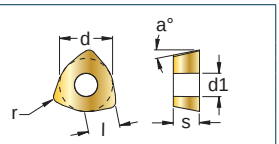
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

Pag. 424

COD.			P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F4140 NEW	HC T5120 NEW	l	d	s	d1	r	a°
WPMT	06X415 ZSR	.N42		●	○		●	○		○									○				■		6	9,52	4,20	4,3	1,5	11°
WPMT	080615 ZSR	.N42		●	○		●	○		○									○				■		8	12,7	6,35	5,4	1,5	11°
WPMW	06X415 ZSR	.N52		●	○		●	○		○									○				■		6	9,52	4,20	4,3	1,5	11°
			●	●	●				●	●	●								○					■						
WPMW	080615 ZSR	.N52		●	○		●	○		○									○				■		8	12,7	6,35	5,4	1,5	11°
			●	●	●				●	●	●								○					■						



FORMA DEL TAGLIENTE
CUTTING EDGE SHAPE

.N42 .N52

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ● ●

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ● ●

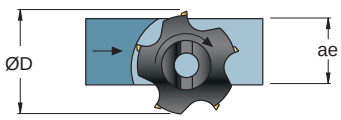
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm WP..06	fz0 mm WP..08	fz mm	Vc m/min Pag. 440 T5120	Vc m/min F4140
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,5-1,5	0,5-2	0,2	250	290
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,5-1,5	0,5-2	0,2	250	240
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,4-0,8	0,5-1	0,15	230	205
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,5-1,5	0,5-2	0,2	180	170
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,5-1,3	0,5-1,8	0,2		150
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,8-2	1-2,5	0,2	250	180
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,8-2	1-2,5	0,2	220	150
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,8-2	1-2,5	0,2	200	110
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130					
N	RAME E SUE LEGHE - COPPER	26--28	90-110					
N	NON METALLICI - PLASTICS	29-30	/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320					
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]					
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,3-0,6	0,4-0,8	0,1		140

$$n = \frac{Vc \cdot 1000}{\text{ØD} \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



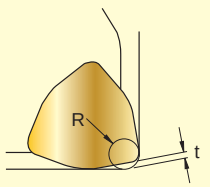
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

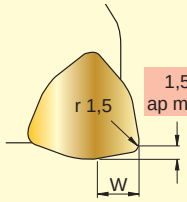
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc (min)---------Vc(max)				

Vc Pag. 440

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR





Inserto Insert	W (mm)	t (mm)	R (mm)
WPM..06	4,3	0,7	2,5
WPM..08	5,7	0,7	2,0

t = Materiale residuo
t = Residual Material

ap = Profondità massima di passata
ap = Maximum cutting depth

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

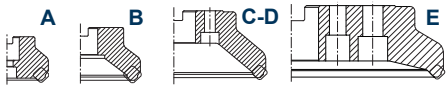
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

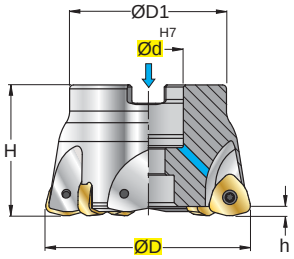
S 1502.8W .. 14

Ø 50-80

γ_p +15°
γ_f -12°/-9°
γ_o +12°

ISO 6462 ...

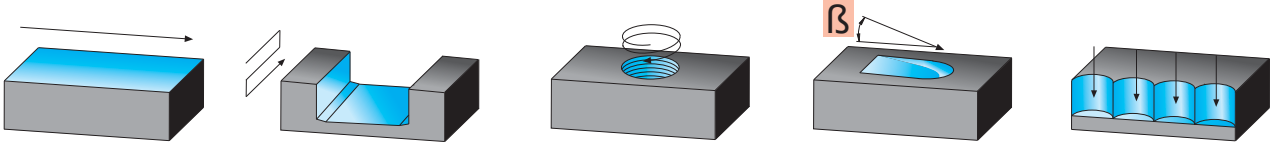




WNMT 1405.. .X52	

INSERTI - INSERTS
PAG. 458

ART.	(mm) ØD	Ød	ØD1	H	h	ß	Z	kg	Nm	ISO 6462				
S 1502.8W-050-03-14	50	22	40	40	2	4,3°	3	0,24	3,8÷5,0	A	1405	C04011P	5615P	VBSF10
S 1502.8W-050-04-14	50	22	40	40	2	4,3°	4	0,21	3,8÷5,0	A				
S 1502.8W-052-03-14	52	22	40	40	2	4°	3	0,27	3,8÷5,0	A				
S 1502.8W-052-04-14	52	22	40	40	2	4°	4	0,24	3,8÷5,0	A				
S 1502.8W-063-04-14	63	22	49	40	2	2,7°	4	0,44	3,8÷5,0	A				
S 1502.8W-063-05-14	63	22	49	40	2	2,7°	5	0,42	3,8÷5,0	A				
S 1502.8W-066-04-14	66	22	49	40	2	2,5°	4	0,48	3,8÷5,0	A				
S 1502.8W-066-05-14	66	22	49	40	2	2,5°	5	0,46	3,8÷5,0	A				
S 1502.8W-080-05-14	80	27	60	50	2	1,9°	5	1,02	3,8÷5,0	A	1405	C04011P	5615P	VBSF12
S 1502.8W-080-06-14	80	27	60	50	2	1,9°	6	0,99	3,8÷5,0	A				



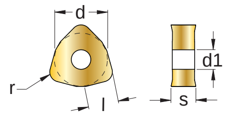
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424



HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	F4130	T5120	l	d	s	d1	r	a°
WNMT 140525 .X52	●	●		●	●			○									○		■		7	13,7	5,5	4,9	2,5	–
	●	●	●				●	●	●								○			■						

	F4130	T5120
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY	○	○
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	●	○

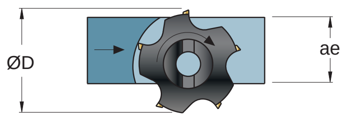
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm 1) HRC 2)	fz0 mm	fz mm	Vc m/min Pag. 440 T5120	F4130
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,3-1,5	0,06-0,1	250	240
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,3-1,5	0,06-0,1	250	220
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,3-1,0	0,06-0,1	230	200
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,3-1,0	0,06-0,1	180	180
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,3-0,7	0,06-0,1		170
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,4-1,5	0,06-0,1	250	190
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,4-1,5	0,06-0,1	220	170
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,4-1,5	0,06-0,1	200	130
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130				
N	RAME E SUE LEGHE - COPPER	26--28	90-110				
N	NON METALLICI - PLASTICS	29-30	/				
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320				
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)				
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)	0,2-0,7	0,06-0,1		50

$$n = \frac{Vc \cdot 1000}{ØD \cdot 3{,}14} = \text{giri/min } (min^{-1})$$

$$fz = fz0 \cdot Kae = mm$$

$$fn = fz \cdot z = mm$$

$$Vf = fz \cdot z \cdot n = mm/min$$



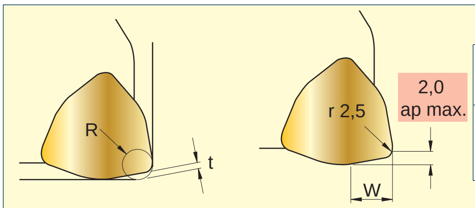
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
	Vc (min)---------Vc(max)			

Vc Pag. 440

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



Inserto Insert	W (mm)	t (mm)	R (mm)
WNMT 14	6,6	0,85	3,5

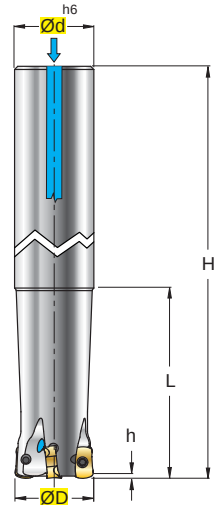
t = Materiale residuo
t = Residual Material
ap = Profondità massima di passata
ap = Maximum cutting depth

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 1503.6LW .. 06

Ø 16-35 NEW

γ_p +14°
γ_f -13°/-10°
γ_o +1°/+3°

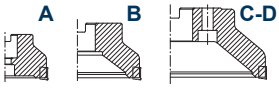


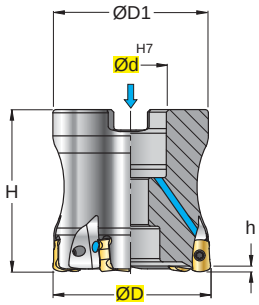
S 1503.8W .. 06

Ø 40-50 NEW

γ_p +14°
γ_f -10°/-9,5°
γ_o +3°

ISO 6462 ...

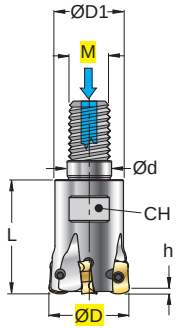




S 1503.9W .. 06

Ø 16-32 NEW

γ_p +14°
γ_f -13°/-10°
γ_o +1°/+3°

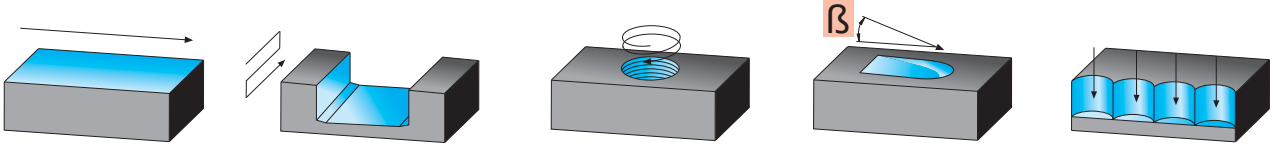


LNMT 060312 .X52 NEW

INSERTI - INSERTS PAG. 451

(mm)

ART.	ØD	M	Ød	ØD1	H	L	h	ß	Z	CH	kg	Nm	ISO 6462				
S 1503.6LW-016-02-06	16	–	16	–	100	30	1	3,5°	2	–	0,13	1,1÷1,3	–	0603	122555PK	5608	–
S 1503.6LW-018-02-06	18	–	16	–	100	30	1	2,7°	2	–	0,14	1,1÷1,3	–				
S 1503.6LW-020-03-06	20	–	20	–	130	50	1	2,3°	3	–	0,26	1,1÷1,3	–				
S 1503.6LW-020-04-06	20	–	20	–	130	50	1	2,3°	4	–	0,26	1,1÷1,3	–				
S 1503.6LW-022-03-06	22	–	20	–	130	50	1	1,9°	3	–	0,27	1,1÷1,3	–				
S 1503.6LW-022-04-06	22	–	20	–	130	50	1	1,9°	4	–	0,28	1,1÷1,3	–				
S 1503.6LW-025-04-06	25	–	25	–	140	60	1	1,6°	4	–	0,46	1,1÷1,3	–				
S 1503.6LW-025-05-06	25	–	25	–	140	60	1	1,6°	5	–	0,45	1,1÷1,3	–				
S 1503.6LW-028-04-06	28	–	25	–	140	60	1	1,3°	4	–	0,48	1,1÷1,3	–				
S 1503.6LW-028-05-06	28	–	25	–	140	60	1	1,3°	5	–	0,48	1,1÷1,3	–				
S 1503.6LW-030-04-06	30	–	32	–	150	70	1	1,2°	4	–	0,80	1,1÷1,3	–				
S 1503.6LW-030-05-06	30	–	32	–	150	70	1	1,2°	5	–	0,80	1,1÷1,3	–				
S 1503.6LW-032-05-06	32	–	32	–	150	70	1	1,1°	5	–	0,81	1,1÷1,3	–				
S 1503.6LW-032-06-06	32	–	32	–	150	70	1	1,1°	6	–	0,81	1,1÷1,3	–				
S 1503.6LW-035-05-06	35	–	32	–	150	35	1	1,0°	5	–	0,88	1,1÷1,3	–				
S 1503.6LW-035-06-06	35	–	32	–	150	35	1	1,0°	6	–	0,88	1,1÷1,3	–				
S 1503.8W-040-06-06	40	–	16	35	50	–	1	0,8°	6	–	0,21	1,1÷1,3	A	0603	122555PK	5608	VBSF08L
S 1503.8W-040-08-06	40	–	16	35	50	–	1	0,8°	8	–	0,20	1,1÷1,3	A				
S 1503.8W-050-07-06	50	–	22	48	50	–	1	0,6°	7	–	0,46	1,1÷1,3	A	0603	122555PK	5608	VBSF10L
S 1503.8W-050-09-06	50	–	22	48	50	–	1	0,6°	9	–	0,45	1,1÷1,3	A				
S 1503.9W-016-02-06	16	8	8,5	13	42	25	1	3,5°	2	10	0,03	1,1÷1,3	–	0603	122555PK	5608	–
S 1503.9W-018-02-06	18	8	8,5	13	42	25	1	2,7°	2	10	0,03	1,1÷1,3	–				
S 1503.9W-020-03-06	20	10	10,5	17,8	49	30	1	2,3°	3	15	0,06	1,1÷1,3	–				
S 1503.9W-020-04-06	20	10	10,5	17,8	49	30	1	2,3°	4	15	0,05	1,1÷1,3	–				
S 1503.9W-022-03-06	22	10	10,5	18	49	30	1	1,9°	3	15	0,06	1,1÷1,3	–				
S 1503.9W-022-04-06	22	10	10,5	18	49	30	1	1,9°	4	15	0,06	1,1÷1,3	–				
S 1503.9W-025-04-06	25	12	12,5	21	57	35	1	1,6°	4	17	0,10	1,1÷1,3	–				
S 1503.9W-025-05-06	25	12	12,5	21	57	35	1	1,6°	5	17	0,09	1,1÷1,3	–				
S 1503.9W-028-04-06	28	12	12,5	21	57	35	1	1,3°	4	17	0,11	1,1÷1,3	–				
S 1503.9W-028-05-06	28	12	12,5	21	57	35	1	1,3°	5	17	0,10	1,1÷1,3	–				
S 1503.9W-030-04-06	30	16	17	27	64	40	1	1,2°	4	24	0,20	1,1÷1,3	–				
S 1503.9W-030-05-06	30	16	17	27	64	40	1	1,2°	5	24	0,19	1,1÷1,3	–				
S 1503.9W-032-05-06	32	16	17	29	64	40	1	1,1°	5	24	0,21	1,1÷1,3	–				
S 1503.9W-032-06-06	32	16	17	29	64	40	1	1,1°	6	24	0,21	1,1÷1,3	–				



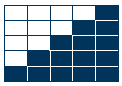
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
L = LUNGA , STELO CILINDRICO - LONG , CYLINDRICAL SHANK - LANG , ZYLINDERSCHAFT - LONGUE , QUEUE CYLINDRIQU

PAG. 1001

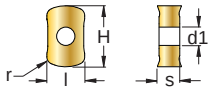
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -



Pag. 424



COD.			P			M			K			N			S			H		
			F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
LNMT	060312	.X52	●	●		●	●			○									○	
			●	●	●				●	●	●								○	

HT	HW	HC																	
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS																	
		F4130							T5120										

l	H	s	d1	r	a°
6,2	10	3,65	3	1,2	–

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ○ ○

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ● ○

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm	fz mm	Vc m/min Pag. 440 T5120	F4130
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	0,5-2	0,1-0,15	250	240
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,5-2	0,1-0,15	250	220
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,3-1,5	0,1-0,15	230	200
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,3-1,5	0,1-0,15	180	180
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,3-1,5	0,1-0,15		170
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,5-1,8	0,1-0,2	250	190
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,5-1,8	0,1-0,2	220	170
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,5-1,8	0,1-0,2	200	130
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130				
	RAME E SUE LEGHE - COPPER	26--28	90-110				
	NON METALLICI - PLASTICS	29-30	/				
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,3-0,7	0,03-0,05		
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,1-0,3	0,06-0,08		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,05-0,3	0,05-0,08		100

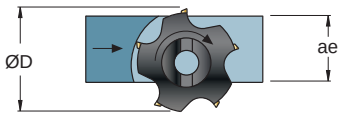
⚠ - SE LA SPORGENZA DELLA FRESA É **>3xD** RIDURRE I PARAMETRI DI LAVORO: **Vc, fz, ap** DEL 30%
- IF THE PROTRUSION OF THE CUTTER IS **>3xD**, REDUCE CUTTING PARAMETERS: **Vc, fz, ap** BY 30%

$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3{,}14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

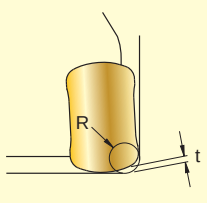
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%

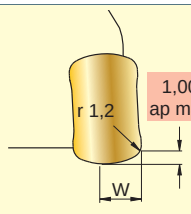
Vc (min)---------Vc(max)

Vc Pag. 440

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR





Inserto Insert	W (mm)	t (mm)	R (mm)
LNMT 06	3,2	0,3	1,65

t = Materiale residuo
t = Residual Material

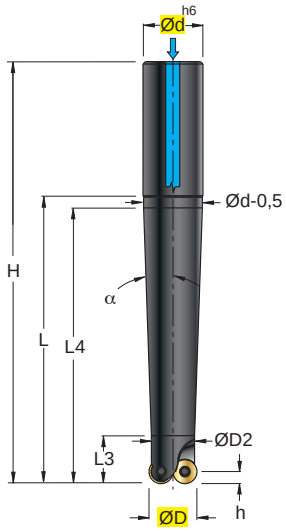
ap = Profondità massima di passata
ap = Maximum cutting depth

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

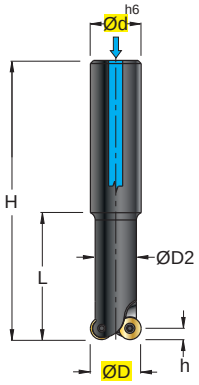
S 806W ..

Ø 12,5-20

FORM A



FORM B



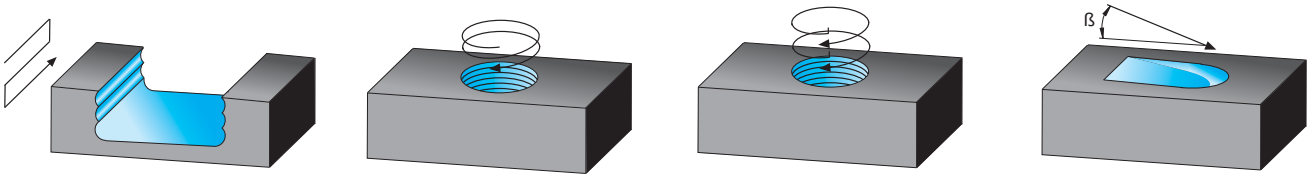
γ_p 0°
γ_f 0°

RDHX.. .T42	NEW
RDET.. .T56	NEW
RDEW.. .T56	NEW
RDHT.. .T57P	NEW

INSERTI - INSERTS PAG. 452

(mm)

ART.	FORM	ØD	Ød	ØD2	H	h	L	L3	L4	α	ß	Z	kg	Nm			
S 806W 12,5 40 02.71 New	A	12,5	16	10	88	3,5	40	20	35	10,4°	22,7°	2	0,102	1,0÷1,2	07T1	12253	5607
S 806W 12,5 60 02.71 New	A	12,5	16	10	108	3,5	60	20	55	4,3°	22,7°	2	0,120	1,0÷1,2			
S 806W 12,5 80 02.71 New	A	12,5	16	10	128	3,5	80	20	75	2,9°	22,7°	2	0,139	1,0÷1,2			
S 806W 15 40 02.72	B	15	16	13	88	3,5	40	–	–	–	20°	2	0,106	1,0÷1,2	0702	12253	5607
S 806W 15 60 02.72	A	15	16	13	108	3,5	60	20	55	2,0°	20°	2	0,135	1,0÷1,2			
S 806W 15 80 02.72	A	15	20	13	130	3,5	80	20	75	3,4°	20°	2	0,232	1,0÷1,2			
S 806W 15 100 02.72	A	15	20	13	150	3,5	100	20	95	2,5°	20°	2	0,263	1,0÷1,2			
S 806W 15 120 02.72	A	15	25	13	176	3,5	120	20	115	3,5°	20°	2	0,447	1,0÷1,2			
S 806W 16 40 02.72	B	16	16	13	88	3,5	40	–	–	–	16,8°	2	0,107	1,0÷1,2	0702	12253	5607
S 806W 16 60 02.72	A	16	16	13	108	3,5	60	20	55	2,0°	16,8°	2	0,135	1,0÷1,2			
S 806W 16 80 02.72	A	16	20	13	130	3,5	80	20	75	3,4°	16,8°	2	0,232	1,0÷1,2			
S 806W 16 100 02.72	A	16	20	13	150	3,5	100	20	95	2,5°	16,8°	2	0,263	1,0÷1,2			
S 806W 16 120 02.72	A	16	25	13	176	3,5	120	20	115	3,5°	16,8°	2	0,449	1,0÷1,2			
S 806W 20 40 02.10	A	20	20	18	90	5	40	20	35	2,9°	39°	2	0,181	3,0÷3,5	1003	123507	5615
S 806W 20 60 02.10	A	20	20	18	110	5	60	20	55	1,3°	39°	2	0,222	3,0÷3,5			
S 806W 20 80 02.10	A	20	25	18	136	5	80	20	75	3,4°	39°	2	0,396	3,0÷3,5			
S 806W 20 100 02.10	A	20	25	18	156	5	100	20	95	2,5°	39°	2	0,450	3,0÷3,5			
S 806W 20 120 02.10	A	20	25	18	176	5	120	20	115	2,0°	39°	2	0,503	3,0÷3,5			



W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità / Toughness + -

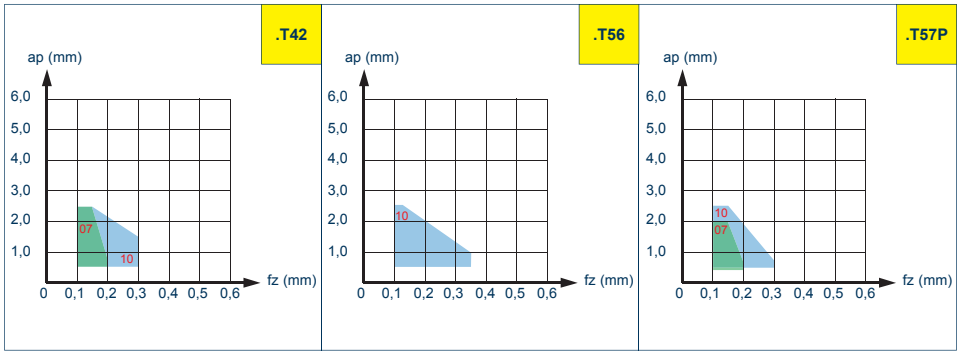
Pag. 424

COD.				P F	P M	P HSC	M F	M M	M HSC	K F	K M	K HSC	N F	N M	N HSC	S F	S M	S HSC	H F	H M	H HSC	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES NEW N3620	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS NEW F5105	HC NEW F4325	HC NEW F4330	l	d	s	d1	r	a°
RDHX	07T1	MOT	.T42	●	●					●	●								●	●				■				–	7,0	1,98	2,8	–	15
RDHX	0702	MOT	.T42	●	●					●	●								●	●				■				–	7,0	2,38	2,8	–	15
RDHX	1003	MOT	.T42	●	●					●	●								●	●				■				–	10,0	3,18	3,9	–	15
RDET	1003	MOSN	.T56		●	●	●	●	●							●	●								■	■	–	10,0	3,18	4,4	–	15
RDEW	1003	MOSN	.T56		●	●	●	●	●																	■	–	10,0	3,18	4,4	–	15
RDHT	07T1	MO	.T57P										●	●										■				–	7,0	1,98	2,8	–	15
RDHT	0702	MO	.T57P										●	●										■				–	7,0	2,38	2,8	–	15
RDHT	1003	MO	.T57P										●	●										■				–	10,0	3,18	3,9	–	15
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																								○	●	●	●						
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																								●	●	○	○						

MATERIALI - MATERIALS

Pag. 1063

		VDI 3323 GR.	HB Rm[1] HRC[2]	Km	F5105 Vc (m/min) F	F5105 R	F5105 HSC	N3620 F	N3620 R	N3620 HSC	F4325 F	F4325 R	F4325 HSC	F4330 F	F4330 R	F4330 HSC
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	1	260	220	310							250	210	300
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,9	280	270	300							265	250	280
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,8	230	210	250							200	180	225
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	1	200	150	180							130	110	150
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	1							120	100	160	140	110	180
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	1	300	260	330									
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	1,1	240	230	280									
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	1,2	260	230	280									
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	1,3				430	400	450						
N	RAME E SUE LEGHE - COPPER	26--28	90-110	1,2				280	250	335						
N	NON METALLICI - PLASTICS	29-30	/	1,3				380	350	400						
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,9							50	25	70			
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,8							80	40	95			
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,8	120	80	140									



$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

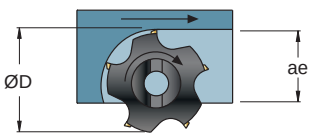
$$fz = fz0 \cdot Kae \cdot Km = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	1,8	2

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING
HSC = LAVORAZIONE ALTA VELOCITÀ - HIGH SPEED CUTTING
Km = FATTORE DI AVANZAMENTO PER MATERIALE -FEED FACTOR FOR MATERIAL
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REV.
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

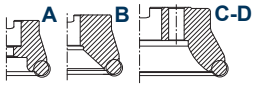
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

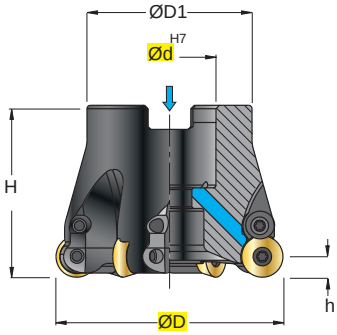
S 808W ..

Ø 50-160

γ_p 0°
γ_f 0°

ISO 6462 ...





RDHX.. .T42	
RDET.. .T56	
RDEX.. .T56	
RDEW.. .T56	
RDHT.. .T57P	


INSERTI - INSERTS
PAG. 452

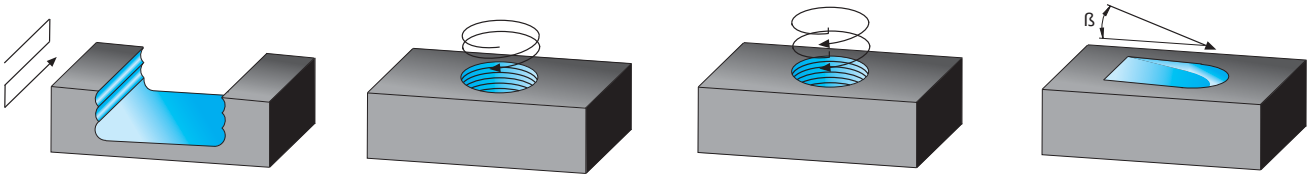
ART.	(mm) ØD	Ød	ØD1	H	h	ß	Z	kg	Nm	ISO 6462		*		
S 808W 50 50 05.12	50	22	40	50	6	6,1°	5	0,308	3,0÷3,5	A	12T3	123509P	2435	5615P	VBSF10
S 808W 52 50 05.12	52	22	40	50	6	5,7°	5	0,337	3,0÷3,5	A					
S 808W 63 50 06.12	63	27	48	50	6	4,3°	6	0,477	3,0÷3,5	A	12T3	123509P	2435	5615P	VBSF12
S 808W 66 50 06.12	66	27	48	50	6	4,1°	6	0,524	3,0÷3,5	A					
S 808W 80 52 07.12	80	27	60	52	6	3,2°	7	0,889	3,0÷3,5	A-B					
S 808W 50 50 04.16	50	22	40	50	8	9,5°	4	0,273	4,0÷5,0	A	1604	124510	2445	5620	VBSF10
S 808W 52 50 04.16	52	22	40	50	8	8,8°	4	0,299	4,0÷5,0	A					
S 808W 63 50 05.16	63	27	48	50	8	7,1°	5	0,443	4,0÷5,0	A	1604	124510	2445	5620	VBSF12
S 808W 66 50 05.16	66	27	48	50	8	6,0°	5	0,493	4,0÷5,0	A					
S 808W 80 52 06.16	80	27	60	52	8	4,5°	6	0,833	4,0÷5,0	A-B					
S 808W 100 52 07.16	100	32	75	52	8	3,7°	7	1,276	4,0÷5,0	A-B	1604	124510	2445	5620	VBSF16
S 808W 125 63 08.16	125	40	90	63	8	2,8°	8	2,664	4,0÷5,0	A-B	1604	124510	2445	5620	VBSF20
S 808 160 63 09.16	160	40	120	63	8	1,8°	9	4,183	4,0÷5,0	C	1604	124510	2445	5620	–

* **CON INSERTI *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P* NON É POSSIBILE UTILIZZARE LA STAFFA *24..***

* **WITH *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P* INSERTS THE CLAMPING SCREW *24..* CANNOT BE USED.**

* **MIT *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P*-WENDEPLATTEN IST DIE AUFSPANNSCHRAUBE *24..* NICHT EINSETZBAR.**

* **AVEC LES PLAQUETTES *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P* ON NE PEUT PAS UTILISER LA VIS DE BRIDAGE *24..***



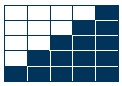
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

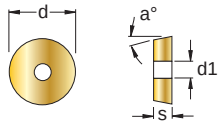
Tenacità / Toughness + -



Pag. 424

COD.				P			M			K			N			S			H		
				F	M	HSC	F	M	HSC	F	M	HSC	F	M	HSC	F	M	HSC	F	M	HSC
RDHX	12T3	MOT	.T42	●	●					●	●								●	●	
RDHX	1604	MOT	.T42	●	●					●	●								●	●	
RDET	12T3	MOSN	.T56					●	●							●	●				
					●	●	●	●	●												
RDEX	1604	MOSN	.T56					●	●							●	●				
					●	●	●	●	●												
RDEW	12T3	MOSN	.T56		●	●	●	●	●												
RDEW	1604	MOSN	.T56		●	●	●	●	●												
RDHT	12T3	MO	.T57P										●	●							
RDHT	1604	MO	.T57P										●	●							

HT	HW	HC					
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS					
	NEW N3620	NEW F5105			NEW F4325	NEW F4330	

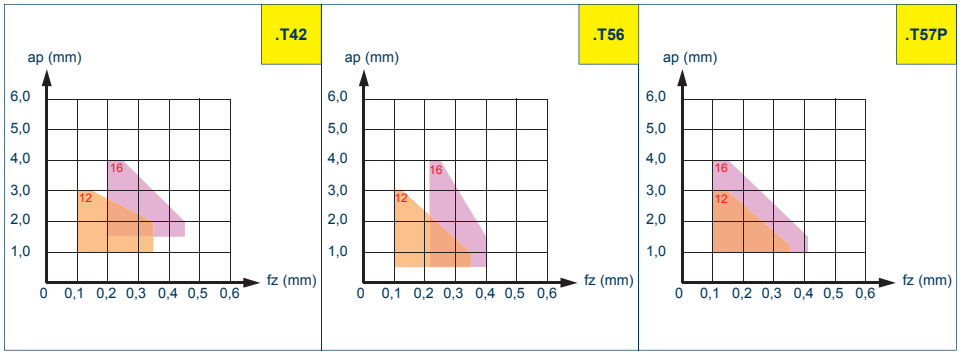


l	d	s	d1	r	a°
–	12,0	3,97	3,9	–	15
–	16,0	4,76	5,2	–	15
–	12,0	3,97	4,4	–	15
–	16,0	4,76	5,5	–	15
–	12,0	3,97	4,4	–	15
–	16,0	4,76	5,5	–	15
–	12,0	3,97	3,9	–	15
–	16,0	4,76	5,2	–	15

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	Km	F5105 Vc (m/min)			N3620 Vc (m/min)			F4325 Vc (m/min)			F4330 Vc (m/min)			F5105 Vc (m/min)		
					F	R	HSC	F	R	HSC	F	R	HSC	F	R	HSC	F	R	HSC
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	1	260	220	310							250	210	300	260	220	310
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,9	280	270	300							265	250	280	280	270	300
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,8	230	210	250							200	180	225	230	210	250
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	1	200	150	180							130	110	150	200	150	180
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	1							120	100	160	140	110	180			
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	1	300	260	330										300	260	330
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	1,1	240	230	280										240	230	280
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	1,2	260	230	280										260	230	280
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	1,3				430	400	450									
N	RAME E SUE LEGHE - COPPER	26--28	90-110	1,2				280	250	335									
N	NON METALLICI - PLASTICS	29-30	/	1,3				380	350	400									
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,9							50	25	70						
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,8							80	40	95						
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,8	120	80	140										120	80	140



$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae \cdot Km = \text{mm}$$

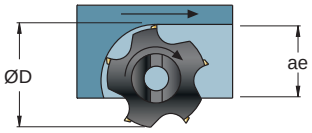
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	1,8	2

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING
HSC = LAVORAZIONE ALTA VELOCITÀ - HIGH SPEED CUTTING
Km = FATTORE DI AVANZAMENTO PER MATERIALE -FEED FACTOR FOR MATERIAL
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REV.
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

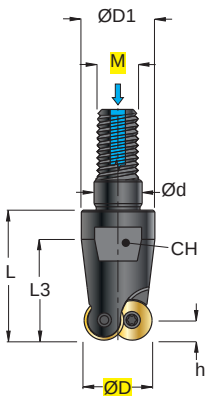
S 809W ..

Ø 10-42

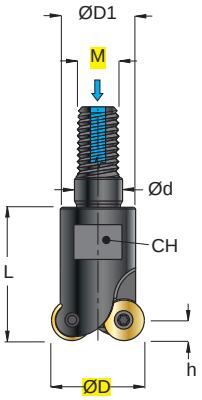
* CON INSERTI *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P* NON É POSSIBILE UTILIZZARE LA STAFFA *24..*
* WITH *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P* INSERTS THE CLAMPING SCREW *24..* CANNOT BE USED.D..
* MIT *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P*-WENDEPLATTEN IST DIE AUFSPANNSCHRAUBE *24..* NICHT EINSETZBAR.
* AVEC LES PLAQUETTES *RDET.. .T56 / RDEX.. .T56 / RDHT.. .T57P* ON NE PEUT PAS UTILISER LA VIS DE BRIDAGE *24..*

γ_p 0°
γ_f 0°

FORM A



FORM B



RDHX.. .T42

RDET.. .T56

RDEX.. .T56

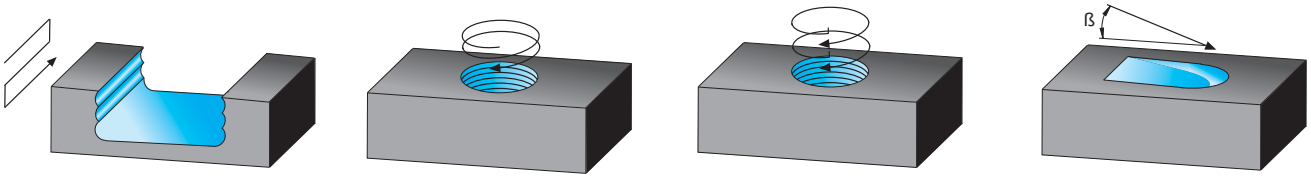
RDEW.. .T56

RDHT.. .T57P

INSERTI - INSERTS
PAG. 452

(mm)

ART.	FORM	ØD	M	Ød	ØD1	h	L	L3	ß	Z	CH	kg	Nm		121837	*	5606
S 809W 10 23 02.05	A	10	8	8,5	13	2,5	23	17	28,9°	2	10	0,019	0,4÷0,5	0501			
S 809W 12 23 03.05	A	12	8	8,5	13	2,5	23	17	13,8°	3	10	0,020	0,4÷0,5				
S 809W 15 23 04.05	B	15	8	8,5	13	2,5	23	–	8,6°	4	10	0,023	0,4÷0,5				
S 809W 16 23 04.05	B	16	8	8,5	13	2,5	23	–	7,7°	4	10	0,025	0,4÷0,5				
S 809W 20 30 05.05	B	20	10	10,5	18	2,5	30	–	6,9°	5	15	0,059	0,4÷0,5				
S 809W 25 35 06.05	B	25	12	12,5	21	2,5	35	–	4,0°	6	17	0,099	0,4÷0,5				
S 809W 12,5 23 02.71 New	A	12,5	8	8,5	13	3,5	23	17	22,7°	2	10	0,019	1,0÷1,2	07T1	12253	–	5607
S 809W 15 23 02.72	B	15	8	8,5	13	3,5	23	–	20,0°	2	10	0,020	1,0÷1,2	0702	12253	–	5607
S 809W 15 23 03.72	B	15	8	8,5	13	3,5	23	–	20,0°	3	10	0,021	1,0÷1,2				
S 809W 16 23 02.72	B	16	8	8,5	13	3,5	23	–	16,8°	2	10	0,022	1,0÷1,2				
S 809W 16 23 03.72	B	16	8	8,5	13	3,5	23	–	16,8°	3	10	0,022	1,0÷1,2				
S 809W 20 30 04.72	B	20	10	10,5	18	3,5	30	–	11,0°	4	15	0,054	1,0÷1,2				
S 809W 25 35 05.72	B	25	12	12,5	21	3,5	35	–	7,3°	5	17	0,093	1,0÷1,2				
S 809W 30 43 05.72	A	30	16	17	29	3,5	43	43	5,4°	5	24	0,208	1,0÷1,2				
S 809W 32 43 06.72	B	32	16	17	29	3,5	43	–	4,9°	6	24	0,219	1,0÷1,2				
S 809W 35 43 06.72	B	35	16	17	29	3,5	43	–	4,3°	6	24	0,233	1,0÷1,2				
S 809W 20 30 02.10	B	20	10	10,5	18	5	30	–	39,0°	2	15	0,048	3,0÷3,5	1003	123507	–	5615
S 809W 25 35 03.10	B	25	12	12,5	21	5	35	–	14,3°	3	17	0,083	3,0÷3,5				
S 809W 30 43 04.10	A	30	16	17	29	5	43	43	9,3°	4	24	0,196	3,0÷3,5				
S 809W 32 43 04.10	A	32	16	17	29	5	43	43	8,6°	4	24	0,200	3,0÷3,5				
S 809W 35 43 04.10	B	35	16	17	29	5	43	–	7,3°	4	24	0,215	3,0÷3,5				
S 809W 35 43 05.10	B	35	16	17	29	5	43	–	7,3°	5	24	0,216	3,0÷3,5				
S 809W 40 43 05.10	B	40	16	17	29	5	43	–	5,8°	5	24	0,232	3,0÷3,5				
S 809W 42 43 05.10	B	42	16	17	29	5	43	–	5,4°	5	24	0,243	3,0÷3,5				
S 809W 42 43 06.10	B	42	16	17	29	5	43	–	5,4°	6	24	0,245	3,0÷3,5				
S 809W 25 35 02.12	B	25	12	12,5	21	6	35	–	26,0°	2	17	0,076	3,0÷3,5	12T3	123509P	2435	5615
S 809W 32 43 03.12	A	32	16	17	29	6	43	43	14,3°	3	24	0,178	3,0÷3,5				
S 809W 35 43 03.12	B	35	16	17	29	6	43	–	11,9°	3	24	0,194	3,0÷3,5				
S 809W 40 43 04.12	B	40	16	17	29	6	43	–	9,3°	4	24	0,212	3,0÷3,5				
S 809W 42 43 04.12	B	42	16	17	29	6	43	–	8,3°	4	24	0,224	3,0÷3,5				
S 809W 32 43 02.16	A	32	16	17	29	8	43	43	29,6°	2	24	0,169	4,0÷5,0	1604	124510	2445	5620
S 809W 40 43 02.16	B	40	16	17	29	8	43	–	15°	2	24	0,226	4,0÷5,0				



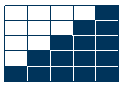
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

PAG. 1001

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

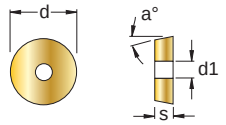
Tenacità / Toughness + -



Pag. 424

COD.				P			M			K			N			S			H		
				F	M	HSC	F	M	HSC	F	M	HSC	F	M	HSC	F	M	HSC	F	M	HSC
RDHX	0501	MOE	.T42	●	●					●	●								●	●	
RDHX	07T1	MOT	.T42	●	●					●	●								●	●	
RDHX	0702	MOT	.T42	●	●					●	●								●	●	
RDHX	1003	MOT	.T42	●	●					●	●								●	●	
RDHX	12T3	MOT	.T42	●	●					●	●								●	●	
RDHX	1604	MOT	.T42	●	●					●	●								●	●	
RDET	1003	MOSN	.T56					●	●							●	●				
							●	●	●												
RDET	12T3	MOSN	.T56					●	●							●	●				
							●	●	●												
RDEX	1604	MOSN	.T56					●	●							●	●				
							●	●	●												
RDEW	1003	MOSN	.T56		●	●	●	●	●												
RDEW	12T3	MOSN	.T56		●	●	●	●	●												
RDEW	1604	MOSN	.T56		●	●	●	●	●												
RDHT	07T1	MO	.T57P										●	●							
RDHT	0702	MO	.T57P										●	●							
RDHT	1003	MO	.T57P										●	●							
RDHT	12T3	MO	.T57P										●	●							
RDHT	1604	MO	.T57P										●	●							

HT	HW	HC					
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS					
	NEW N3620	NEW F5105			NEW F4325	NEW F4330	



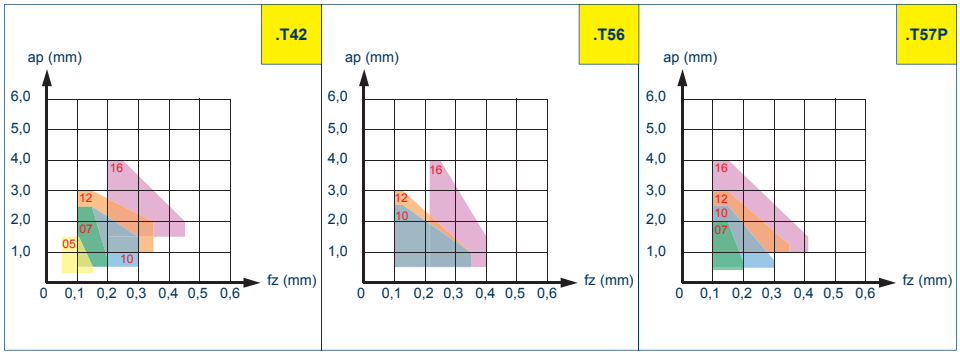
l	d	s	d1	r	a°
–	5,0	1,51	2,2	–	15
–	7,0	1,98	2,8	–	15
–	7,0	2,38	2,8	–	15
–	10,0	3,18	3,9	–	15
–	12,0	3,97	3,9	–	15
–	16,0	4,76	5,2	–	15
–	10,0	3,18	4,4	–	15
–	12,0	3,97	4,4	–	15
–	16,0	4,76	5,5	–	15
–	10,0	3,18	4,4	–	15
–	12,0	3,97	4,4	–	15
–	16,0	4,76	5,5	–	15
–	7,0	1,98	2,8	–	15
–	7,0	2,38	2,8	–	15
–	10,0	3,18	3,9	–	15
–	12,0	3,97	3,9	–	15
–	16,0	4,76	5,2	–	15

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY					○			●					●	●							
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY					●			●					○	○							

MATERIALI - MATERIALS

Pag. 1063

		VDI 3323 GR.	HB Rm[1] HRC[2]	Km	F5105 Vc (m/min) F	R	HSC	N3620 Vc (m/min) F	R	HSC	F4325 Vc (m/min) F	R	HSC	F4330 Vc (m/min) F	R	HSC
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	1	260	220	310							250	210	300					
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	0,9	280	270	300							265	250	280					
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,8	230	210	250							200	180	225					
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	1	200	150	180							130	110	150					
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	1							120	100	160	140	110	180					
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	1	300	260	330														
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	1,1	240	230	280														
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	1,2	260	230	280														
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	1,3				430	400	450											
N	RAME E SUE LEGHE - COPPER	26--28	90-110	1,2				280	250	335											
N	NON METALLICI - PLASTICS	29-30	/	1,3				380	350	400											
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,9							50	25	70								
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,8							80	40	95								
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,8	120	80	140														



$$n = \frac{Vc \cdot 1000}{ØD \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae \cdot Km = \text{mm}$$

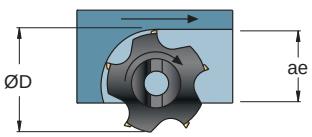
$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	1,8	2

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING
HSC = LAVORAZIONE ALTA VELOCITÀ - HIGH SPEED CUTTING
Km = FATTORE DI AVANZAMENTO PER MATERIALE -FEED FACTOR FOR MATERIAL
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REV.
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



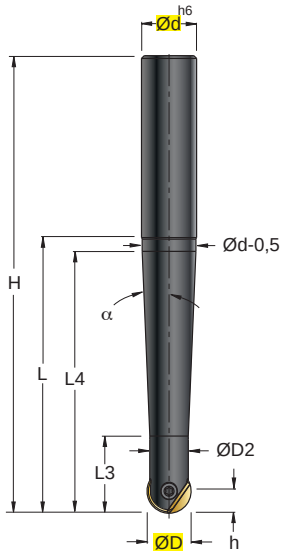
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

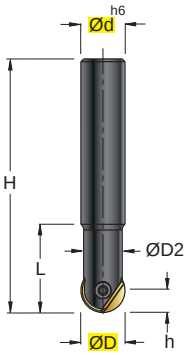
S 926 ..

Ø 8-32

FORM A



FORM B



RA.. .K32W	
RAET.. .P42	

INSERTI - INSERTS PAG. 452

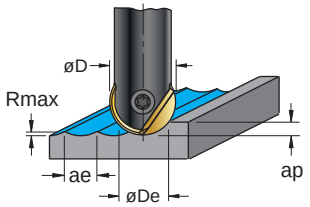
(mm)

ART.	FORM	ØD	Ød	ØD2	H	h	L	L3	L4	α	N	Z	kg	Nm			
S 926 08 35 12	A	8	12	6,5	92	4	35	19	35	9,8°	1	2	0,062	0,8÷1,0	08	12RA08	5407
S 926 08 53 12	A	8	12	6,5	110	4	53	19	48	5,0°	1	2	0,072	0,8÷1,0			
S 926 08 75 12	A	8	12	6,5	132	4	75	19	70	2,8°	1	2	0,083	0,8÷1,0			
S 926 10 35 12	A	10	12	8	92	5	35	22	35	8,9°	1	2	0,065	1,8÷2,0	10	12RA10	5408
S 926 10 53 12	A	10	12	8	110	5	53	22	48	3,9°	1	2	0,076	1,8÷2,0			
S 926 10 75 12	A	10	12	8	132	5	75	22	70	2,1°	1	2	0,088	1,8÷2,0			
S 926 12 26 12	B	12	12	10	83	6	26	–	–	–	1	2	0,062	2,8÷3,0	12	12RA12	5410
S 926 12 53 12	B	12	12	10	110	6	53	–	–	–	1	2	0,078	2,8÷3,0			
S 926 12 85 16	A	12	16	10	145	6	85	22	80	2,8°	1	2	0,167	2,8÷3,0			
S 926 16 32 16	B	16	16	14	92	8	32	–	–	–	1	2	0,123	4,5÷5,5	16	12RA16	5415
S 926 16 63 16	B	16	16	14	123	8	63	–	–	–	1	2	0,159	4,5÷5,5			
S 926 16 100 20	A	16	20	14	166	8	100	28	95	2,4°	1	2	0,312	4,5÷5,5			
S 926 20 38 20	B	20	20	17	104	10	38	–	–	–	1	2	0,211	5,5÷7,0	20	12RA20	5420
S 926 20 75 20	B	20	20	17	141	10	75	–	–	–	1	2	0,277	5,5÷7,0			
S 926 20 115 25	A	20	25	17	191	10	115	34	110	2,8°	1	2	0,553	5,5÷7,0			
S 926 25 45 25	B	25	25	21	121	12,5	45	–	–	–	1	2	0,379	10÷13	25	12RA25	5430
S 926 25 90 25	B	25	25	21	166	12,5	90	–	–	–	1	2	0,501	10÷13			
S 926 25 135 32	A	25	32	21	215	12,5	135	41	130	2,9°	1	2	0,962	10÷13			
S 926 32 53 32	B	32	32	26	133	16	53	–	–	–	1	2	0,660	24÷30	32	12RA32	5440
S 926 32 106 32	B	32	32	26	186	16	106	–	–	–	1	2	0,879	24÷30			
S 926 32 160 32	A	32	32	26	240	16	160	49	155	1,5°	1	2	1,207	24÷30			

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3,14} \text{ = giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Km \text{ = mm}$$

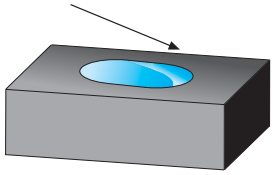
$$Vf = fz0 \cdot Km \cdot z \cdot n \text{ = mm/min}$$

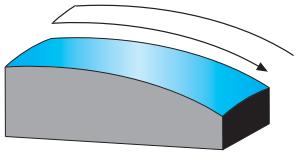


$$ØDe = 2 \cdot \sqrt{D \cdot ap - ap^2} \text{ = mm}$$

$$Rmax = 0,5 \cdot \left(ØD - \sqrt{ØD^2 - ae^2} \right) \text{ = mm}$$

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
HSC = LAVORAZIONE ALTA VELOCITÀ - HIGH SPEED CUTTING
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Km = FATTORE DI AVANZAMENTO PER MATERIALE -FEED FACTOR FOR MATERIAL
De = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Rmax = mm RUGOSITÀ TEORICA MASSIMA - THEORICAL MAXIMUM ROUGHNESS





N = NUMERO D'INSERTI / INSERT NUMBER / WENDEPLATTENANZAHL / NOMBRE DES PLAQUETTES
Z = NUMERO TAGLIENTI / NUMBER OF CUTTING EDGES / SCHNEIDENANZAHL / NOMBRE DU COUPANTS

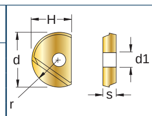
SAU QUALITY TOOLS ENGINEERING

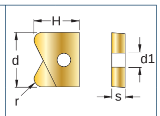
SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS





COD.	P F	P HSC	M F	M HSC	K F	K HSC	N F	N HSC	S F	S HSC	H F	H HSC	T500	F7115 (NEW)	d	s	d1	H	r	a°
RA 08.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	8,0	2,4	2,5	7	4	–
RA 10.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	10,0	2,6	3,0	8,5	5	–
RA 12.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	12,0	3,0	3,5	10	6	–
RA 16.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	16,0	4,0	4,0	12	8	–
RA 20.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	20,0	5,0	5,0	15	10	–
RA 25.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	25,0	6,0	6,0	18,5	12,5	–
RA 32.04 .K32W	●	●	○	○	●	●	○	○			○	○		■ NEW	32,0	7,0	8,0	23,5	16	–
RAET 100008 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		10,0	2,6	3,0	8,5	0,8	–
RAET 120010 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		12,0	3,0	3,5	10	1,0	–
RAET 120020 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		12,0	3,0	3,5	10	2,0	–
RAET 160013 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		16,0	4,0	4,0	12	1,3	–
RAET 160030 .P42	●	●	○	○	●	●	○	○	○	○	●	●	□		16,0	4,0	4,0	12	3,0	–
RAET 200016 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		20,0	5,0	5,0	15	1,6	–
RAET 200040 .P42	●	●	○	○	●	●	○	○	○	○	●	●	□		20,0	5,0	5,0	15	4,0	–
RAET 250020 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		25,0	6,0	6,0	18,5	2,0	–
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY														●						
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY													●							

TOLLERANZE TOLLERANCE RANGE	D
RA..	± 0,01
RAET..	± 0,025

CON GLI INSERTI RAET.. PER OTTENERE UN BLOCCAGGIO OTTIMALE LA MARCATURA DELL' INSERTO DEVE ESSERE ORIENTATA VERSO LA TESTA DELLA VITE

FOR BEST CLAMPING WITH RAET INSERTS, DIRECT THE MARK TOWARDS THE SCREW HEAD

	MATERIALI - MATERIALS Pag. 1063	VDI 3323 GR.	HB Rm[1] HRC[2]	Km	ap F	ap HSC	ae F	ae HSC	T500 Vc (m/min) F	T500 Vc (m/min) HSC	F7115 Vc (m/min) F	F7115 Vc (m/min) HSC		
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	1	D/15	0,1-0,3	D/15	D/50	300	400	250	400		
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	1	D/15	0,1-0,3	D/15	D/50	250	350	250	350		
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,8	D/20	0,1-0,3	D/20	D/50	230	350	150	350		
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,8	D/20	0,1-0,2	D/20	D/50	210	280	150	280		
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,8	D/20	0,1-0,2	D/20	D/50	190	250	150	250		
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	1,2	D/10	0,1-0,3	D/10	D/40	250	340	200	340		
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	1,2	D/10	0,1-0,3	D/10	D/40	230	310	200	340		
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	1,2	D/10	0,1-0,3	D/10	D/40	270	380	200	380		
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	1,4	D/6	0,1-0,5	D/6	D/40	450	650	300	650		
N	RAME E SUE LEGHE - COPPER	26--28	90-110	1,4	D/10	0,1-0,5	D/10	D/40	180	350	300	350		
N	NON METALLICI - PLASTICS	29-30	/	1,4	D/6	0,1-0,5	D/6	D/40	400		300			
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,8	D/30	0,1-0,2	D/30	D/50	50	90				
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]	0,8	D/20	0,1-0,2	D/20	D/50	60	100				
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]	0,8	D/30	0,1-0,2	D/30	D/50	90	150	100	150		
G	GRAFITE - GRAPHITE	45	/	1,6	D/5	0,1-0,5	D/5	D/40						
R	RESINA PER MODELLI,LEGNO - RESIN,WOOD	43	/	1,5	D/3	0,1-0,5	D/3	D/40						

D	fz0 mm F	fz0 mm R	fz0 mm HSC
8	0,15		0,2
10	0,2		0,2
12	0,2		0,25
16	0,25		0,3
20	0,25		0,3
25	0,3		0,35
32	0,3		0,35

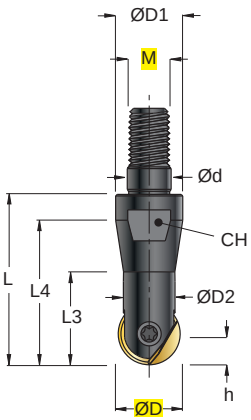
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

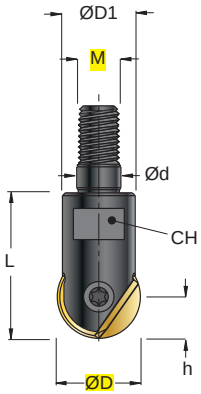
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S 929 ..

Ø 10-32

FORM A **FORM B**





RA.. .K32W	
RAET.. .P42	

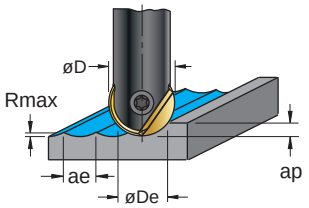
INSERTI - INSERTS **PAG. 452**

(mm)

ART.	FORM	ØD	M	Ød	ØD1	ØD2	h	L	L3	L4	N	Z	CH	kg	Nm			
S 929 10 33 08	A	10	8	8,5	13	8	5	33	18	28	1	2	10	0,022	1,8÷2,0	10	12RA10	5408
S 929 12 33 08	A	12	8	8,5	13	10	6	33	18	28	1	2	10	0,026	2,8÷3,0	12	12RA12	5410
S 929 16 28 08	B	16	8	8,5	14	14	8	28	–	–	1	2	10	0,029	4,5÷5,5	16	12RA16	5415
S 929 20 28 10	B	20	10	10,5	17	17	10	28	–	–	1	2	15	0,042	5,5÷7,0	20	12RA20	5420
S 929 25 41 12	B	25	12	12,5	21	21	12,5	41	–	–	1	2	17	0,093	10÷13	25	12RA25	5430
S 929 32 49 16	B	32	16	17	26	26	16	49	–	–	1	2	24	0,174	24÷30	32	12RA32	5440

$$n = \frac{Vc \cdot 1000}{ØDe \cdot 3,14} \text{ = giri/min (min}^{-1}\text{)} \qquad fz = fz0 \cdot Km \text{ = mm}$$

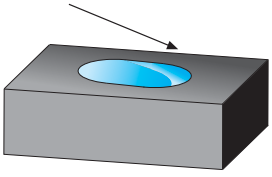
$$Vf = fz0 \cdot Km \cdot z \cdot n \text{ = mm/min}$$

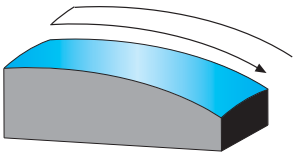


$$ØDe = 2 \cdot \sqrt{D \cdot ap - ap^2} \text{ = mm}$$

$$Rmax = 0,5 \cdot \left(ØD - \sqrt{ØD^2 - ae^2} \right) \text{ = mm}$$

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
HSC = LAVORAZIONE ALTA VELOCITÀ - HIGH SPEED CUTTING
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Km = FATTORE DI AVANZAMENTO PER MATERIALE -FEED FACTOR FOR MATERIAL
De = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER
Rmax = mm RUGOSITÀ TEORICA MASSIMA - THEORICAL MAXIMUM ROUGHNESS





N = NUMERO D'INSERTI / INSERT NUMBER / WENDEPLATTENANZAHL / NOMBRE DES PLAQUETTES
Z = NUMERO TAGLIENTI / NUMBER OF CUTTING EDGES / SCHNEIDENANZAHL / NOMBRE DU COUPANTS

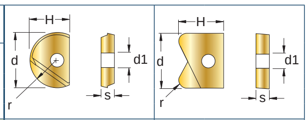
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

HT: CERMET — HW: NON RIV. CEMENTED CARBIDE GRADES — HC: RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS



COD.		P F	P HSC	M F	M HSC	K F	K HSC	N F	N HSC	S F	S HSC	H F	H HSC	T500	F7115 (NEW)	d	s	d1	H	r	a°
RA	10.04 .K32W	●	●	○	○	●	●	○	○			○	○		■	10,0	2,6	3,0	8,5	5	–
RA	12.04 .K32W	●	●	○	○	●	●	○	○			○	○		■	12,0	3,0	3,5	10	6	–
RA	16.04 .K32W	●	●	○	○	●	●	○	○			○	○		■	16,0	4,0	4,0	12	8	–
RA	20.04 .K32W	●	●	○	○	●	●	○	○			○	○		■	20,0	5,0	5,0	15	10	–
RA	25.04 .K32W	●	●	○	○	●	●	○	○			○	○		■	25,0	6,0	6,0	18,5	12,5	–
RA	32.04 .K32W	●	●	○	○	●	●	○	○			○	○		■	32,0	7,0	8,0	23,5	16	–
RAET	100008 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		10,0	2,6	3,0	8,5	0,8	–
RAET	120010 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		12,0	3,0	3,5	10	1,0	–
RAET	120020 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		12,0	3,0	3,5	10	2,0	–
RAET	160013 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		16,0	4,0	4,0	12	1,3	–
RAET	160030 .P42	●	●	○	○	●	●	○	○	○	○	●	●	□		16,0	4,0	4,0	12	3,0	–
RAET	200016 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		20,0	5,0	5,0	15	1,6	–
RAET	200040 .P42	●	●	○	○	●	●	○	○	○	○	●	●	□		20,0	5,0	5,0	15	4,0	–
RAET	250020 .P42	●	●	○	○	●	●	○	○	○	○	●	●	■		25,0	6,0	6,0	18,5	2,0	–

	T500	F7115
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY		●
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY	●	

TOLLERANZE TOLLERANCE RANGE	D
RA..	± 0,01
RAET..	± 0,025

CON GLI INSERTI RAET.. PER OTTENERE UN BLOCCAGGIO OTTIMALE LA MARCATURA DELL' INSERTO DEVE ESSERE ORIENTATA VERSO LA TESTA DELLA VITE

FOR BEST CLAMPING WITH RAET INSERTS, DIRECT THE MARK TOWARDS THE SCREW HEAD

MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm 1) HRC 2)	Km	ap F	ap HSC	ae F	ae HSC	T500 Vc (m/min) F	T500 Vc (m/min) HSC	F7115 Vc (m/min) F	F7115 Vc (m/min) HSC
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300	1	D/15	0,1-0,3	D/15	D/50	300	400	250	400
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350	1	D/15	0,1-0,3	D/15	D/50	250	350	250	350
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,8	D/20	0,1-0,3	D/20	D/50	230	350	150	350
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,8	D/20	0,1-0,2	D/20	D/50	210	280	150	280
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,8	D/20	0,1-0,2	D/20	D/50	190	250	150	250
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	1,2	D/10	0,1-0,3	D/10	D/40	250	340	200	340
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	1,2	D/10	0,1-0,3	D/10	D/40	230	310	200	340
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	1,2	D/10	0,1-0,3	D/10	D/40	270	380	200	380
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	1,4	D/6	0,1-0,5	D/6	D/40	450	650	300	650
N	RAME E SUE LEGHE - COPPER	26--28	90-110	1,4	D/10	0,1-0,5	D/10	D/40	180	350	300	350
N	NON METALLICI - PLASTICS	29-30	/	1,4	D/6	0,1-0,5	D/6	D/40	400		300	
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320	0,8	D/30	0,1-0,2	D/30	D/50	50	90		
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 1)	0,8	D/20	0,1-0,2	D/20	D/50	60	100		
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60 2)	0,8	D/30	0,1-0,2	D/30	D/50	90	150	100	150
G	GRAFITE - GRAPHITE	45	/	1,6	D/5	0,1-0,5	D/5	D/40				
R	RESINA PER MODELLI,LEGNO - RESIN,WOOD	43	/	1,5	D/3	0,1-0,5	D/3	D/40				

D	fz0 mm F	fz0 mm R	fz0 mm HSC
8	0,15		0,2
10	0,2		0,2
12	0,2		0,25
16	0,25		0,3
20	0,25		0,3
25	0,3		0,35
32	0,3		0,35

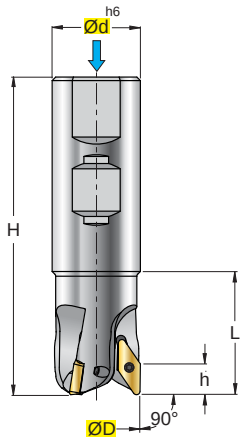
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

S9002-6W...-11

Ø 16-25

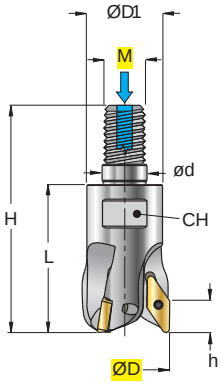
γ_p +10°
γ_f -8°/-11°
γ_o -8°/-11°



S9002-9W...-11

Ø 16-25

γ_p +10°
γ_f -8°/-11°
γ_o -8°/-11°

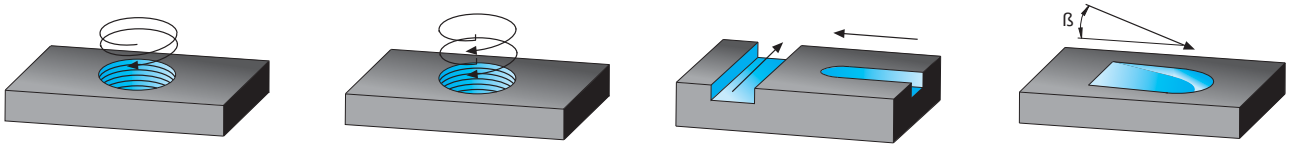


VDKT 11T2.. .K57P

INSERTI - INSERTS **PAG. 458**

(mm)

ART.	ØD	M	Ød	ØD1	H	h	L	ß	Z	CH	kg	Nm	ISO 6462			
S9002-6W-016-02-11	16	–	16	–	80	8	30	35°	2	–	0,10	1÷1,2	–	11T2..	122545	5607
S9002-6W-020-02-11	20	–	20	–	85	8	35	26°	2	–	0,15	1÷1,2	–	11T2..	122555PK	5608
S9002-6W-025-03-11	25	–	25	–	90	8	35	19,5°	3	–	0,25	1÷1,2	–			
S9002-9W-016-02-11	16	8	8,5	12,7	52	8	35	35°	2	10	0,03	1÷1,2	–	11T2..	122545	5607
S9002-9W-020-02-11	20	10	10,5	17,7	54	8	35	26°	2	15	0,05	1÷1,2	–	11T2..	122555PK	5608
S9002-9W-025-03-11	25	12	12,5	20,7	57	8	35	19,5°	3	17	0,07	1÷1,2	–			



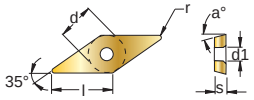
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424



COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES T110	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS	l	d	s	d1	r	a°
VDKT 11T210 N .K57P										●	●	●								■		11	6,35	2,87	2,8	1	15

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY ●

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY ○

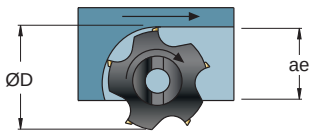
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T110
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300				
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350				
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325				
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240				
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230				
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260				
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250				
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230				
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,06	0,15	0,2	950
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,12	0,18	400
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,12	0,18	300
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320				
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]				
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]				

$$n = \frac{Vc \cdot 1000}{\O D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae = \text{mm}$$

$$fn = fz \cdot z = \text{mm}$$

$$Vf = fz \cdot z \cdot n = \text{mm/min}$$



ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

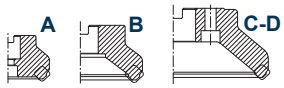
■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

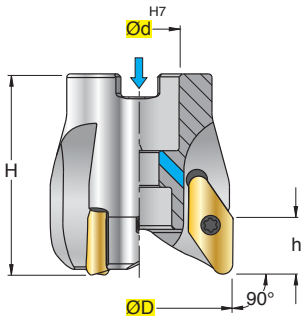
S9002-8W...-22

Ø 42-80

γ_p 0°
γ_f -2,5°/-6°
γ_o -2,5°/-6°

ISO 6462 ...

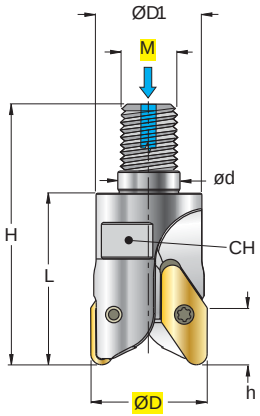




S9002-9W...-22

Ø 32-42

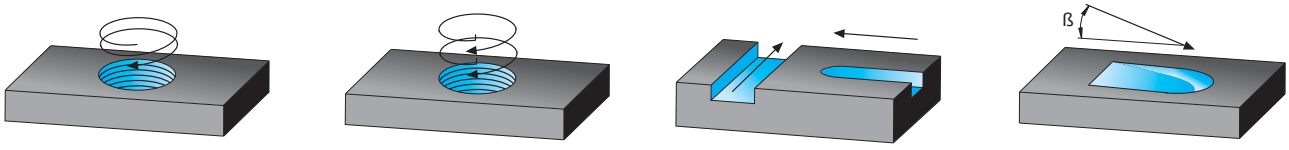
γ_p 0°
γ_f -5°/-6°
γ_o -5°/-6°



VCKT 2205.. .K57P

INSERTI - INSERTS **PAG. 458**

ART.	(mm) ØD	M	Ød	ØD1	H	h	L	ß	Z	CH	kg	Nm	ISO 6462	2205..	124511P	5620P	VBSF08L
S9002-8W-042-03-22	42	–	16	–	55	15	–	23°	3	–	0,20	4÷5	A				
S9002-8W-052-03-22	52	–	22	–	55	15	–	17°	3	–	0,35	4÷5	A				
S9002-8W-066-04-22	66	–	27	–	56	15	–	12,5°	4	–	0,55	4÷5	A				
S9002-8W-080-04-22	80	–	27	–	56	15	–	10°	4	–	0,95	4÷5	A				
S9002-9W-032-02-22	32	16	17	29	71	15	47	35°	2	24	0,15	4÷5	–				
S9002-9W-042-03-22	42	16	17	29	71	15	47	23°	3	24	0,20	4÷5	–				



W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

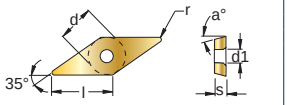
SAU QUALITY TOOLS ENGINEERING

SCELTA VELOCE - QUICK PICK

Tenacità + / Toughness -

Pag. 424

COD.	P F	P M	P R	M F	M M	M R	K F	K M	K R	N F	N M	N R	S F	S M	S R	H F	H M	H R	HT CERMET	HW NON RIV. CEMENTED CARBIDE GRADES T110	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS	l	d	s	d1	r	a°
VCKT 220530 .K57P										●	●	●								■		20,1	12,7	5,56	5,6	3,0	7
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																				●							
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																				○							



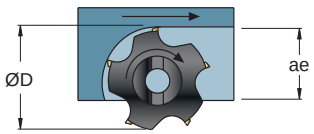
MATERIALI - MATERIALS Pag. 1063		VDI 3323 GR.	HB Rm[1] HRC[2]	fz0 mm F	fz0 mm M	fz0 mm R	Vc m/min Pag. 440 T110
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1---5	125-300				
P	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6--9	180-350				
P	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325				
P	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240				
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230				
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260				
K	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250				
K	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230				
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	21---25	60-130	0,08	0,2	0,35	950
N	RAME E SUE LEGHE - COPPER	26--28	90-110	0,06	0,18	0,3	400
N	NON METALLICI - PLASTICS	29-30	/	0,06	0,18	0,3	300
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	31---35	200-320				
S	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050[1]				
H	ACCIAIO TEMPRATO - HARDENED STEEL	38--41	45-60[2]				

$$n = \frac{Vc \cdot 1000}{\O D \cdot 3,14} \text{ = giri/min (min}^{-1}\text{)}$$

$$fz = fz0 \cdot Kae \text{ = mm}$$

$$fn = fz \cdot z \text{ = mm}$$

$$Vf = fz \cdot z \cdot n \text{ = mm/min}$$



ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

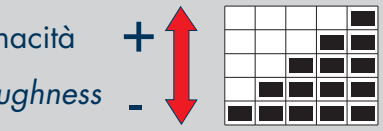
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 440	Vc (min)---------Vc(max)			

F = FINITURA , LAV. LEGGERA - FINISHING , LIGHT MACHINING
M = LAV. MEDIA , GENERICA - MEDIUM MACHINING , GENERIC
R = SGROSSATURA , LAV. PESANTE - ROUGHING , HEAVY MACHINING

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
●● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SCELTA VELOCE
QUICK PICK



METODO PER LA SCELTA VELOCE DEL GRADO DI METALLO DURO PIÙ IDONEO. CONTARE IL NUMERO DI RETTANGOLI COLORATI

METHOD FOR A QUICK CHOICE OF THE MOST SUITABLE SOLID CARBIDE GRADE. COUNT THE NUMBER OF COLORED RECTANGLES

METHODE ZUR RASCHEN AUSWAHL DER GEEIGNETSTEN HARTMETALLSORTE. DIE ANZAHL DER BUNTEN RECH TECKEZAHLEN

METODE POUR CHOISIR RAPIDEMENT LE DEGRÉ LE PLUS APPROPRIÉ DU METAL DUR. COMPTER LES RECTANGLES EN COULEURS

METODO PARA LA ELECCION RAPIDA DE EL GRADO MAS ADECUADO DE METAL DURO. CONTAR LOS NUMEROS DE RECTANGULOS COLORAEDOS

- GRADO MOLTO RESISTENTE ALL'USURA, SOLO PER FINITURA, LAVORAZIONI AD ALTE VELOCITÀ DI TAGLIO E CONDIZIONI MOLTO RIGIDE E STABILI
- GRADE WITH HIGH RESISTANCE TO WEAR; ONLY FOR FINISHING, MACHINING AT HIGH CUTTING SPEEDS, AND VERY RIGID AND STABLE CONDITIONS

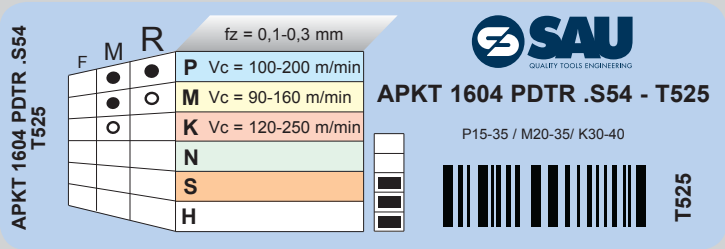
- GRADO CON ALTA RESISTENZA ALL'USURA, DISCRETA TENACITÀ PER LAVORAZIONI A VELOCITÀ MEDIO ALTE ED AVANZAMENTI MEDI, IN CONDIZIONI NORMALI
- GRADE WITH HIGH RESISTANCE TO WEAR, GOOD TOUGHNESS, FOR MEDIUM-HIGH MACHINING AND MEDIUM FEED UNDER NORMAL CONDITIONS

- GRADO CON BUONA RESISTENZA ALL'USURA UNITA A BUONA TENACITÀ, PER LAVORAZIONI GENERICHE IN CONDIZIONI NORMALI
- GRADE WITH GOOD RESISTANCE TO WEAR; COMBINED WITH A GOOD DEGREE OF TOUGHNESS, FOR GENERAL MACHINING UNDER NORMAL CONDITIONS

- GRADO CON OTTIMA TENACITÀ PER LAVORAZIONI MEDIO PESANTI O IN CONDIZIONI POCO STABILI
- GRADE WITH EXCELLENTE TOUGHNESS, FOR MEDIUM HEAVY MACHINING OR MACHINING UNDER CONDITIONS OF LOW STABILITY

- GRADO CON ECCEZIONALE TENACITÀ PER LAVORAZIONI PESANTI CON BASSE VELOCITÀ DI TAGLIO, ALTI AVANZAMENTI O IN CONDIZIONI SFAVOREVOLI
- GRADE WITH EXCELLENTE TOUGHNESS, FOR HEAVY MACHINING WITH LOW CUTTING SPEEDS, HIGH FEED, OR UNDER UNFAVORABLE CONDITIONS

GUIDA FACILE
EASY GUIDE



GUIDA ALL'USO DELL'INSERTO. PRESENTE ANCHE SU OGNI ETICHETTA

GUIDE FOR THE USE OF THE INSERT. ALSO LISTED ON EACH LABEL

LEITFADEN ZUR VERWENDUNG DER WENDEPLATTE, AUCH AUF JEDEM AUFKLEBER VORHANDEN

INSTRUCTIONS POUR L'UTILISATION DE LA PLAQUETTE.SE TROUVANT EGALEMENT SUR CHAQUE ETIQUETTE

GUIA POR EL UTILIZO DE LA PLAQUITA, PRESENTE TAMBIEN EN CADA ETIQUETA

GR. VDI 3323	6	P	= ACCIAIO BASSO LEGATO HB 180	- LOW STEEL ALLOY
	14.1	M	= ACCIAIO INOSSIDABILE AUSTENITICO HB 180	- AUSTENITIC STAINLESS STEELHB 180
	16	K	= GHISA GRIGIA HB 260	- GRAY CAST IRON HB 260
MATERIALI MATERIALS Pag. 1063	21	N	= LEGHE DI ALLUMINIO HB 60	- ALUMINUM ALLOYS HB 60
	33	S	= LEGHE RESISTENTI AL CALORE (INCONEL) HB 250	- HEAT RESISTANT ALLOYS (INCONEL) HB 250
	38	H	= ACCIAIO TEMPRATO HRC 55	- TEMPERED STEEL HRC 55

F	= FINITURA, LAVORAZIONI LEGGERE	- FINISHING, LIGHT MACHINING
M	= LAVORAZIONI MEDIE, IMPIEGO GENERICO	- MEDIUM MACHINING, GENERAL USE
R	= SGROSSATURA, LAVORAZIONI PESANTI	- ROUGHING, HEAVY MACHINING

fn (mm)	= AVANZAMENTO PER TORNITURA	- FEED FOR TOURNING
fz (mm/z)	= AVANZAMENTO PER FRESATURA	- FEED FOR MILLING
Vc (m/min)	= VELOCITÀ DI TAGLIO	- CUTTING SPEED
●	= APPLICAZIONE CONSIGLIATA	- RECOMMENDED APPLICATION
○	= APPLICAZIONE POSSIBILE	- POSSIBLE APPLICATION

INSERTI PER FRESATURA

MILLING INSERTS / WENDEPLATTEN ZUM FRÄSEN
PLAQUÉTTES DE FRAISAGE / PLAQUITAS DE FRESADO

SAU
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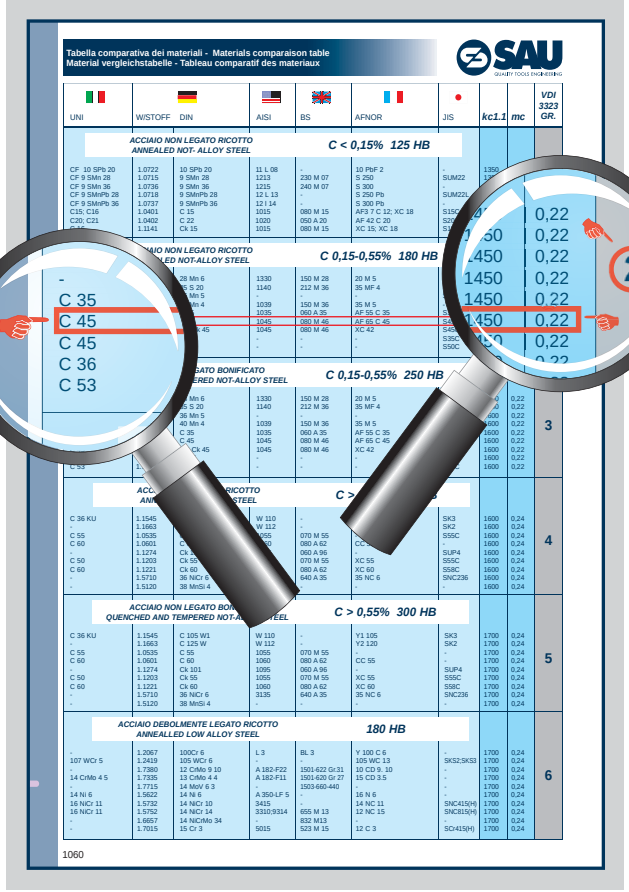
INSERTI PER FRESATURA
MILLING INSERTS
WENDEPLATTEN ZUM FRÄSEN
PLAQUÉTTES DE FRAISAGE
PLAQUITAS DE FRESADO

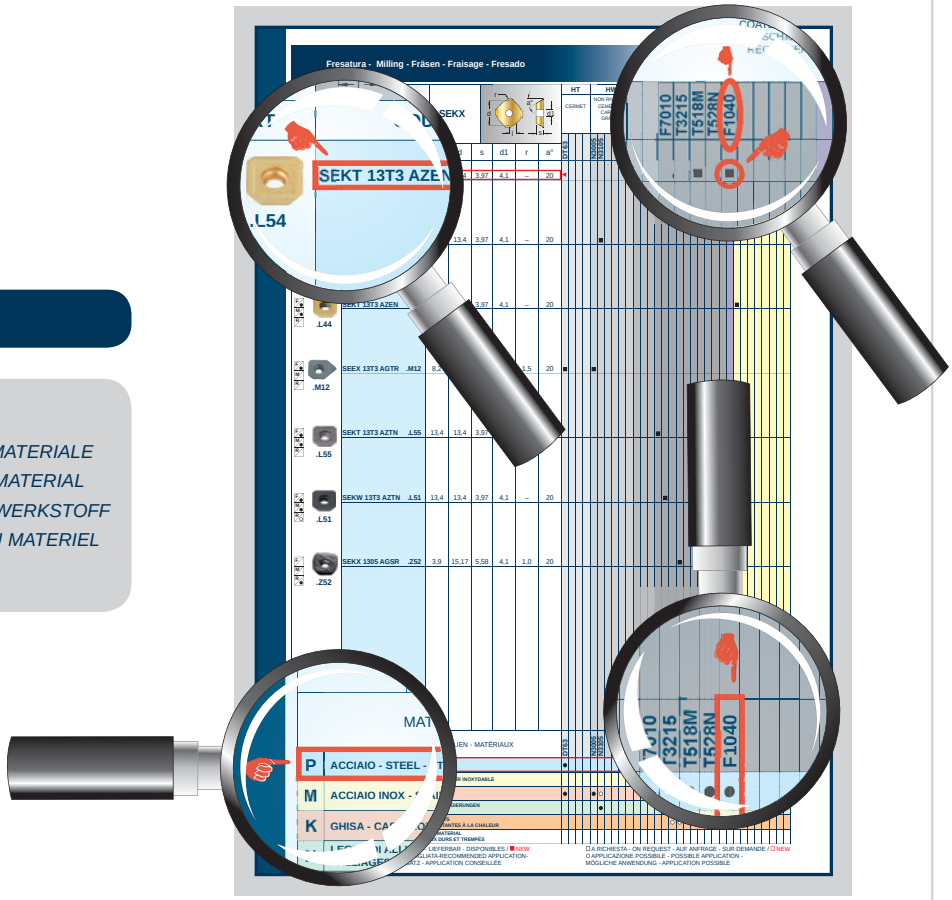
FASE 1 - *PHASE 1*

SCELTA GR. VDI IN FUNZIONE DEL MATERIALE
CHOICE OF VDI GR. DEPENDING ON MATERIAL
WAHL VDI-SORTE JE NACH WERKSTOFF
CHOIX GR. VDI EN FONCTION DU MATERIEL



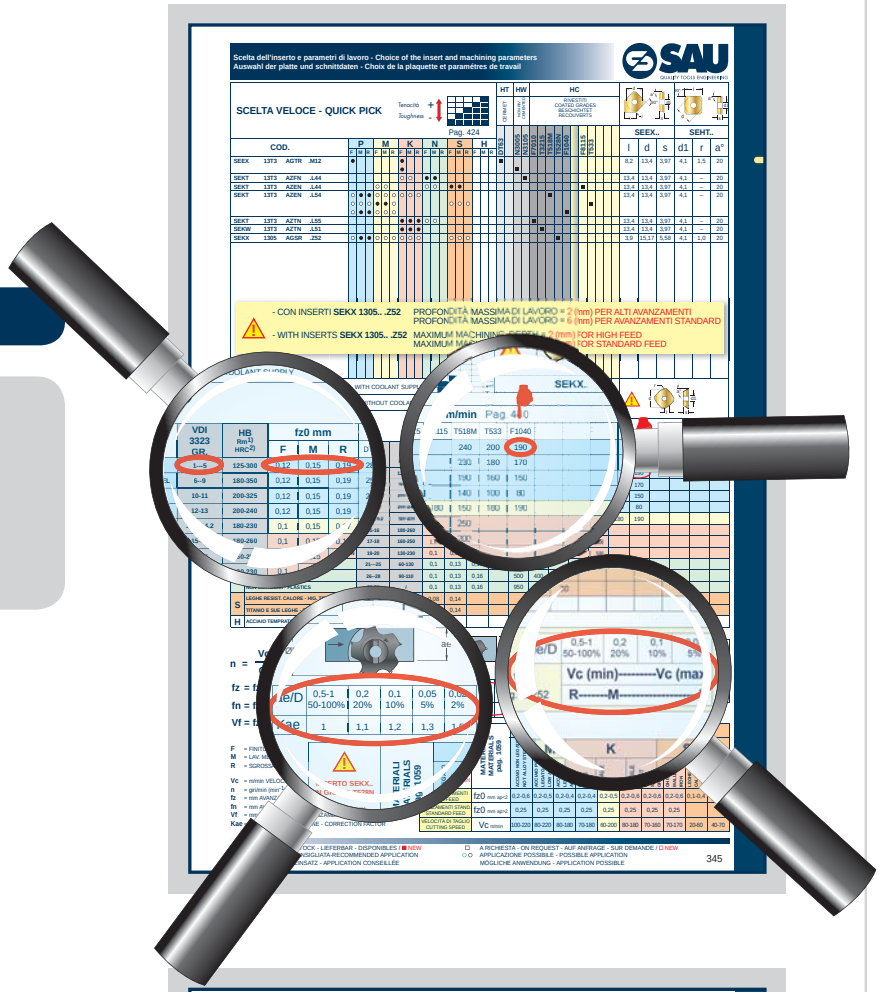
FASE 2 - *PHASE 2*

SCELTA INSERTO IN FUNZIONE DEL MATERIALE
CHOICE OF INSERT DEPENDING ON MATERIAL
WAHL DER WENDEPLATTE JE NACH WERKSTOFF
CHOIX PLAQUETTE EN FONCTION DU MATERIEL



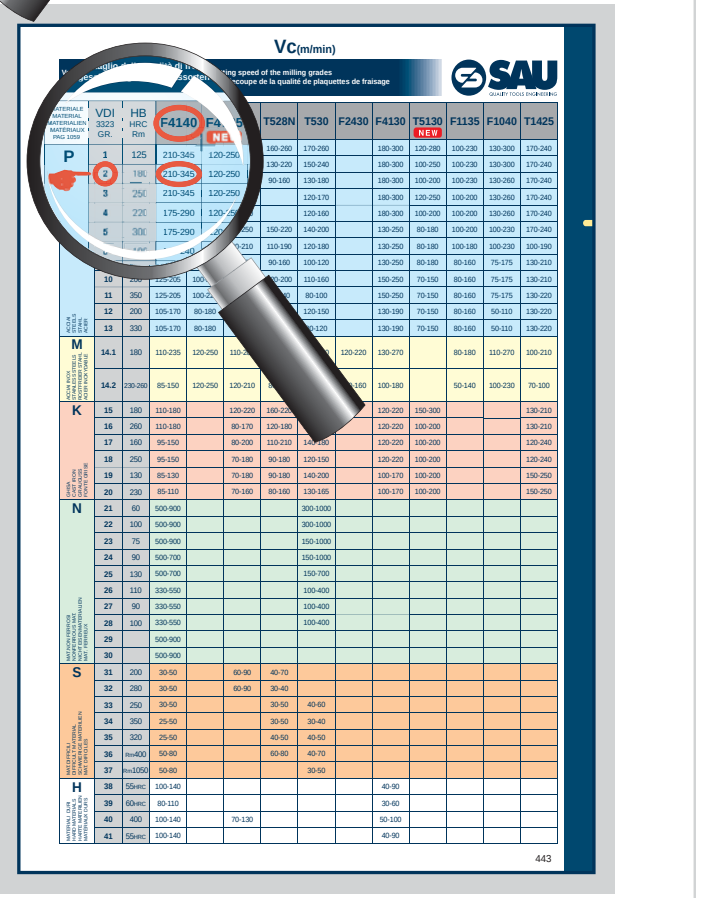
FASE 3 - *PHASE 3*

SCELTA VELOCE DEI PARAMETRI
QUICK CHOICE OF PARAMETERS
SCHNELLWAHL DER PARAMETER
TRIAGE RAPIDE DES PARAMÈTRES



FASE 4 - *PHASE 4*

SCELTA DI VC IN FUNZIONE DEL GR. VDI
CHOICE OF VC DEPENDING ON VDI GR.
WAHL VC JE NACH WERKSTOFF
CHOIX DE VC EN FONCTION DU GR. VDI



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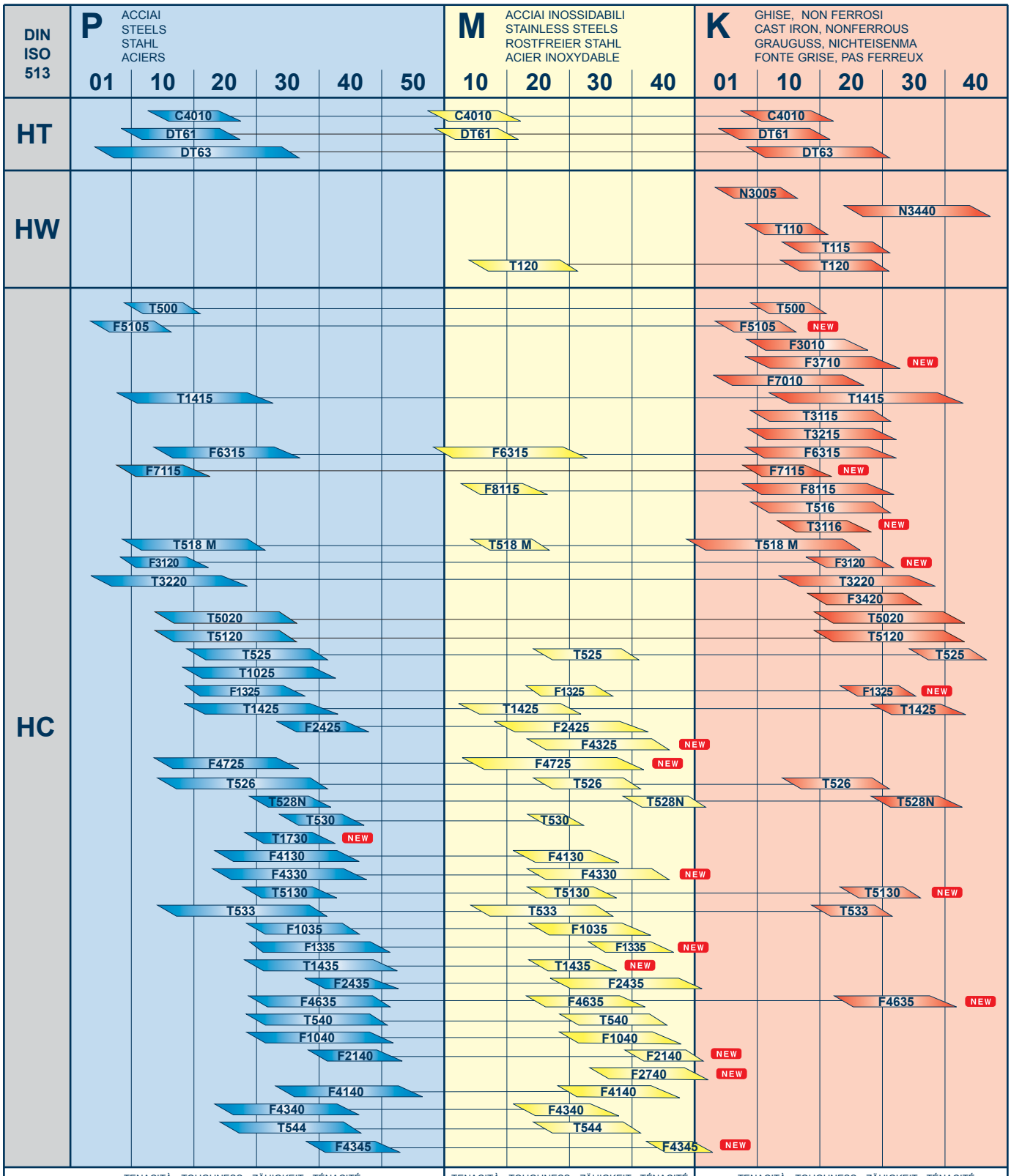
PANORAMICA QUALITÀ DI FRESATURA
GENERAL VIEW OF THE MILLING GRADE
FRÄSSORTEN-ÜBERSICHT
VUE D' ENSEMBLE QUALITÉ DE FRAISAGE
VISTA GENERAL DE LA CALIDAD DE FRESADO



HT CERMET

HW METALLO DURO NON RICOPERTO
UNCOATED CARBIDE
UNBESCHICHTETES HARTMETALL
MÉTAL DUR PAS RECOUVERT

HC METALLO DURO RICOPERTO
COATED CARBIDE
BESCHICHTETES HARTMETALL
MÉTAL DUR RECOUVERT

SAU QUALITY TOOLS ENGINEERING

SAU	DIN ISO 513		MATERIALE - MATERIAL MATERIALIEN - MATÉRIAUX PAG. 1063						QUICK PICK PAG. 424 Tenacità + Toughness -			INDICAZIONI - USO
			P	M	K	N	S	H				
			ACCIAI STEELS STAHL ACIER	ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	GHISA CAST IRON GRAUGUSS FONTE GRISE	MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	MAT.DIFFICILI DIFFICULT MATERIAL SCHWERGE MATERILIEN MAT. DIFICILES	MATERIALI DURI HARD MATERIALS HARTE MATERIALIEN MATÉRIAUX DURS				
C4010	HT	P10-20 M05-15 K05-15	○	●	○					○	●	- QUALITÀ UNIVERSALE - ALTA RESISTENZA AL CALORE E ALL'USURA, BUONA TENACITÀ - INDICATO PER LE ALTE VELOCITÀ DI TAGLIO
DT61	HT	P05-20 M05-15 K01-15	●	●	○					●		- ALTA RESISTENZA AL CALORE , ALL'USURA E BUONA TENACITÀ - INDICATO PER ALTE VELOCITÀ DI TAGLIO IN FINITURA . IDONEO ANCHE PER ASPORTAZIONE MEDIO-LEGGERA
DT63	HT	P05-20 M05-20 K05-20	●	●	●					○	●	- QUALITÀ MICROGRANO MOLTO RESISTENTE ALLA ROTTURA ED ALL'USURA - INDICATO PER MEDIO-ALTE VELOCITÀ DI TAGLIO IN FINITURA.
N3005	HW	K01-10			●					○	●	-QUALITÀ ADATTA ALLA LAVORAZIONE DELLE GHISE IN GENERE -INDICATO PER LAVORAZIONI DI FINITURA A TAGLIO CONTINUO
N3105	HW	N01-12			○	●				●	○	-LEGA UTILIZZATA PER LAVORAR ALLUMINIO E GHISA IN GENERE. -PUO' LAVORAR CON O SENZA AUSILIO DI REFRIGERANTE
N3015	HW	N01-20 S05-25				●	○			○	●	- QUALITÀ ADATTA ALLA LAVORAZIONE DI LEGHE IN ALLUMINIO
N6315	HW	N05-25				●				○	●	- QUALITÀ PER LA LAVORAZIONE DI MATERIALI NON FERROSI
N3620 NEW	HW	N10-30				●				●	○	- SUBSTRATO IN NANOSTRUTTURA NON RIVESTITO. - INDICATO PER LAVORAZIONI CON SEZIONE DEL TRUCIOLO MEDIO, CON CONDIZIONI DI TAGLIO STABILE.
N3440	HW	K20-40 N20-30			●	●					●	- QUALITÀ UNIVERSALE PER GHISA E MATERIALI NON FERROSI - OTTIME PRESTAZIONI A UMIDO
T110	HW	K05-15			○	●				○	●	- QUALITÀ MICROGRANO CON ALTA RESISTENZA ALL' USURA E OTTIMA STABILITÀ DEI TAGLIENTI - INDICATO PER MEDIE VELOCITÀ DI TAGLIO SU GHISA GRIGIA E ALTE PER MATERIALI NON FERROSI. PER ASPORTAZIONI MEDIE IN SGROSSATURA
T115	HW	K10-25			●	●				○	●	- QUALITÀ MICROGRANO CON ALTA RESISTENZA ALL' USURA E BUONA TENACITÀ - INDICATO PER MEDIO-BASSE VELOCITÀ DI TAGLIO SU GHISA GRIGIA E MEDIO-ALTE PER MATERIALI NON FERROSI. PER ASPOR-TAZIONI MEDIE IN SGROSSATURA
T120	HW	M10-20 K10-25		○	●	●	○			●	●	- QUALITÀ MICROGRANO CON ELEVATA RESISTENZA ALL' USURA E BUONA TENACITÀ - INDICATO PER MEDIO-BASSE VELOCITÀ DI TAGLIO SU ACCIAI INOSSIDABILI AUSTENITICI E MEDIE PER GHISE GRIGIE E MATERIALI NON FERROSI. PER ASPORTAZIONI MEDIE IN SGROSSATURA
T500	HC / CVD	P05-15 K05-15	●	○	●	●	○	●		●	○	- QUALITÀ MICROGRANO CON ALTA RESISTENZA ALL'USURA - INDICATO PER MEDIO-ALTE VELOCITÀ DI TAGLIO IN SEMIFINITURA E FINITURA
F2425	HC / PVD	P30-40 M15-35	○	●						○	●	- SUBSTRATO DI CARBURO APPOSITAMENTE SVILUPPATO, RIVESTIMENTO IN PVD INNOVATIVO. - QUALITÀ CON UN'ECCELLENTE ROBUSTEZZA SENZA PREGIUDICARE LA DUREZZA A CALDO E LA RESISTENZA ALL'USURA SIA A BASSE CHE AD ALTE VELOCITÀ DI TAGLIO

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

INDICATIONS - USE	GEBRAUCHSANWEISUNGEN	INDICATION - USAGE
- UNIVERSAL GRADE - HIGH HEAT AND WEAR RESISTANCE, GOOD TOUGHNESS - SUITABLE FOR HIGH CUTTING SPEEDS	- UNIVERSALSORTE - HOHE HITZE- UND VERSCHLEIßBESTÄNDIGKEIT, GUTE ZÄHIGKEIT - FÜR HOHE SCHNITTGESCHWINDIGKEITEN GEEIGNET	- QUALITE UNIVERSELLE - HAUTE RESISTANCE A LA CHALEUR ET A L'USURE, BONNE TENACITE - INDIQUE POUR LES HAUTES VITESSES DE COUPE
-HIGH RESISTANCE TO HEAT AND TO WEAR,GOOD TOUGHNESS -SUITABLE FOR HIGH CUTTING SPEEDS FOR FINISHING, ALSO SUITABLE FOR MEDIUM LIGHT REMOVAL OF MATERIAL	-HOHE WÄRME-VERSCHLEISSBESTÄNDIGKEIT UND GUTE ZÄHIGKEIT -FUR HOHE SCHNITTGESCHWINDIGKEITEN BEIM SCHLICHTEN, SOWIE F¨R MITTEL-LEICHTE ZERSPANUNG GEEIGNET	- HAUTE RÉSISTANCE À LA CHALEUR, À L'USURE ET BONNE TENACITÉ - INDIQUÉE POUR HAUTE VITESSE DE COUPE EN FINISSAGE, INDIQUÉ AUSSI POUR EMPORTATION MOYENNE-LÉGÈRE
-MICROGRAIN GRADE WITH VERY HIGH ULTIMATE STRENGHT AND RESISTANCE TO WEAR -SUITABLE FOR MEDIUM-HIGH CUTTING SPEEDS FOR FINISHING	-MIKROKORNSORTE MIT SEHR HOHER BRUCH – UND VERSCH-LEISSFESTIGKEIT -FÜR HOHE SCHNITTGESCHWINDIGKEITEN BEIM SCHLICHTEN GEEIGNET	-QUALITÈ DE MICROGRAIN TRÉS RÉSISTANT À LA RUPTURE ET À L'USURE -INDIQUÉE POUR HAUTE VITESSE DE COUPE EN FINISSAGE
- GRADE SUITABLE FOR CAST IRON IN GENERAL - SUITABLE FOR FINISHING WITH CONTINUOUS CUT	- ALLGEMEINE SORTE ZUR GUSSBEARBEITUNG - ZUM SCHLICHTEN MIT UNUNTERBROCHENEM SCHNITT GEEIGNET	- QUALITÉ INDIQUÉ POUR USINAGE DE LA FONTE EN GENERAL - INDIQUÉE POUR FINISSAGE À COUPE CONTINU
- ALLOY USED FOR MACHINING ALUMINIUM AND CAST IRON IN GENERAL - POSSIBLE TO WORK WITH OR WITHOUT THE AID OF A COOLANT	- LEGIERUNG, DIE ZUR BEARBEITUNG VON ALUMINIUM UND GUSS IM ALLGEMEINEN BENUTZT WIRD. - KANN MIT ODER OHNE VERWENDUNG VON KÜHLMITTEL ARBEITEN	- ALLIAGE UTILISÉ POUR USINER ALUMINIUM ET FONTE EN GÉNÉRAL. - PEUT TRAVAILLER AVEC OU SANS RÉFRIGÉRANT
- GRADE SUITABLE FOR ALUMINUM ALLOYS	- SORTE FÜR ALUMINIUMLEGIERUNGEN GEEIGNET	- QUALITÉ INDIQUÉE POUR L'USINAGE DES ALLIAGE D'ALLUMINIUM
- DEGREE FOR NON-FERROUS MATERIALS	- SORTE FÜR NICHTEISENMATERIALIEN	- QUALITÉ POUR L'USINAGE DE MATERIAUX NON FERREUX
- UNCOATED NANOSTRUCTURE SUBSTRATE. - SUITABLE FOR MEDIUM SECTION CHIP MACHINING, UNDER STABLE CUTTING CONDITIONS.	- UNBESCHICHTETES NANOSTRUKTURIERTES SUBSTRAT. - FÜR BEARBEITUNGEN MIT MITTLEREM SPANQUERSCHNITT, UNTER STABILEN SCHNITTBEDINGUNGEN GEEIGNET.	- SUBSTRAT EN NANOSTRUCTURE NON REVETU. - INDIQUE POUR DES USINAGES AVEC SECTION DU COPEAU MOYENNE, AVEC DES CONDITIONS DE COUPE STABLE.
- ALL-PURPOSE QUALITY FOR CAST IRON AND NON-FERROUS MATERIALS - EXCELLENT WET PERFORMANCE	- UNIVERSALE QUALITÄT FÜR GUSS UND NICHTEISENMATERIALIEN - AUSGEZEICHNETE NASSLEISTUNGEN	- QUALITÉ UNIVERSELLE POUR FONTE ET MATÉRIAUX NON FERREUX - PERFORMANCES EXCEPTIONNELLES À L'EAU
-MICROGRAIN GRADE WITH HIGH RESISTANCE TO WEAR AND EXCELLENT STABILITY OF THE CUTTING EDGES -SUITABLE FOR MEDIUM CUTTING SPEEDS ON GRAY IRON AND HIGH CUTTING SPEEDS ON NONFERROUS MATERIALS, FOR ROUGHING WITH MEDIUM REMOVAL OF MATERIAL.	-MIKROKORNSORTE MIT HOHER VERSCHLEISSFESTIGKEIT UND AUSGEZEICHNETER STABILITÄT DER SCHNEIDEN -FÜR MITTLERE SCHNITTGESCHWINDIGKEITEN BEI GRAUGUSS UND FÜR HOHE SCHNITTGESCHWINDIGKEITEN BEI NE- MATERIA-LIEN FÜR MITTLERE ZERSPANUNG BEIM SCHRUPPEN GEEIGNET.	-QUALITÉ DE MICROGRAIN AVEC HAUTE RÉSISTANCE À L'USURE ET TRES BONNE STABILITÉ DE LES COUPANTS. -INDIQUÉE POUR MOYENNE VITESSE DE COUPE SUR FONTE GRISE ET HAUTE SUR MATERIAL NON FERROUX, POUR MOYEN EMPORTATION EN ÉBAUCHAGE
-MICROGRAIN GRADE WITH HIGH RESISTANCE TO WEAR AND GOOD TOUGHNESS -SUITABLE FOR MEDIUM – LOW CUTTING SPEEDS ON AUSTENITIC STAINLESS STEEL AND MEDIUM-HIGH CUTTING SPEEDS FOR GRAY IRON AND NONFERROUS MATERIALS, FOR ROUGHING WITH MEDIUM REMOVAL OF MATERIAL.	-MIKROKORNSORTE MIT HOHER VERSCHLEISSFESTIGKEIT UND GUTER ZÄHIGKEIT -FÜR MITTEL-NIEDRIGE SCHNITTGESCHWINDIGKEITEN BEI GRAUGUSS UND FÜR MITTEL-HOHE SCHNITTGESCHWINDIGKEITEN BEI NE-MATERIALIEN FÜR MITTLERE ZERSPANUNG BEIM SCHRUPPEN GEEIGNET	-QUALITÉ DE MICROGRAIN AVEC HAUTE RÉSISTANCE À L'USURE ET BONNE TENACITÉ -INDIQUÉE POUR MOYENNE – FAIBLE VITESSE DE COUPE SUR ACIER INOX AUSTÉNITIQUE, MOYENNE-HAUTE POUR FONTE GRISE ET MATERIAL NON FERROUX, POUR MOYEN EMPORTATION EN ÉBAUCHAGE
- MICROGRAIN GRADE WITH HIGH RESISTANCE TO WEAR AND GOOD TOUGHNESS -SUITABLE FOR MEDIUM – LOW CUTTING SPEEDS ON AUSTENITIC STAINLESS STEEL AND MEDIUM CUTTING SPEEDS FOR GRAY IRON AND NONFERROUS MATERIALS, FOR ROUGHING WITH MEDIUM REMOVAL OF MATERIAL.	-MIKROKORNSORTE MIT SEHR HOHER BRUCH UND GUTE ZÄHIGKEIT -SUITABLE FOR MEDIUM – LOW CUTTING SPEEDS ON AUSTENITIC STAINLESS STEEL AND MEDIUM CUTTING SPEEDS FOR GRAY IRON AND NONFERROUS MATERIALS, FOR ROUGHING WITH MEDIUM REMOVAL OF MATERIAL.	-QUALITÉ DE MICROGRAIN AVEC HAUTE RÉSISTANCE À L'USURE ET BONNE TÉNANCITE -QUALITÉ DE MICROGRAIN AVEC HAUTE RÉSISTANCE À L'USURE ET BONNE TÉNANCITÉ
-MICROGRAIN GRADE WITH HIGH RESISTANCE TO WEAR -SUITABLE FOR MEDIUM – HIGH CUTTING SPEEDS FOR FINISHING AND SEMIFINISHING	-MIKROKORNSORTE MIT HOHER VERSCHLEISSFESTIGKEIT -FÜR MITTEL – HOLE SCHNITTGESCHWINDIGKEITEN BEIM SCHLICHTEN UND HALBSCHLICHTEN GEEIGNET	-QUALITÉ DE MICROGRAIN AVEC HAUTE RÉSISTANCE À L'USURE -INDIQUÉE POUR MOYENNE – HAUTE VITESSE DE COUPE EN FINISSAGE ET SEMIFINISSAGE.
- SPECIALLY DEVELOPED CARBIDE SUBSTRATE, INNOVATIVE PVD COATING - GRADE WITH EXCELLENT TOUGHNESS WHICH DOES NOT AFFECT RED HARDNESS AND WEAR RESISTANCE, AT BOTH LOW AND HIGH CUTTING SPEEDS	- SPEZIELL ENTWICKELTES KARBIDSUBSTRAT, INNOVATIVE PVD-BESCHICHTUNG. - SORTE MIT HERVORRAGENDER ROBUSTHEIT BEI UNVERÄNDERTER WARMHÄRTE UND VERSCHLEISSBESTÄNDIGKEIT SOWOHL MIT NIEDRIGEN ALS AUCH MIT HOHEN SCHNITTGESCHWINDIGKEITEN	- SUBSTRAT DE CARBURE SPÉCIALEMENT DÉVELOPPÉ, REVÊTEMENT EN PVD INNOVANT. - QUALITÉ AVEC UNE ROBUSTESSE EXCELLENTE SANS PORTER PRÉJUDICE À LA DURETÉ À CHAUD ET À LA RÉSISTANCE À L'USURE À BASSES VITESSES COMME À HAUTES VITESSES DE COUPE

HT CERMET

HW METALLO DURO NON RICOPERTO
UNCOATED CARBIDE
UNBESCHICHTETES HARTMETALL
MÉTAL DUR PAS RECOUVERT

HC METALLO DURO RICOPERTO
COATED CARBIDE
BESCHICHTETES HARTMETALL
MÉTAL DUR RECOUVERT

SAU QUALITY TOOLS ENGINEERING

SAU	DIN ISO 513		MATERIALE - MATERIAL MATERIALIEN - MATÉRIAUX PAG. 1063						QUICK PICK PAG. 424			INDICAZIONI - USO
			P	M	K	N	S	H	Tenacità / Toughness + -			
			ACCIAI STEELS STAHL ACIER	ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	GHISA CAST IRON GRAUGUSS FONTE GRISE	MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	MAT.DIFFICILI DIFFICULT MATERIAL SCHWERIGE MATERILIEN MAT. DIFICILES	MATERIALI DURI HARD MATERIALS HARTE MATERIALIEN MATÉRIAUX DURS				
F2435	HC / PVD	P35-45 M25-45	○	●						●	○	- SUBSTRATO DI CARBURO APPOSITAMENTE SVILUPPATO - RIVESTIMENTO IN PVD INNOVATIVO, FORNISCE UN'ECCELLENTE ROBUSTEZZA E OTTIMA TENACITÀ SENZA PREGIUDICARE LA DUREZZA A CALDO SIA A BASSE CHE AD ALTE VELOCITÀ DI TAGLIO
F4635 NEW	HC / PVD	P25-45 M20-35 K20-35	●	●	○					○	●	- GRADO MOLTO TENACE, INDICATO PER LAVORAZIONE DI ACCIAI GENERICI E ACCIAI INOX FERRITICI. - INDICATO PER LAVORAZIONI GRAVOSE ANCHE CON TAGLIO INSTABILE.
F2140 NEW	HC / PVD	P35-45 M35-45	○	●			○			●	●	- CON LA SUA STRUTTURA TENACE IN MICROGRANO È INDICATO ALLA LAVORAZIONE DI ACCIAI AUSTENICI. - OTTIMO COMPORTAMENTO ANCHE AD ALTE VELOCITÀ DI TAGLIO DOVE SI CONSIGLIA LA LAVORAZIONE A SECCO.
F2740 NEW	HC / PVD	M30-45		●						●		- GRADO IN MICROGRANO MOLTO TENACE, PERFORMANTE IN LAVORAZIONI DI SGROSSATURA A TAGLIO INTERROTTO. - INDICATO PER LA LAVORAZIONE DI ACCIAI INOSSIDABILI AUSTENITICI. - INDICATO PER LAVORAZIONI A UMIDO ANCHE MQL.
F5105 NEW	HC / PVD	P01-10 K01-10 H05-15	●		●			●		●	●	- SUBSTRATO IN MICROGRANO CON RIVESTIMENTO MULTISTRATO TiAlSiN. - INDICATO IN CONDIZIONI DI TAGLIO STABILE PER LAVORAZIONI MEDIE E DI FINITURA.
F3710 NEW	HC / PVD				●		○			○	●	- ALTA RESISTENZA ALL' USURA E BUONA TENACITÀ - INDICATO PER MEDIO-ALTE VELOCITÀ DI TAGLIO IN FINITURA E SGROSSATURA PREVALENTEMENTE SU GHISA GRIGIA
F7010	HC / PVD	K01-20 N01-20			●	○				●	○	-QULITA' MICROGRANO CON ALTA RESISTENZA ALL'USURA, PER BASSE ASPORTAZIONI DI TRUCCIOLO. -GRADO VERSATILE, LAVORA SU ACCIAIO, INOX, GHISA E LEGHE RESISTENTI AL CALORE
T1415	HC / CVD	P05-25 K10-35	●		○					○	●	- GRADO INSERTO IDEALE PER LA PRODUZIONE AD ALTO VOLUME - BUONA RESISTENZA AL CALORE CHE LO RENDE PERFETTAMENTE ADATTO PER LA LAVORAZIONE A SECCO ANCHE AD ALTE VELOCITÀ DI TAGLIO
T3115	HC / CVD	K05-20			●					○	●	- ALTA RESISTENZA ALL' USURA E BUONA TENACITA' - INDICATO PER MEDIO-ALTE VELOCITA' DI TAGLIO IN FINITURA E SGROSSATURA PREVALENTEMENTE SU GHISA
T3215	HC / CVD	K05-25			●					●	○	- QUALITA' PER LAVORAZIONE DI GHISA BUONA RESISTENZA ALL'USURA E ALL'ABRASIONE
F7115 NEW	HC / PVD	P05-15 K05-15	●	○	●	○		○			●	- QUALITÀ CON SUBSTRATO IN MICROGRANO ULTRAFINE, ADATTO PER LA FINITURA DEGLI STAMPI.
T516	HC / CVD	K05-25			●					○	●	- ALTA RESISTENZA ALL' USURA E BUONA TENACITÀ - INDICATO PER MEDIO-ALTE VELOCITÀ DI TAGLIO IN FINITURA E SGROSSATURA PREVALENTEMENTE SU GHISA GRIGIA
T3116 NEW	HC / CVD	K10-20			●					●	○	- MATERIE PRIME SELEZIONATE, PER GARANTIRE UN SUBSTRATO DURO E RESISTENTE ALL'USURA. - RIVESTIMENTO MULTISTRATO, LE MIGLIORI PRESTAZIONI SI OTTENGONO LAVORANDO A SECCO.
T518M	HC / CVD	P05-25 M10-20 K05-20	●	●	●		●			○	●	- MEDIA RESISTENZA ALL' USURA E TENACITÀ - INDICATO PER MEDIO-ALTE VELOCITÀ DI TAGLIO IN FINITURA E SGROSSATURA ANCHE IN CONDIZIONI INSTABILI

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

INDICATIONS - USE	GEBRAUCHSANWEISUNGEN	INDICATION - USAGE
- SPECIALLY DEVELOPED CARBIDE SUBSTRATE - INNOVATIVE PVD COATING PROVIDING EXCELLENT STRENGTH AND VERY GOOD TOUGHNESS WITHOUT AFFECTING RED HARDNESS AT BOTH LOW AND HIGH CUTTING SPEED	- SPEZIELL ENTWICKELTES KARBID-SUBSTRAT - INNOVATIVE PVD-BESCHICHTUNG FÜR EXCELLENTE ROBUSTHEIT UND OPTIMALE ZÄHIGKEIT OHNE BEEINTRÄCHTIGUNG DER WARMHÄRTE BEI SOWOHL HOHEN ALS AUCH NIEDRIGEN SCHNITTGESCHWINDIGKEITEN	- SUBSTRAT DE CARBURE SPECIALEMENT DEVELOPPE - REVETEMENT EN PVD INNOVANT, FOURNIT UNE ROBUSTESSE ET TENACITE EXCELLENTES, SANS POUR AUTANT PORTER PREJUDICE A LA DURETE A CHAUD A DE BASSES COMME A DE HAUTES VITESSES DE COUPE.
- VERY TOUGH GRADE, SUITABLE FOR STANDARD AND FERRITIC STAINLESS STEEL. - SUITABLE FOR HEAVY-DUTY MACHINING, ALSO UNDER UNSTABLE CUTTING CONDITIONS.	- SEHR ZÄHE SORTE, ZUR BEARBEITUNG VON STANDARD- UND FERRITISCHEM EDELSTAHL GEEIGNET. - FÜR ANSPRUCHVOLLE BEARBEITUNGEN GEEIGNET, AUCH BEI INSTABILEN SCHNITTBEDINGUNGEN.	- DEGRE TRES TENACE INDIQUE POUR L'USINAGE DES ACIERS GENERIQUES ET ACIERS INOXYDABLES FERRITIQUES - INDIQUE POUR LES USINAGES LOURDS MEME AVEC UNE COUPE INSTABLE.
- WITH ITS MICRO GRAIN STRUCTURE IT IS SUITABLE FOR AUSTENITIC STEEL. - EXCELLENT PERFORMANCE ALSO WITH HIGH CUTTING SPEED, WHERE DRY MACHINING IS RECOMMENDED.	- DANK DER ZÄHEN MIKROKORN-STRUKTUR AUCH ZUR BEARBEITUNG VON AUSTENITISCHEN STÄHLEN GEEIGNET. - SEHR GUTES VERHALTEN AUCH BEI HOHEN SCHNITTGESCHWINDIGKEITEN, WO DIE TROCKENBEARBEITUNG EMPFOHLEN IST.	- SA STRUCTURE TENACE EN MICROGRAIN LE REND PARTICULIEREMENT INDIQUE POUR L'USINAGE DES ACIERS AUSTENIQUES - COMPORTEMENT EXCELLENT MEME A DES VITESSES DE COUPE ELEVEES, OU L'USINAGE A SEC EST CONSEILLE.
- VERY TOUGH MICROGRAIN GRADE, PERFORMING IN INTERRUPTED-CUTTING ROUGHING MACHINING. - SUITABLE FOR THE MACHINING OF AUSTENITIC STAINLESS STEEL. - SUITABLE FOR WET GRINDING ALSO MQL.	- SEHR ZÄHE MIKROKORNSORTE MIT HOHER LEISTUNG BEIM SCHRUPPEN IM UNTERBROCHENEN SCHNITT. - GEEIGNET FÜR DIE BEARBEITUNG VON ROSTFREIEN, AUSTENITISCHEN STÄHLEN. - GEEIGNET FÜR NASSBEARBEITUNGEN, AUCH BEI MINIMALSCHMIERUNG MQL.	- DEGRÉ EN MICRO GRAIN TRÈS TENACE, PERFORMANT DANS LES USINAGES DE DÉGROSSISSAGE À COUPE INTERROMPUE. - INDIQUÉ POUR L'USINAGE D'ACIERS INOXYDABLES AUSTÉNITIQUES. - INDIQUÉ POUR LES USINAGES PAR VOIE HUMIDE MÊME MQL.
- MICROGRAIN SUBSTRATE WITH MULTILAYER TiAlSln COATING. - SUITABLE FOR MEDIUM APPLICATIONS AND FINISHING UNDER STABLE CUTTING CONDITIONS.	- MIKORKORNSUBSTRAT MIT MEHRFACH- TiAlSln – BESCHICHTUNG. - FÜR MITTLERE- BIS SCHLICHTBEARBEITUNGEN UNTER STABILEN BEDINGUNGEN GEEIGNET.	- SUBSTRAT EN MICROGRAIN AVEC REVETEMENT MULTICOUCHE TiAlSln. - INDIQUE DANS DES CONDITIONS DE COUPE STABLE POUR USINAGES MOYENS ET DE FINITION.
-HIGH RESISTANCE TO WEAR, GOOD TOUGHNESS -SUITABLE FOR MEDIUM – HIGH CUTTING SPEEDS FOR FINISHING AND ROUGHING MAINLY ON GRAY IRON	-HOHE VERSCHLEISSFESTIGKEIT UND GUTE ZÄHIGKEIT -FÜR MITTEL – HOHE SCHNITTGESCHWINDIGKEITEN BEIM SCHLICHTEN UND SCHRUPPEN, ÜBERWIEGEND BEI GRAUGUSS, GEEIGNET	-HAUTE RESISTANCE À L'USURE ET BONNE TENACITÉ -INDIQUÉE POUR MOYENNE – HAUTE VITESSE DE COUPE EN FINISSAGE ET ÉBAUCHAGE SURTOUT POUR FONTE GRISE
- HIGH WEAR RESISTANT MICRO GRAIN QUALITY WHEN SMALL QUANTITIES OF CHIPS NEED REMOVING - VERSATILE GRADE, WORKS ON STEEL, STAINLESS STEEL, CAST IRON AND HEAT RESISTANT ALLOYS	- MIKROKORNSORTE MIT HOHER VERSCHLEISSFESTIGKEIT, FÜR NIEDRIGE ZERSPANUNG. - VIELSEITIGE SORTE, ARBEITET MIT STAHL, EDELSTAHL, GUSS UND WÄRMBESTÄNDIGEN LEGIERUNGEN	- QUALITÉ MICROGRAIN AVEC HAUTE RÉSISTANCE À L'USURE, POUR DES ENLÈVEMENTS DE COPEAU MODIQUES. - DEGRÉ ÉCLECTIQUE, PEUT USINER ACIER, INOX, FONTE ET ALLIAGES RÉSISTANTS À LA CHALEUR
- IDEAL GRADE FOR HIGH VOLUME MACHINING - GOOD HEAT RESISTANCE AND THEREFORE PERFECTLY SUITABLE FOR DRY MACHINING, EVEN AT HICH CUTTING SPEEDS	- IDEALE SORTE FÜR HOCHVOLUMENFERTIGUNG - GUTE HITZEBESTÄNDIGKEIT UND DAHER PERFEKT FÜR DIE TROCKENBEARBEITUNG, AUCH MIT HOHEN SCHNITTGESCHWINDIGEKEITEN	- DEGRÉ PLAQUETTE IDÉAL POUR LA PRODUCTION À HAUT VOLUME - BONNE RÉSISTANCE À LA CHALEUR, QUI LE REND PARFAITEMENT INDIQUÉ POUR L'USINAGE À SEC MEME A DE HAUTES VITESSES DE COUPE
- EXTREMELY TOUGH WITH HIGH WEAR RESISTANCE - IDEAL FOR MEDIUM TO HIGH CUTTING SPEEDS FOR FINISHING AND ROUGHING WORK MAINLY ON CAST IRON	- HOHE VERSCHLEISSFESTIGKEIT UND GUTE ZÄHIGKEIT - GEEIGNET FÜR MITTELHOHE UND HOHE SCHNITTGESCHWINDIGKEIT BEIM SCHLICHTEN UND SCHRUPPEN, ÜBERWIEGEND BEI GUSS	- HAUTE RÉSISTANCE À L'USURE ET BONNE TÉNACITÉ - INDIQUÉ POUR DES VITESSES HAUTES ET MOYENNES DE COUPE EN FINITION ET DÉGROSSISSAGE PRINCIPALEMENT SUR FONTE
- QUALITY CAST IRON MACHINING, GOOD WEAR AND ABRASION RESISTANCE	- QUALITÄT ZU BEARBEITUNG VON GUSS, GUTE VERSCHLEISS- UND ABRIEBFESTIGKEIT	- QUALITÉ POUR USINAGE DE FONTE BONNE RÉSISTANCE À L'USURE ET À L'ABRASION
- GRADE WITH ULTRAFINE MICRO GRAIN SUBSTRATE, SUITABLE FOR MOLD FINISHING.	- SORTE MIT ULTRAFEINEM MIKROKORN-SUBSTRAT, ZUM FORMENSCHLICHTEN GEEIGNET.	- QUALITE AVEC SUBSTRAT EN MICROGRAIN ULTRAFIN, INDIQUE DANS LA FINITION DES MOULES.
-HIGH RESISTANCE TO WEAR, GOOD TOUGHNESS -SUITABLE FOR MEDIUM – HIGH CUTTING SPEEDS FOR FINISHING AND ROUGHING MAINLY ON GRAY IRON	-HOHE VERSCHLEISSFESTIGKEIT UND GUTE ZÄHIGKEIT -FÜR MITTEL – HOHE SCHNITTGESCHWINDIGKEITEN BEIM SCHLICHTEN UND SCHRUPPEN, ÜBERWIEGEND BEI GRAUGUSS, GEEIGNET	-HAUTE RESISTANCE À L'USURE ET BONNE TENACITÉ -INDIQUÉE POUR MOYENNE – HAUTE VITESSE DE COUPE EN FINISSAGE ET ÉBAUCHAGE SURTOUT POUR FONTE GRISE
- CHOICE RAW MATERIALS, TO GUARANTEE A HARD AND WEAR-RESISTANT SUBSTRATE. - MULTILAYER COATING , BEST PERFORMANCE IS ACHIEVED THROUGH DRY-MACHINING.	- AUSGEWÄHLTE ROHSTOFFE, UM EIN HARTES UND VERSCHLEISSFESTES SUBSTRAT ZU GEWÄHRLEISTEN. - MEHRSCHICHT-BESCHICHTUNG, BESTE LEISTUNGEN WERDEN BEI TROCKENBEARBEITUNGEN ERZIELT.	- MATIÈRES PREMIÈRES SÉLECTIONNÉES, AFIN D'ASSURER UN SUBSTRAT DUR ET RÉSISTANT À L'USURE. - REVÊTEMENT MULTICOUCHE, LES MEILLEURES PERFORMANCES SONT OBTENUES, EN TRAVAILLANT À SEC.
-MEDIUM RESISTANCE TO WEAR AND TOUGHNESS -SUITABLE FOR MEDIUM – LOW CUTTING SPEEDS, FOR FINISHING AND ROUGHING WITH MEDIUM REMOVAL OF MATERIAL, EVEN UNDER UNSTABLE CONDITIONS.	-MITTEL VERSCHLEISSFESTIGKEIT UND ZÄHIGKEIT -FÜR MITTEL – NIEDRIGE SCHNITTGESCHWINDIGKEITEN UND MITTLERE ZERSPANUNGEN BEIM SCHLICHTEN UND SCHRUPPEN, AUCH UNTER UNSTABILEN BEDINGUNGEN, GEEIGNET	-MOYENNE RÉSISTANCE Á L'USURE ET Á L'ÉBRÈCHEMENT -INDIQUÉE POUR MOYENNE – FAIBLE VITESSE DE COUPE, POUR MOYEN EMPORTATION EN FINISSAGE ET ÉBAUCHAGE, MÊME AVEC CONDITIONS INSTABLES.

HT CERMET

HW METALLO DURO NON RICOPERTO
UNCOATED CARBIDE
UNBESCHICHTETES HARTMETALL
MÉTAL DUR PAS RECOUVERT

HC METALLO DURO RICOPERTO
COATED CARBIDE
BESCHICHTETES HARTMETALL
MÉTAL DUR RECOUVERT

SAU QUALITY TOOLS ENGINEERING

SAU	DIN ISO 513		MATERIALE - MATERIAL MATERIALIEN - MATÉRIAUX PAG. 1063						QUICK PICK PAG. 424			INDICAZIONI - USO
			P	M	K	N	S	H				
			ACCIAI STEELS STAHL ACIER	ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	GHISA CAST IRON GRAUGUSS FONTE GRISE	MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	MAT.DIFFICILI DIFFICULT MATERIAL SCHWERIGE MATERILIEN MAT. DIFICILES	MATERIALI DURI HARD MATERIALS HARTE MATERIALIEN MATÉRIAUX DURS	Tenacità / Toughness + -			
F3120 NEW	HC / PVD	P05-15 K15-25	○		●					●	○	- RIVESTIMENTO SPESSO INDICATO ALLA LAVORAZIONE DI GHISE ANCHE IN CONDIZIONE DI LUNGHE SPORGENZE. - BUONA LAVORABILITÀ DI ACCIAI DURI.
T3220	HC / CVD	P01-20 K10-30	○		●					○	●	- GRADO DA TORNITURA PER LA LAVORAZIONE DELLA GHIA GRIGIA E SFEROIDALE
F3420	HC / PVD	K15-30			●					●	●	-QUALITA' CON ALTA RESISTENZA ALL'USURA, INDICATO PER ALTE VELOCITA' DI TAGLIO. -IDEALE PER LA LAVORAZIONIE DI GHISA SFEROIDALE
T5020	HC / CVD	P10-30 K15-35	●		●			○		●	●	- QUALITÀ CON ALTA RESISTENZA ALL' USURA - INDICATO PER SGROSSATURA E MEDIE LAVORAZIONI CON CONDIZIONI STABILI ED ELEVATE VELOCITÀ DI TAGLIO
T1025	HC / CVD	P15-35	●							●	●	-GRADO INSERTO RESISTENTE ALL'USURA -IDEALE CON LAVORAZIONI AD ELEVATE VELOCITA' DI TAGLIO
T1425	HC / CVD	P15-35 M10-25 K25-35	●	○	○					○	●	- VASTA GAMMA DI IMPIEGHI, IDEAELE PER TUTTE LE LEGHE DI ACCIAIO E GHISA, BUONE PRESTAZIONI ANCHE SU INOX
F4725 NEW	HC / PVD	P10-30 M10-35	●	●						○	○	- ALTA TENACITÀ E OTTIMA RESISTENZA ALL'USURA TERMICA GRAZIE A UNO SPECIALE RIVESTIMENTO - INDICATO PER MEDIE VELOCITÀ DI TAGLIO IN FINITURA E SGROSSATURA
T526	HC / CVD	P10-35 M20-35 K10-25	●	○	●		○			●	○	- ALTA TENACITÀ , RESISTENZA ALL' USURA E ALLO SHOCK TERMICO - INDICATO PER MEDIO-ALTE VELOCITÀ DI TAGLIO E CON AVANZAMENTI MEDI IN CONDIZIONI NORMALI. OTTIMO SU ACCIAI LEGATI E GHISE SFEROIDALI
T528N	HC / CVD	P25-35 M35-45 K25-35 S35-45	●	●	○		○			●	○	- ALTA TENACITÀ, OTTIMA RESISTENZA ALLO SHOCK TERMICO E ALL'USURA - INDICATO PER MEDIO BASSE VELOCITÀ DI TAGLIO E CON MEDIO ALTI AVANZAMENTI ANCHE IN CONDIZIONI STABILI IN FINITURA E SGROSSATURA
T530	HC / CVD	P30-40 M20-25 S20-30	●	●	○	○	●			○	●	- BUONA TENACITÀ E RESISTENZA ALLA SCHEGGIATURA - INDICATO PER MEDIO-BASSE VELOCITÀ DI TAGLIO E ALTI AVANZAMENTI
T1730 NEW	HC / CVD	P25-35			●					●	○	- GRADO UNIVERSALE INDICATO PER SPIANATURA, ESSENDO TENACE GARANTISCE UNA STABILITÀ DI LAVORAZIONE. - MOLTO PERFORMANTE SU ACCIAIO CEMENTATO CON LAVORAZIONE A SECCO, MENTRE SU ACCIAI TENACI È CONSIGLIATO L'USO DELL'E-MULSIONE.
F4130	HC / PVD	P20-40 M20-30	●	●	○			○		●	●	- QUALITÀ ALTAMENTE RESISTENTE ALL'USURA
T5130 NEW	HC / CVD	P25-35 M20-30 K20-30	●	○	●					●	○	- OTTIMO PER LE LAVORAZIONI A SECCO SU ACCIAIO CON ELEVATI VOLUMI DI ASPORTAZIONE
F1040	HC / PVD	P25-45 M25-40	●	○						●	○	- SPECIALE RIVESTIMENTO IN PVD CHE OTTIMIZZA LA FORMAZIONE DEL TRUCIOLO

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

INDICATIONS - USE	GEBRAUCHSANWEISUNGEN	INDICATION - USAGE
- THIS COATING IS FREQUENTLY USED FOR CAST IRON MACHINING, ALSO WITH LONG PROJECTIONS. - GOOD MACHINABILITY OF HARD STEEL.	- BESCHICHTUNG, DIE HÄUFIG ZUR BEARBEITUNG VON GUSS, AUCH MIT GROSSEM ÜBERSTAND, VERWENDET WIRD. - GUTE BEARBEITBARKEIT VON HARTSTÄHLEN.	- REVÊTEMENT ÉPAIS S'ADAPTANT SOUVENT À L'USINAGE DE FONTES MÊME DANS LE CAS DE LONGUES SAILLIES. - BONNE MANIABILITÉ D'ACIERS DURS.
- GRADO DA TORNITURA PER LA LAVORAZIONE DELLA GHIA GRIGIA E SFEROIDALE	- TURNING GRADE FOR GREY CAST IRON AND NODULAR CAST IRON	- DEGRE DE TOURNAGE POUR L'USINAGE DE LA FONTE GRISE ET SPHEROIDALE
- DEGREE WITH HIGH RESISTANCE TO WEAR, SUITABLE FOR HIGH CUTTING SPEEDS - IDEAL FOR NODULAR CAST IRON	- SORTE MIT HOHER VERSCHLEISSFESTIGKEIT, FÜR HOHE SCHNITTGESCHWINDIGKEITEN GEEIGNET - IDEAL FÜR DIE BEARBEITUNG VON SPHÄROGUSS	- QUALITE AVEC RESISTANCE ELEVEE A L'USURE, INDIQUE POUR DE HAUTES VITESSES DE COUPE - IDEAL POUR L'USINAGE DE FONTE SPHEROIDALE
- GRADE WITH HIGH RESISTANCE TO WEAR. - SUITABLE FOR ROUGHING AND MEDIUM MACHINING UNDER STABLE CONDITIONS AND AT HIGH CUTTING SPEEDS	- SORTE MIT HOHER VERSCHLEIßBESTÄNDIGKEIT - ZUM SCHRUPPEN UND ZUR MITTLEREN ZERSPANUNG UNTER STABILEN BEDINGUNGEN UND MIT HOHEN SCHNITTGESCHWINDIGKEITEN	- QUALITÉ AVEC HAUTE RÉSISTANCE À L'USURE - INDIQUÉE POUR ÉBAUCHAGE ET USINAGES MOYENS AVEC CONDITIONS STABLES ET ÉLEVÉE VITESSE DE COUPE.
- WEAR RESISTANT QUALITY INSERT - IDEAL FOR HIGH CUTTING SPEED WORK	- VERSCHLEISSFESTE WENDEPLATTE - IDEAL FÜR BEARBEITUNGEN MIT HOHER SCHNITTGESCHWINDIGKEIT	- DEGRÉ PLAQUETTE RÉSISTANT À L'USURE - IDÉAL EN CAS D'USINAGES À DES VITESSES DE COUPE ÉLEVÉES
- WIDE RANGE OF APPLICATIONS, IDEAL FOR ALL STEEL AND CAST IRON ALLOYS, GOOD PERFORMANCE ALSO ON INOX	- HOHE VIELSEITIGKEIT, IDEAL FÜR ALLE STAHL- UND GUSSLEGIERUNGEN, GUTE LEISTUNG AUCH MIT INOXSTAHL	- VASTE GAMME D'EMPLOIS, IDÉAL POUR TOUS LES ALLIAGES EN ACIER ET FONTE, BONNES PERFORMANCES MÊME SUR INOX
- HIGH TOUGHNESS AND EXCELLENT RESISTANCE TO THERMAL WEAR DUE TO THE SPECIAL COATING - SUITABLE FOR FINISHING AND ROUGHING AT MEDIUM CUTTING SPEEDS	- HOHE ZÄHIGKEIT UND SEHR GUTE BESTÄNDIGKEIT GEGEN THERMISCHEN VERSCHLEIß AUFGRUND DER SPEZIALBESCHICHTUNG - FÜR MITTLERE SCHNITTGESCHWINDIGKEITEN ZUM SCHLICHTEN UND SCHRUPPEN GEEIGNET	- HAUTE TÉNACITÉ ET TRÈS BONNE RÉSISTANCE À L'USURE THERMIQUE DÛ À UN SPÉCIAL REVÊTEMENT - INDIQUÉE POUR MOYENNE VITESSE DE COUPE EN FINISSAGE ET ÉBAUCHAGE
-HIGH TOUGHNESS, RESISTANCE TO WEAR AND TO THERMAL SHOCK -SUITABLE FOR MEDIUM – HIGH CUTTING SPEEDS AND WITH MEDIUM FEED UNDER NORMAL CONDITIONS - EXCELLENT ON STEEL ALLOYS AND SPHEROIDAL CAST IRON	-HOHE ZÄHIGKEIT, VERSCHLEISSFESTIGKEIT UND TEMPERATURWECHSELBESTÄNDIGKEIT -FÜR MITTEL-HOHE SCHNITTGESCHWINDIGKEITEN UND BEI MITTLEREN VORSCHÜBEN UNTER NORMALEN BEDINGUNGEN GEEIGNET -FÜR EDELSTAHL UND SPHÄROGUSS OPTIMAL GEEIGNET	-HAUTE TENACITÈ, RÉSISTANCE À L'USURE ET AU SHOCK THERMIQUE -INDIQUÉE POUR MOYENNE – HAUTE VITESSE DE COUPE ET MOYEN DÉPLACEMENT EN CONDITIONS NORMAUX -OPTIMUM SUR ACIER ALLIÉ ET FONTE SPHÉROÏDAL
- HIGH TOUGHNESS,EXCELLENT THERMAL SHOCK AND WEAR RESISTANCE - SUITABLE FOR MEDIUM-LOW CUTTING SPEEDS AND WITH MEDIUM-HIGH FEED FACTORS, ALSO UNDER STABLE MACHINING CONDITIONS FOR FINISHING AND ROUGHING	- HOHE ZÄHIGKEIT, SEHR GUTE TEMPERATURWECHSELBESTÄNDIGKEIT UND VERSCHLEIßFESTIGKEIT - GEEIGNET FÜR MITTLERE BIS GERINGE SCHNITTGESCHWINDIGLEITEN UND MITTLERE UND HOHE VORSCHÜBE, AUCH UNTER STABILEN BEARBEITUNGSBEDINGUNGEN ZUM SCHLICHTEN UND SCHRUPPEN	- HAUTE TENACITÉ, TRÈS BONNE RÉSISTANCE AU CHOC THERMIQUE ET À L'USURE - INDIQUÉE POUR MOYENNE BASSES VITESSE DE COUPE ET AVEC MOYENNES HAUTES AVANCES MÊME AVEC DE CONDITIONS STABLES EN FINISSAGE ET DÉGROSSISSAGE
-GOOD TOUGHNESS AND RESISTANCE TO CHIPPING -SUITABLE FOR MEDIUM-LOW CUTTING SPEEDS AND HIGH FEED	-GUTER ZÄHIGKEIT UND AUSBRUCHFESTIGKEIT -FÜR MITTEL-NIEDRIGE SCHNITTGESCHWINDIGKEITEN UND HOHE VORSCHÜBE GEIGNEET	-BONNE TENACITÉ ET RÉSISTANCE À L'ÉBRÈCHEMENT -INDIQUÉE POUR MOYENNE-FAIBLE VITESSE DE COUPE
- UNIVERSAL GRADE SUITABLE FOR FACE MILLING, ENSURING MACHINING STABILITY GIVEN ITS TOUGHNESS. - HIGHLY PERFORMING ON CASE-HARDENED STEEL WITH DRY-MACHINING, WHILE IT IS ADVISABLE TO USE THE EMULSION ON TOUGH STEELS.	- UNIVERSALE, ZUM PLANFRÄSEN GEEIGNETE SORTE, DIE AUFGRUND IHRER ZÄHHEIT DIE BEARBEITUNGSSTABILITÄT GARANTIERT. - HOHE LEISTUNGEN BEI EINSATZSTAHL MIT TROCKENBEARBEITUNG; BEI ZÄHEN STÄHLEN WIRD HINGEGEN DER GEBRAUCH DER EMULSION EMPFOHLEN.	- DEGRÉ UNIVERSEL INDIQUÉ POUR LE PLANAGE, ÉTANT TENACE IL GARANTIT UNE STABILITÉ D'USINAGE. - TRÈS PERFORMANT SUR ACIER CÉMENTÉ AVEC USINAGE À SEC, TANDIS QUE SUR DES ACIERS TENACES IL EST CONSEILLÉ D'AVOIR RECOURS À L'ÉMULSION.
- HIGH WEAR RESISTANCE QUALITY	- HOCH VERSCHLEISSFESTE QUALITÄT	- QUALITÉ HAUTEMENT RÉSISTANTE À L'USURE
- EXCELLENT FOR DRY MACHINING ON STEEL WITH LARGE CHIP REMOVAL VOLUME	- SEHR GUT FÜR DIE TROCKENBEARBEITUNG VON STAHL MIT HOHEM ZERSPANVOLUMEN	- PARFAIT POUR LES USINAGES A SEC SUR ACIER AVEC DES VOLUMES D'ENLEVEMENT ELEVES
- SPECIAL PVD COATING THAT OPTIMISES THE FORMATION OF CHIPS	- BESONDERE PVD-BESCHICHTUNG, DIE DIE SPANBILDUNG OPTIMIERT	- REVÊTEMENT SPÉCIAL EN PVD OPTIMISANT LA FORMATION DU COPEAU

HT CERMET

HW METALLO DURO NON RICOPERTO
UNCOATED CARBIDE
UNBESCHICHTETES HARTMETALL
MÉTAL DUR PAS RECOUVERT

HC METALLO DURO RICOPERTO
COATED CARBIDE
BESCHICHTETES HARTMETALL
MÉTAL DUR RECOUVERT

SAU QUALITY TOOLS ENGINEERING

SAU	DIN ISO 513		MATERIALE - MATERIAL MATERIALIEN - MATÉRIAUX PAG. 1063						QUICK PICK PAG. 424			INDICAZIONI - USO
			P	M	K	N	S	H				
			ACCIAI STEELS STAHL ACIER	ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	GHISA CAST IRON GRAUGUSS FONTE GRISE	MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	MAT.DIFFICILI DIFFICULT MATERIAL SCHWERIGE MATERILIEN MAT. DIFICILES	MATERIALI DURI HARD MATERIALS HARTE MATERIALIEN MATÉRIAUX DURS	Tenacità Toughness + -			
F4140	HC / PVD	P30-50 M25-40 S20-30	●	●	○	○	●			●	●	- QUALITÀ PER FINITURA E MEDIA SGROSSATURA. PRIMA SCELTA PER OPERAZIONI CON BASSI AVANZAMENTI E/O BASSE VELOCITA DI TAGLIO. - ECCELLENTE PER LAVORAZIONI IN CONDIZIONI POCO STABILI E CON REFRIGERANTE. - CONSIGLIATO PER LAVORARE LE SUPERLEGHE
F4340	HC / PVD	P20-40 M20-30	●	●							●	- PER LA LAVORAZIONE DI ACCIAI E ACCIAI INOSSIDABILI A BASSE VELOCITÀ DI TAGLIO, CON AMPIO CAMPO APPLICATIVO - OTTIME PRESTAZIONI A UMIDO
T1435 NEW	HC / CVD	P25-45 M20-30	●	○						●	●	- GRADO INSERTO TENACE, PER LAVORAZIONI DIFFICILI IN CONDIZIONI INSTABILI E A TAGLIO INTERROTTO
F3010	HC / PVD	K05-20			●					●	●	- QUALITÀ PER LA FRESATURA DI GHISE - RIVESTIMENTO ULTRAFINE PER ELEVATE VELOCITÀ DI TAGLIO ADATTO ANCHE IN CONDIZIONI DI TAGLIO INSTABILI
F6315	HC / PVD	P10-30 M05-25 K05-25	●	●	●					○	●	- OTTIMA RESISTENZA ALL'USURA - QUALITÀ UNIVERSALE PER VARI TIPI DI MATERIALE - INDICATO PER MEDIE-ALTE VELOCITÀ DI TAGLIO
F8015	HC / PVD	S10-20					●			●	●	- NUOVO RIVESTIMENTO CON BUONA RESISTENZA ALL'USURA E OTTIMA LUBRIFICAZIONE - QUALITÀ SPECIFICA PER FRESATURA DI LEGHE E SUPER LEGHE RESISTENTI AL CALORE
F8115	HC / PVD	M10-20 K05-25 S05-15		○		○	●				●	- LEGA IN MICROGRANO RIVESTITA - IDEALE PER OPERAZIONI CHE NECESSITANO DI TAGLIENTI AFFILATI
T5120	HC / CVD	P10-30 K15-35	●		●			○		●	●	- QUALITA PER SGROSSATURA E MEDIA SGROSSATURA CON CONDIZIONI STABILI AD ELEVATE VELOCITA DI TAGLIO. - QUALITA ECCELLENTE PER ACCIAI DURI. OTTIMO COMPORTAMENTO ANCHE NELLA SGROSSATURA DI GHISA GRIGIA E GHISA SFEROIDALE
T525	HC / CVD	P15-35 M20-35 K30-40	●	●	○		○	○		●	●	- OTTIMO EQUILIBRIO TRA TENACITÀ E RESISTENZA ALL' USURA - INDICATO PER MEDIE VELOCITÀ DI TAGLIO E CON AVANZAMENTI MEDIO ALTI IN SGROSSATURA ANCHE IN CONDIZIONI INSTABILI
F1325 NEW	HC / PVD	P15-30 M20-30 K20-30	●	○	○					●	○	- LAVORAZIONE GENERICHE DI ACCIAIO, ACCIAIO INOX E ANCHE BUONA LAVORABILITÀ PER GHISA. - CONSIGLIATO PER LA LAVORAZIONE CON VELOCITÀ DI TAGLIO ELEVATE SE IN CONDIZIONI DI LAVORO STABILI.
F4325 NEW	HC / PVD	M20-40 S20-30		●			●			○	●	- SUBSTRATO IN NANOSTRUTTURA CON RIVESTIMENTO AD ALTO CONTENUTO DI Al. - SI PUÒ UTILIZZARE IN CONDIZIONI DI TAGLIO INSTABILE, INDICATO PER LAVORAZIONI CON ELEVATE SOLLECITAZIONI SUL TAGLIENTE. - IMPEGO PER LAVORAZIONI A BASSE VELOCITÀ DI TAGLIO.
F4330 NEW	HC / PVD	P20-40 M20-35	●	●						○	●	- SUBSTRATO IN NANOSTRUTTURA CON RIVESTIMENTO AD ALTO CONTENUTO DI Al. - SI PUÒ UTILIZZARE IN CONDIZIONI DI TAGLIO INSTABILE. - INSERTO CON BUONA RESISTENZA ALL'ABRASIONE E BUONA AFFIDABILITÀ
T533	HC / CVD	P10-35 M10-30 K15-25	●	●	○		●			●	●	- BUONA TENACITÀ E RESISTENZA ALL' USURA - INDICATO PER MEDIE VELOCITÀ DI TAGLIO IN SEMIFINITURA E FINITURA E PER MATERIALI CHE CREANO IL TAGLIENTE DI RIPORTO
F1035	HC / PVD	P25-40 M20-35	●	○			○			●	●	- QUALITÀ MOLTO TENACE - OTTIMA RESISTENZA ALL'USURA

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

INDICATIONS - USE	GEBRAUCHSANWEISUNGEN	INDICATION - USAGE
- PREMIUM QUALITY FOR MEDIUM ROUGHING AND FINISHING. FIRST CHOICE FOR SLOW FEED AND/OR SLOW CUTTING SPEEDS - OUTSTANDING FOR WORKING IN UNSTABLE CONDITIONS WITH COOLANT - RECOMMENDED FOR MACHINING SUPER ALLOYS	- QUALITÄT ZUM SCHLICHTEN UND MITTLEREM SCHRUPPEN. ERSTE WAHL FÜR ARBEITSSCHRITTE MIT NIEDRIGEM VORSCHUB U/O NIEDRIGER SCHNITTGESCHWINDIGKEIT. - AUSGEZEICHNET FÜR BEARBEITUNGEN UNTER UNSTABILEN BEDINGUNGEN UND MIT KÜHLMITTEL. - EMPFOHLEN ZUR BEARBEITUNG VON SUPERLEGIERUNGEN	- QUALITÉ POUR FINITION ET DÉGROSSISSAGE MOYEN. PREMIER CHOIX POUR DES OPÉRATIONS AVEC DES AVANCES MODIQUES ET/OU DE FAIBLES VITESSES DE COUPE. - PARFAIT POUR DES USINAGES DANS DES CONDITIONS PEU STABLES ET AVEC RÉFRIGÉRANT. - CONSEILLÉ POUR USINER LES SUPERALLIAGES
- FOR MACHINING STEELS AND STAINLESS STEELS AT SLOW CUTTING SPEEDS FOR A VAST RANGE OF APPLICATIONS - EXCELLENT WET PERFORMANCE	- FÜR DIE BEARBEITUNG VON STAHL UND EDELSTAHL MIT NIEDRIGER SCHNITTGESCHWINDIGKEIT, GROSSER ANWENDUNGSBEREICH - AUSGEZEICHNETE NASSLEISTUNGEN	- POUR L'USINAGE D'ACIERS ET ACIERS INOXYDABLES À DE FAIBLES VITESSES DE COUPE, AVEC AMPLE PLAGE D'APPLICATION - PERFORMANCES EXCEPTIONNELLES À L'EAU
- TOUGH DEGREE FOR DIFFICULT MACHINING UNDER UNSTABLE CONDITIONS AND WITH INTERRUPTED CUT	- ZÄHE SORTE FÜR SCHWERE BEARBEITUNGEN UNTER UNSTABILEN BEDINGUNGEN UND MIT UNTERBROCHENEM SCHNITT	- DEGRÉ PLAQUETTE TENACE POUR USINAGES DIFFICILES DANS DES CONDITIONS INSTABLES ET À COUPE INTERROMPUE
- MILLING GRADE FOR CAST-IRON - ULTRA-FINE COATING FOR HIGH CUTTING SPEEDS, ALSO SUITABLE UNDER UNSTABLE CUTTING CONDITIONS	- SORTE ZUM FRÄSEN VON GUSSEISEN - ULTRAFEINE BESCHICHTUNG FÜR HOHE SCHNITTGESCHWINDIGKEITEN, AUCH UNTER UNSTABILEN SCHNITTBEDINGUNGEN GEEIGNET	- QUALITÉ POUR LE FRAISAGE DES FONTES - REVÊTEMENT TRÈS FINE POUR ÉLEVÉE VITESSE DE COUPE APPROPRIÉ MÊME AVEC CONDITIONS DE COUPE INSTABLES
- EXCELLENT RESISTANCE TO WEAR - UNIVERSAL DEGREE FOR DIFFERENT TYPES OF MATERIALS - SUITABLE FOR MEDIUM TO HIGH CUTTING SPEEDS	- SEHR HOHE VERSCHLEISSFESTIGKEIT - UNIVERSALSORTE FÜR VERSCHIEDENE MATERIALIEN - FÜR MITTLERE BIS HOHE SCHNITTGESCHWINDIGKEITEN GEEIGNET	- RESISTANCE EXCELLENTE A L'USURE - QUALITE UNIVERSELLE POUR DIFFERENTS TYPES DE MATERIAU - INDIQUE EN CAS DE VITESSES DE COUPE HAUTES-MOYENNES
- NEW COATING WITH GOOD RESISTANCE TO WEAR AND EXCELLENT LUBRICATION - SPECIFIC MILLING GRADE FOR HEAT-RESISTANT ALLOYS AND SUPER-ALLOYS	- NEUE BESCHICHTUNG MIT GUTER VERSCHLEIßFESTIGKEIT UND SEHR GUTER SCHMIERUNG - SPEZIALSORTE ZUM FRÄSEN VON HITZEBESTÄNDIGEN LEGIERUNGEN UND SUPERLEGIERUNGEN	- NOUVEAU REVÊTEMENT AVEC BONNE RÉSISTANCE À L'USURE ET TRÈS BONNE LUBRIFICATION - QUALITÉ SPÉCIFIQUE POUR LE FRAISAGE DE ALLIAGES ET SUPER-ALLIAGES RÉSISTANTES À LA CHALEUR
- ALLOY IN COATED MICRO GRAIN - IDEAL WHEN SHARP CUTTING EDGES ARE A MUST	- LEGIERUNG AUS BESCHICHTETEM MIKROKORN - IDEAL FÜR ARBEITEN, WO SCHARFE SCHNEIDEN BENÖTIGT WERDEN	- ALLIAGE EN MICROGRAIN REVÊTU - IDÉAL POUR DES OPÉRATIONS REQUÉRANT DES TRANCHANTS AFFÛTÉS
- QUALITY FOR ROUGHING AND MEDIUM ROUGHING IN STABLE CONDITIONS WITH HIGH CUTTING SPEEDS - OUTSTANDING QUALITY FOR HARD STEELS. EXCELLENT BEHAVIOUR ALSO IN ROUGHING GREY CAST IRON AND SPHEROIDAL GRAPHITE CAST IRON	- QUALITÄT ZUM SCHRUPPEN UND MITTLEREM SCHRUPPEN UNTER STABILEN BEDINGUNGEN UND BEI HOHER SCHNITTGESCHWINDIGKEIT. - HERVORRAGENDE QUALITÄT FÜR HARTSTAHL. AUSGEZEICHNETES VERHALTEN AUCH BEIM SCHRUPPEN VON GRAUGUSS UND SPHÄROGUSS	- QUALITÉ POUR DÉGROSSISSAGE ET DÉGROSSISSAGE MOYEN DANS DES CONDITIONS STABLES À DES VITESSES DE COUPE ÉLEVÉES. - QUALITÉ EXCELLENTE POUR ACIERS DURS. COMPORTEMENT PARFAIT MÊME DANS LE DÉGROSSISSAGE DE FONTE GRISE ET FONTE SPHÉROÏDALE
-EXCELLENT BALANCE BETWEEN TOUGHNESS AND RESISTANCE TO WEAR -SUITABLE FOR MEDIUM CUTTING SPEEDS AND WITH MEDIUM-HIGH FEED FOR ROUGHINIG UNDER STABLE CONDITIONS	-OPTIMALE AUSGEWOGENHEIT ZWISCHEN ZÄHIGKEIT UND VERSCHLEISSFESTIGKEIT -FÜR MITTEL SCHNITTGESCHWINDIGKEITEN UND BEI MITTEL-GROSSEN VORSCHÜBEN,UNTER STABILEN BEDINGUNGEN, ZUM SCHRUPPEN GEEIGNET	-TRÉS BON ÉQUILIBRE ENTRE TENACITÉ ET RÉSISTANCE À L'USURE -INDIQUÉE POUR MOYENNE VITESSE DE COUPE ET MOYENNE-HAUT DÉPLACEMET POUR ÉBAUCHAGE EN CONDITION STABLE
- GENERAL MACHINING OF STEEL, STAINLESS STEEL AND GOOD MACHINABILITY FOR CAST IRON. - RECOMMENDED FOR HIGH CUTTING SPEED UNDER STABLE MACHINING CONDITIONS.	- ALLGEMEINE BEARBEITUNG VON STAHL, EDELSTAHL UND GUTE BEARBEITBARKEIT VON GUSS. - EMPFOHLEN ZUR BEARBEITUNG MIT HOHEN SCHNITTGESCHWINDIGKEITEN, WENN DIE ARBEITSBEDINGUNGEN STABIL SIND.	- USINAGES GÉNÉRIQUES D'ACIER, ACIER INOX ET ÉGALEMENT BONNE MANIABILITÉ POUR LA FONTE. - CONSEILLÉ POUR L'USINAGE AVEC DES VITESSES DE COUPE ÉLEVÉES, DANS LE CAS DE CONDITIONS DE TRAVAIL STABLES.
- NANOSTRUCTURE SUBSTRATE WITH HIGH AI CONTENT COATING. - IT CAN BE USED UNDER UNSTABLE CUTTING CONDITIONS, SUITABLE FOR APPLICATIONS WITH HIGH STRESS ON THE CUTTING EDGE. - USED FOR LOW CUTTING SPEED MACHINING.	- NANOSTRUKTURIERTES SUBSTRAT MIT BESCHICHTUNG MIT HOHEM ALUMINIUMGEHALT - UNTER UNSTABILEN SCHNITTBEDINGUNGEN EINSETZBAR, FÜR BEARBEITUNGEN MIT HOHEN BELASTUNGEN AN DER SCHNEIDKANTE GEEIGNET. - ANWENDUNG FÜR BEARBEITUNGEN MIT NIEDRIGEN SCHNITTGESCHWINDIGKEITEN.	- SUBSTRAT EN NANOSTRUCTURE AVEC REVETEMENT A HAUT CONTENU EN ALUMINIUM. - ON PEUT L'UTILISER DANS DES CONDITIONS DE COUPE INSTABLE, INDIQUE POUR DES USINAGES AVEC DES CONTRAINTES ELEVEES SUR LE TRANCHANT. - PREVU POUR DES USINAGES A FAIBLE VITESSE DE COUPE.
- NANOSTRUCTURE SUBSTRATE WITH HIGH AI CONTENT COATING. - IT CAN BE USED UNDER UNSTABLE CUTTING CONDITIONS - INSERT WITH GOOD RESISTANCE TO ABRASION AND GOOD RELIABILITY	- NANOSTRUKTURIERTES SUBSTRAT MIT BESCHICHTUNG MIT HOHEM ALUMINIUMGEHALT. - UNTER UNSTABILEN SCHNITTBEDINGUNGEN EINSETZBAR - WENDEPLATTE MIT GUTER ABRIEBFESTIGKEIT UND ZUVERLÄSSIGKEIT	- SUBSTRAT EN NANOSTRUCTURE AVEC REVETEMENT A HAUT CONTENU EN ALUMINIUM. - ON PEUT L'UTILISER DANS DES CONDITIONS DE COUPE INSTABLE. - PLAQUETTE AVEC UN BONNE RESISTANCE A L'ABRASION ET UNE BONNE FIABILITE
-GOOD TOUGHNESS AND RESISTANCE TO WEAR -SUITABLE FOR MEDIUM CUTTING SPEEDS FOR SESMIFINISHING AND FINISHING AND FOR MATERIALS THAT FORM A BUILT – UP EDGE	-HOHE ZÄHIGKEIT UND VERSCHLEISSFESTIGKEIT -FÜR MITTLERE SCHNITTGESCHWINDIGKEITEN BEIM HALBSCHLICHTEN UND SCHLICHTEN, SOWIE FÜR MATERIALIEN, DIE EINE AUFBAUSCHNEIDE BILDEN, GEEIGNET	-BONNE TENACITÉ ET RÉSISTANCE À L'USURE -INDIQUÉE POUR MOYENNE VITESSE DE COUPE EN SEMIFINISSAGE ET FINISSAGE ET POUR MATERIAUX QUI CRÉENT LE COUPANT DE RAPPORT
- VERY TOUGH GRADE - EXCELLENT RESISTANCE TO WEAR	- SEHR ZÄHE SORTE - OPTIMALE VERSCHLEISSFESTIGKEIT	- QUALITÉ TRES TENACE - TRES BONNE RESISTANCE À L'USURE

HT CERMET

HW METALLO DURO NON RICOPERTO
UNCOATED CARBIDE
UNBESCHICHTETES HARTMETALL
MÉTAL DUR PAS RECOUVERT

HC METALLO DURO RICOPERTO
COATED CARBIDE
BESCHICHTETES HARTMETALL
MÉTAL DUR RECOUVERT

SAU QUALITY TOOLS ENGINEERING

SAU	DIN ISO 513		MATERIALE - MATERIAL MATERIALIEN - MATÉRIAUX PAG. 1063						QUICK PICK PAG. 424			INDICAZIONI - USO
			P	M	K	N	S	H	Tenacità + / Toughness -			
			ACCIAI STEELS STAHL ACIER	ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	GHISA CAST IRON GRAUGUSS FONTE GRISE	MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	MAT.DIFFICILI DIFFICULT MATERIAL SCHWERIGE MATERILIEN MAT. DIFICILES	MATERIALI DURI HARD MATERIALS HARTE MATERIALIEN MATÉRIAUX DURS				
F1335 NEW	HC / PVD	P25-45 M30-40	●	○						●	○	- LAVORAZIONI DI ACCIAIO GENERICHE SPECIALMENTE INDICATO ALLE APPLICAZIONI DI FRESATURA A 90°. - INDICATO PER LAVORAZIONI SUI PIÙ COMUNI ACCIAI A MEDIO BASSE VELOCITÀ DI TAGLIO E IN CONDIZIONI DI INSTABILITÀ.
T540	HC / CVD	P25-45 M25-40	●	●		○	○			●	●	- ALTA TENACITÀ , BUONA RESISTENZA ALL' USURA E ALLO SHOCK TERMICO - INDICATO PER BASSE VELOCITÀ DI TAGLIO E ALTI AVANZAMENTI IN SGROSSATURA E SGROSSATURA PESANTE ANCHE IN CONDIZIONI PRECARIE
T544	HC / CVD	P20-40 M20-35	●	●	○	○	●			○	●	- ALTA TENACITÀ MEDIA RESISTENZA ALL' USURA - INDICATO PER MEDIO-BASSE VELOCITÀ DI TAGLIO IN MEDIA SGROSSATURA ANCHE IN CONDIZIONI INSTABILI
F4345 NEW	HC / PVD	P35-45 M40-45	●	○						●	○	- GRADO MOLTO TENACE PER LAVORAZIONE DI INSTABILITÀ E LAVORAZIONE A TAGLIO MOLTO INTERROTTO. - INDICATO PER SGROSSATURA DI ACCIAI GENERICI.

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

● APPLICAZIONE CONSIGLIATA
RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ
APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE
POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG
APPLICATION POSSIBLE

INDICATIONS - USE	GEBRAUCHSANWEISUNGEN	INDICATION - USAGE
- GENERAL MACHINING OF STEEL. SPECIALLY RECOMMENDED FOR 90° MILLING. - SUITABLE FOR MACHINING THE MOST COMMON STEEL TYPES WITH LOW-MEDIUM CUTTING SPEED UNDER STABLE MACHINING CONDITIONS.	- ALLGEMEINE STAHLBEARBEITUNG, BESONDERS FÜR 90°-FRÄSEN EMPFOHLEN. - GEEIGNET FÜR DIE BEARBEITUNG DER GÄNGIGSTEN STAHLSORTEN MIT NIEDRIG-MITTLEREN SCHNITTGESCHWINDIGKEITEN UNTER STABILEN ARBEITSBEDINGUNGEN.	- USINAGES D'ACIER GÉNÉRIQUES, SPÉCIALEMENT INDIQUÉ AUX APPLICATIONS DE FRAISAGE À 90°. - PRÉVU POUR DES USINAGES SUR LES ACIERS LES PLUS COMMUNS À DES VITESSES DE COUPE BASSES-MOYENNES ET DANS UN ÉTAT D'INSTABILITÉ.
-HIGH TOUGHNESS, RESISTANCE TO WEAR AND TO THERMAL SHOCK -SUITABLE FOR LOW CUTTING SPEEDS AND HIGH FEED FOR ROUGHING AND HEAVY ROUGHING, EVEN UNDER UNSTABLE CONDITIONS	-FÜR MITTEL-HOHE SCHNITTGESCHWINDIGKEITEN UND BEI MITTLEREN VORSCHÜBEN UNTER NORMALEN BEDINGUNGEN GEEIGNEIT -FÜR NIEDRIGE SCHNITTGESCHWINDIGKEITEN UND GROSSVORSCHÜBE BEIM SCHRUPPEN UND STARKEN SCHRUPPEN, AUCH UNTER UNSTABILEN BEDINGUNGEN, GEEIGNET.	-HAUTE TENACITÈ, RÉSISTANCE À L'USURE ET AU SHOCK THERMIQUE -INDIQUÉE POUR FAIBLE VITESSE DE COUPE ET HAUT DÉPLACEMENT POUR ÉBAUCHAGE ET ÉBAUCHAGE LOURD, MÊME AVEC CONDITIONS INSTABLES.
-HIGH TOUGHNESS, MEDIUM RESISTANCE TO WEAR -SUITABLE FOR MEDIUM – LOW CUTTING SPEEDS FOR MEDIUM ROUGHING, EVEN UNDER UNSTABLE CONDITIONS	-FÜR MITTEL-HOHE SCHNITTGESCHWINDIGKEITEN UND BEI MITTLEREN VORSCHÜBEN -FÜR MITTEL – NIEDRIGE SCHNITTGESCHWINDIGKEITEN BEIM MITTEL – STARKEN SCHRUPPEN, AUCH UNTER UNSTABILEN BEDINGUNGEN, GEEIGNET	-HAUTE TENACITÈ, MOYENNE RÉSISTANCE À L'USURE -INDIQUÉE POUR MOYENNE – FAIBLE VITESSE DE COUPE EN ÉBAUCHAGE MOYEN MÊME AVEC CONDITIONS INSTABLES
- VERY TOUGH GRADE FOR INSTABILITY MACHINING AND VERY INTERRUPTED-CUTTING MACHINING. - SUITABLE FOR ROUGHING OF GENERAL STEELS.	- SEHR ZÄHE SORTE FÜR INSTABILE BEARBEITUNGEN UND BEARBEITUNGEN MIT STARK UNTERBROCHENEM SCHNITT. - GEEIGNET ZUM SCHRUPPEN VON ALLGEMEINEN STÄHLEN.	- DEGRÉ TRÈS TENACE POUR L'USINAGE D'INSTABILITÉ ET L'USINAGE À COUPE TRÈS INTERROMPUE. - INDIQUÉ POUR LE DÉGROSSISSAGE D'ACIERS GÉNÉRIQUES.

HT CERMET

HW METALLO DURO NON RICOPERTO
UNCOATED CARBIDE
UNBESCHICHTETES HARTMETALL
MÉTAL DUR PAS RECOUVERT

HC METALLO DURO RICOPERTO
COATED CARBIDE
BESCHICHTETES HARTMETALL
MÉTAL DUR RECOUVERT

Vc(m/min)

Velocità di taglio delle qualità di fresatura - Cutting speed of the milling grades
Schnittgeschwindigkeit der frässorten - Vitesse decoupe de la qualité de plaquettes de fraisage

SAU QUALITY TOOLS ENGINEERING

MATERIALE MATERIAL MATERIALIEN MATÉRIAUX PAG 1063	VDI 3323 GR.	HB HRC Rm	C4010	DT61	DT63	N3105	N3015	N6315	N3620 NEW	N3440	T110	T115	T120
P ACCIAI STEELS STAHL ACIER	1	125	300-420	150-400	310-400								
	2	180	280-350	150-350	260-350								
	3	250	220-320	150-320	220-300								
	4	220	250-300	140-280	220-330								
	5	300	180-260	120-250	180-280								
	6	180	140-200	120-380	250-400								
	7-8	250-300	160-220	120-360	200-350								
	9	350	100-160	120-340	150-220								
	10	200	100-160	120-380	200-350								
	11	350	240-350	120-320	150-220								
	12	200	140-250	120-340									
	13	330	140-250	120-300									
M ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	14.1	180	100-280	120-360									80-120
	14.2	230-260	100-220	120-250									
K GHISA CAST IRON GRAUGUSS FONTE GRISE	15	180	180-400		200-300	200-280				100-200	90-160	90-160	90-145
	16	260	180-400		150-260					90-150	80-130	80-130	90-135
	17	160	150-250	100-480	180-300					100-180	90-160	100-160	90-135
	18	250	150-300	100-420	150-240					70-140	70-150	90-150	70-100
	19	130	150-300	100-600	170-280					90-180	90-160	100-160	90-145
	20	230	150-300	100-500	150-220					70-160	70-150	70-150	80-120
N MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	21	60				400-950	200-800	250-350	400-450	100-800	200-950	200-950	300-950
	22	100				400-950	200-800	250-350	400-450	80-800	200-950	200-950	300-950
	23	75				400-950	200-800	250-350	400-450	80-500	200-950	200-950	300-950
	24	90				400-950	200-800	250-350	400-450	100-450	200-950	200-950	300-800
	25	130				400-950	200-800	250-350	400-450	100-450	200-950	200-950	300-600
	26	110				400-950	200-300	250-350	250-335	80-400	200-600	200-600	150-500
	27	90				400-950	200-300	250-350	250-335	200-600	250-950	250-950	300-600
	28	100				400-950	200-300	250-350	250-335	100-300	150-600	150-600	150-450
	29					450-950	200-300	250-350	350-400	80-500	70-500	70-500	
	30					450-950	200-300	250-350	350-400	100-250	80-300	80-300	
S MAT.DIFFICILI DIFFICULT MATERIAL SCHWIERIGE MATERILIEN MAT. DIFICILES	31	200					30-130						
	32	280					30-130				20-30		
	33	250					30-130				16-24		20-25
	34	350					30-130				13-20		10-20
	35	320					30-130						10-20
	36	Rm400					30-130						25-30
	37	Rm1050					30-130						
H MATERIALI DURI HARD MATERIALS HARTE MATERILIEN MATÉRIAUX DURS	38	55HRC											25-30
	39	60HRC											
	40	400											
	41	55HRC											

Vc(m/min)

Velocità di taglio delle qualità di fresatura - Cutting speed of the milling grades
Schnittgeschwindigkeit der frässorten - Vitesse decoupe de la qualité de plaquettes de fraisage

SAU QUALITY TOOLS ENGINEERING

MATERIALE MATERIAL MATERIALIEN MATÉRIAUX PAG 1063	VDI 3323 GR.	HB HRC Rm	T500	F2425	F2435	F4635 NEW	F2140 NEW	F2740 NEW	F5105 NEW	F3710 NEW	F7010	T1415	T3115
P ACCIAI STEELS STAHL ACIER	1	125	305-410	130-250	170-190	120-260	100-250		220-310			220-400	
	2	180	270-370	130-250	170-190	120-260	100-250		220-310			220-400	
	3	250	250-330	130-250	170-190	120-260	100-250		220-310			220-400	
	4	220	220-310	130-250	170-190	120-260	100-250		220-310			220-400	
	5	300	180-250	130-250	170-190	120-260	100-250		220-310			220-400	
	6	180	210-280	130-250	90-150	120-220	80-200		270-300			220-400	
	7-8	250-300	150-200	60-180	90-150	100-180	80-200		270-300			200-320	
	9	350	120-170	60-180	90-150	100-180	80-200		270-300			200-320	
	10	200	160-220	80-200	120-200	80-150	80-150		210-250			180-320	
	11	350	120-170	80-200	120-200	80-150	80-150		210-250			180-320	
	12	200	200-280	120-250	140-180	80-150	80-150		150-200			200-320	
	13	330	120-200	120-250	140-180	80-150	80-150		150-200			200-320	
M ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	14.1	180	150-230	100-250	110-200	90-120	90-170	100-160					
	14.2	230-260	100-150	40-160	55-150	80-140	90-170	70-120					
K GHISA CAST IRON GRAUGUSS FONTE GRISE	15	180	250-350			110-190			260-330	120-250	140-290	140-370	180-350
	16	260	180-280			110-190			260-330	120-250	140-290	140-370	140-250
	17	160	200-300			110-190			230-280	120-250	100-240	190-430	130-250
	18	250	180-250			110-190			230-280	100-200	100-240	190-430	100-200
	19	130	250-380			110-190			230-280	100-200	100-220	180-520	150-320
	20	230	180-250			110-190			230-280	100-200	100-220	180-520	120-250
N MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	21	60	300-950										
	22	100	300-700										
	23	75	300-700										
	24	90	300-400										
	25	130	240-350										
	26	110	400-500										
	27	90	250-350										
	28	100	150-400										
	29		100-500										
	30		100-300										
S MAT.DIFFICILI DIFFICULT MATERIAL SCHWIERIGE MATERILIEN MAT. DIFICILES	31	200	70-110				30-70			30-70			
	32	280	70-110				30-70			30-70			
	33	250	60-100				30-70			30-70			
	34	350	60-90				30-70			30-70			
	35	320	60-90				30-70			30-70			
	36	Rm400	50-80				30-70			30-70			
	37	Rm1050	50-70				30-70			30-70			
H MATERIALI DURI HARD MATERIALS HARTE MATERILIEN MATÉRIAUX DURS	38	55HRC	70-110						80-140				
	39	60HRC	50-80						80-140				
	40	400	80-150						80-140				
	41	55HRC	60-130						80-140				

Vc(m/min)

Velocità di taglio delle qualità di fresatura - Cutting speed of the milling grades
Schnittgeschwindigkeit der frässorten - Vitesse decoupe de la qualité de plaquettes de fraisage

SAU QUALITY TOOLS ENGINEERING

MATERIALE MATERIAL MATERIALIEN MATÉRIAUX PAG 1063	VDI 3323 GR.	HB HRC Rm	T3215	F7115 NEW	T516	T3116 NEW	T518M	F3120 NEW	T3220	F3420	T5020	T1025	T1425
P ACCIAI STEELS STAHL ACIER	1	125		100-250			220-330	200-300	200-340		150-250	120-240	170-240
	2	180		100-250			200-300	200-300	200-340		150-250	120-240	170-240
	3	250		100-250			130-280	200-300	200-340		150-250	150-220	170-240
	4	220		100-250			160-270	200-300	200-340		150-250	110-190	170-240
	5	300		100-250			120-240	200-300	200-340		150-250	110-190	170-240
	6	180		100-250			130-250	180-250	200-340		150-250	110-190	170-240
	7-8	250-300		100-250			110-220	180-250	150-290		150-250	100-220	100-190
	9	350		80-150			80-120	180-250	150-290		150-250	80-180	130-210
	10	200		80-150			110-200	160-220	160-290		150-250	70-160	130-210
	11	350		80-150			80-120	160-220	160-290		150-250	70-160	130-220
	12	200		80-150			140-240	120-180	160-290		150-250	90-160	130-220
	13	330		80-150				120-180	160-290		150-250	90-160	130-220
M ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	14.1	180		80-150			120-260						100-210
	14.2	230-260		80-150			100-180						70-100
K GHISA CAST IRON GRAUGUSS FONTE GRISE	15	180	150-390	100-200	180-350	180-360	180-300	150-320	150-400	200-320	100-250		130-210
	16	260	150-390	100-200	140-280	180-360	120-180	150-320	150-400	160-250	100-250		130-210
	17	160	120-330	100-200	130-250	140-230	140-260	150-320	200-450	180-350	100-250		120-240
	18	250	120-330	100-200	100-200	140-250	100-180	110-180	200-450	180-340	100-250		120-240
	19	130	105-270	100-200	150-320	110-220	130-240	110-180	200-550	180-340	100-250		150-250
	20	230	105-270	100-200	120-250	110-220	100-160	110-180	200-550	150-300	100-250		150-250
N MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	21	60		200-300									
	22	100		200-300									
	23	75		200-300									
	24	90		200-300									
	25	130		200-300									
	26	110		200-300									
	27	90		200-300									
	28	100		200-300									
	29			200-300									
	30			200-300									
S MAT.DIFFICILI DIFFICULT MATERIAL SCHWIERIGE MATERILIEN MAT. DIFICILES	31	200					30-60						
	32	280					30-60						
	33	250					20-40						
	34	350					20-40						
	35	320					20-40						
	36	Rm400					50-100						
	37	Rm1050					30-50						
H MATERIALI DURI HARD MATERIALS HARTE MATERILIEN MATÉRIAUX DURS	38	55HRC		100-150									
	39	60HRC		100-150									
	40	400		100-150									
	41	55HRC		100-150									

Vc(m/min)

Velocità di taglio delle qualità di fresatura - Cutting speed of the milling grades
Schnittgeschwindigkeit der frässorten - Vitesse decoupe de la qualité de plaquettes de fraisage

SAU QUALITY TOOLS ENGINEERING

MATERIALE MATERIAL MATERIALIEN MATÉRIAUX PAG 1063	VDI 3323 GR.	HB HRC Rm	F4725 NEW	T526	T528N	T530	T1730 NEW	F4130	T5130 NEW	F1040	F4140	F4340	T1435 NEW
P ACCIAI STEELS STAHL ACIER	1	125	120-250	130-350	160-260	170-260	150-230	180-300	120-280	130-300	210-345	150-300	170-190
	2	180	120-250	110-320	130-220	150-240	150-230	180-300	100-250	130-300	210-345	100-250	170-190
	3	250	120-250	90-280	90-160	130-180	150-230	180-300	100-200	130-260	210-345	100-200	170-190
	4	220	120-250	100-280		120-170	150-230	180-300	120-250	130-260	175-290	100-220	170-190
	5	300	120-250	90-250		120-160	130-180	180-300	100-200	130-260	175-290	70-170	170-190
	6	180	120-250	80-250	150-220	140-200	130-180	130-250	80-180	100-230	145-240	100-220	170-190
	7-8	250-300	120-250	60-210	110-190	120-180	130-180	130-250	80-180	100-230	145-240	100-180	90-150
	9	350	100-220	60-180	90-160	100-120	130-180	130-250	80-180	75-175	145-240	100-160	120-200
	10	200	100-220	60-210	120-200	110-160	110-160	150-250	70-150	75-175	125-205	90-150	120-200
	11	350	100-220	60-170	90-140	80-100	110-160	150-250	70-150	75-175	125-205	70-150	140-180
	12	200	80-180	80-190	110-220	120-150	110-160	130-190	70-150	50-110	105-170	120-250	140-180
	13	330	80-180	70-170	90-180	80-120	110-160	130-190	70-150	50-110	105-170	60-120	140-200
M ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	14.1	180	120-250	110-200	120-180	100-150		130-270		110-270	110-235	80-160	
	14.2	230-260	120-250	120-210	80-120	80-120		100-180		100-230	85-150	70-130	
K GHISA CAST IRON GRAUGUSS FONTE GRISE	15	180		120-220	160-220	160-190		120-220	150-300		110-180		
	16	260		80-170	120-180	100-120		120-220	100-200		110-180		
	17	160		80-200	110-210	140-180		120-220	100-200		95-150		
	18	250		70-180	90-180	120-150		120-220	100-200		95-150		
	19	130		70-180	90-180	140-200		100-170	100-200		85-130		
	20	230		70-160	80-160	130-165		100-170	100-200		85-110		
N MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	21	60				300-1000					500-900		
	22	100				300-1000					500-900		
	23	75				150-1000					500-900		
	24	90				150-1000					500-700		
	25	130				150-700					500-700		
	26	110				100-400					330-550		
	27	90				100-400					330-550		
	28	100				100-400					330-550		
	29										500-900		
	30										500-900		
S MAT.DIFFICILI DIFFICULT MATERIAL SCHWIERIGE MATERILIEN MAT. DIFICILES	31	200		60-90	40-70						30-50		
	32	280		60-90	30-40						30-50		
	33	250			30-50	40-60					30-50		
	34	350			30-50	30-40					25-50		
	35	320			40-50	40-50					25-50		
	36	Rm400			60-80	40-70					50-80		
	37	Rm1050				30-50					50-80		
H MATERIALI DURI HARD MATERIALS HARTE MATERILIEN MATERIAUX DURS	38	55HRC						40-90			100-140		
	39	60HRC						30-60			80-110		
	40	400		70-130				50-100			100-140		
	41	55HRC						40-90			100-140		

Vc(m/min)

Velocità di taglio delle qualità di fresatura - Cutting speed of the milling grades
Schnittgeschwindigkeit der frässorten - Vitesse decoupe de la qualité de plaquettes de fraisage

SAU QUALITY TOOLS ENGINEERING

MATERIALE MATERIAL MATERIALIEN MATÉRIAUX PAG 1063	VDI 3323 GR.	HB HRC Rm	F3010	F6315	F8015	F8115	T5120	T525	F1325 NEW	F4325 NEW	F4330 NEW	T533	F1035
P ACCIAI STEELS STAHL ACIER	1	125		110-160			200-400	200-400	175-265		220-310	140-300	70-180
	2	180		110-160			200-400	170-320	175-265		220-310	130-280	70-180
	3	250		110-160			200-400	170-280	175-265		220-310	110-250	70-180
	4	220		110-160			200-400	180-280	175-265		220-310	110-300	70-180
	5	300		110-160			190-270	140-230	145-215		220-310	110-250	70-170
	6	180		110-160			190-270	190-310	145-215		250-280	110-220	70-170
	7-8	250-300		110-160			190-270	130-240	145-215		250-280	100-180	70-170
	9	350		110-160			190-270	100-170	145-215		250-280	80-120	70-170
	10	200		110-160			170-240	170-240	130-190		180-225	110-200	60-140
	11	350		110-160			170-240	100-160	130-190		180-225	60-120	60-140
	12	200		110-160			150-220	200-300	130-190		110-150	120-240	60-140
	13	330		110-160			150-220	100-150	130-190		110-150	110-180	60-140
M ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	14.1	180		90-120		100-200		160-260	90-150	110-180	100-160	120-230	40-140
	14.2	230-260		90-120		50-150		130-220	60-110	110-180	100-160	80-150	40-140
K GHISA CAST IRON GRAUGUSS FONTE GRISE	15	180	130-200	80-120		140-250	200-280	150-250	140-300			160-250	
	16	260	130-200	80-120		140-230	200-280	150-200	140-300			110-200	
	17	160	130-200	80-120		140-230	190-240	150-220	140-300			150-225	
	18	250	130-200	80-120		140-230	160-230	120-160	140-300			80-140	
	19	130	100-150	80-120		100-220	150-220	150-240	100-160			140-205	
	20	230	100-150	80-120		70-200	150-220	120-180	100-160			100-150	
N MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	21	60				400-950							
	22	100				400-950							
	23	75				400-950							
	24	90				400-950							
	25	130				250-500							
	26	110				250-500							
	27	90				400-950							
	28	100				400-950							
	29					400-950							
	30					400-950							
S MAT.DIFFICILI DIFFICULT MATERIAL SCHWIERIGE MATERILIEN MAT. DIFICILES	31	200			30-60					25-70		35-100	
	32	280			30-60					25-70		35-70	
	33	250			30-60			35-40		25-70		20-60	
	34	350			30-60			35-40		25-70		20-60	
	35	320			30-60			35-40		25-70		20-60	
	36	Rm400			30-50			50-75		40-95		35-60	
	37	Rm1050			30-50					40-95		35-60	
H MATERIALI DURI HARD MATERIALS HARTE MATERILIEN MATÉRIAUX DURS	38	55HRC						40-70					
	39	60HRC											
	40	400											
	41	55HRC											

Vc(m/min)

Velocità di taglio delle qualità di fresatura - Cutting speed of the milling grades
Schnittgeschwindigkeit der frässorten - Vitesse decoupe de la qualité de plaquettes de fraisage

SAU QUALITY TOOLS ENGINEERING

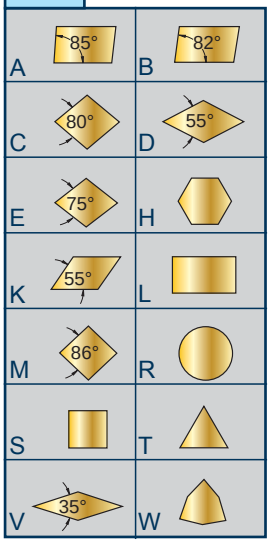
MATERIALE MATERIAL MATERIALIEN MATÉRIAUX PAG 1063	VDI 3323 GR.	HB HRC Rm	F1335 NEW	T540	T544	F4345 NEW							
P ACCIAI STEELS STAHL ACIER	1	125	150-230	170-250	170-260	100-220							
	2	180	150-230	140-200	150-240	100-220							
	3	250	150-230	120-150	130-180	100-220							
	4	220	150-230	110-150	120-170	100-220							
	5	300	130-180	100-120	120-160	140-215							
	6	180	130-180	140-200	140-200	140-215							
	7-8	250-300	130-180	100-140	120-180	140-215							
	9	350	130-180	70-100	100-120	140-215							
	10	200	110-160	90-130	110-160	130-190							
	11	350	110-160	60-100	80-100	130-190							
	12	200	110-160	120-170	120-150	130-190							
	13	330	110-160	80-130	80-120	130-190							
M ACCIAI INOX STAINLESS STEELS ROSTFREIER STAHL ACIER INOXYDABLE	14.1	180	80-140	70-180	100-150	70-130							
	14.2	230-260	80-140	60-130	80-120								
K GHISA CAST IRON GRAUGUSS FONTE GRISE	15	180			160-190								
	16	260			100-120								
	17	160			140-180								
	18	250			120-150								
	19	130			140-200								
	20	230			130-165								
N MAT.NON FERROSI NONFERROUS MAT. NICHTEISENMATERIALIEN MAT. FERREUX	21	60		300-1000	300-1000								
	22	100		300-700	300-1000								
	23	75		300-700	150-1000								
	24	90		300-500	150-1000								
	25	130		250-350	150-700								
	26	110		400-500	100-400								
	27	90		250-350	100-400								
	28	100			100-400								
	29												
	30												
S MAT.DIFFICILI DIFFICULT MATERIAL SCHWIERIGE MATERILIEN MAT. DIFICILES	31	200		35-100									
	32	280		35-70									
	33	250			40-60								
	34	350		20-60	30-40								
	35	320		40-60	40-50								
	36	Rm400		40-60	40-70								
	37	Rm1050			30-50								
H MATERIALI DURI HARD MATERIALS HARTE MATERILIEN MATÉRIAUX DURS	38	55HRC											
	39	60HRC											
	40	400											
	41	55HRC											

Denominazione degli inserti per fresatura
Inserts designation for milling

SAU QUALITY TOOLS ENGINEERING

A	P	K	T	10	03	P	D	T	R	.	-	-	-	P
1	2	3	4	5	6	7a/7b		8	9		10	11	12	13

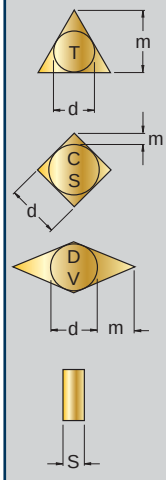
1 FORMA INSERTO / SHAPE OF INSERT



2 SPOGLIA INFER. / RELIEF ANGLE

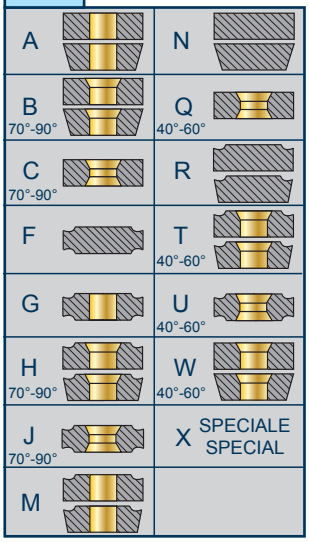
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

3 TOLLERANZA+/-{mm} / TOLERANCE+/-{mm}



	m	s	d
A	+/-0,005	+/-0,025	+/-0,025
C	+/-0,013	+/-0,025	+/-0,025
E	+/-0,025	+/-0,025	+/-0,025
F	+/-0,005	+/-0,025	+/-0,013
G	+/-0,025	+/-0,05 +/-0,13	+/-0,025
H	+/-0,013	+/-0,025	+/-0,013
J	+/-0,005	+/-0,025	+/-0,05 +/-0,13
K	+/-0,013	+/-0,025	+/-0,05 +/-0,13
L	+/-0,05	+/-0,013	+/-0,025
M	+/-0,08 +/-0,18	+/-0,13	+/-0,05 +/-0,18
N	+/-0,08 +/-0,18	+/-0,025	+/-0,05 +/-0,13
U	+/-0,13 +/-0,38	+/-0,05 +/-0,13	+/-0,08 +/-0,32

4 TIPO INSERTO / TYPE OF INSERT



5 LUNGHEZZA TAGLIENTE / CUTTING EDGE LENGTH

ød CERCHIO INSCRITTO / INSCRIBED CIRCLE	A	C	D	E	K	L	M	R	S	T	V	W
3,97												02
4,76										08		02-03
5,56		05								09		
6,00												03
6,35		06	07	06			06		06	11	11	04
6,70	10											
7,94									07			
8,00				08								05
9,45	16											
9,52	15-16	09	11	09	16	15	09		09	16	16	06
10,00								10				06
11,00									11			
11,50						12						
12,00								12				07
12,62						18						
12,70		12	15	12		15-20			12	22		08
15,87		16							15			
19,05		19							19			

6 SPESSORE / THICKNESS

S	mm
01	1,59
T1	1,97
02	2,38
T2	2,78
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
09	9,52

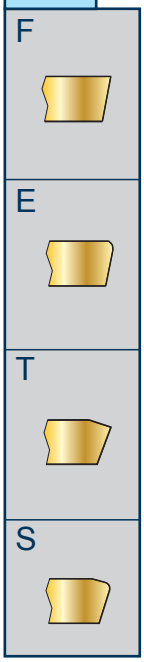
7a RAGGIO / RADIUS

R	00 ” MO (mm)
r (mm)	
02	r=0,2
04	r=0,4
05	r=0,5
06	r=0,6
08	r=0,8
10	r=1,0
12	r=1,2
16	r=1,6

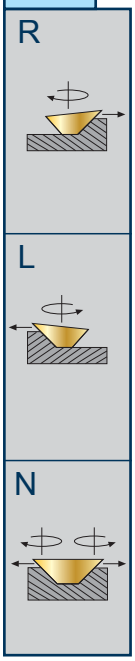
7b SMUSSO / CHAMFER

K°	X°
A=45°	D=15°
D=60°	E=20°
E=75°	F=25°
F=85°	N=0°
P=90°	P=11°
Z=SPEC	Z=SPEC

8



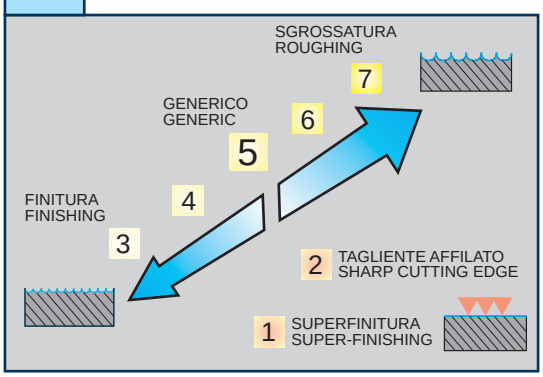
9



10 LETTERA DI IDENTIF. / IDENTIFICATION LETTER

A	N
C	P
D	R
E	S
H	T
I	U
J	W
K	Y
L	Z
M	

11 CAMPO DI LAVORAZIONE / MACHINING TYPES



12 PREPARAZIONE TAGLIENTE / CUTTING EDGE PREPARATION

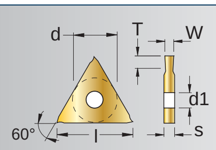
1 =	SPECIFICO PER GHISA SPECIFIC FOR CAST IRON
3 =	SPECIFICO PER ACCIAIO INOX SPECIFIC FOR STAINLESS STEEL
7 =	SPECIFICO PER LEGHE DI ALLUMINIO SPECIFIC FOR ALUMINIUM ALLOYS
9 =	SPECIFICO PER ACCIAIO SPECIFIC FOR STEEL
2 = 4 = 5 = 6 = 8 =	INTERMEDI DI USO GENERICO INTERMEDIATE FOR GENERAL USE

13

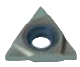
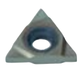
LUCIDATO
POLISH

SAU QUALITY TOOLS ENGINEERING

156.15
154.15



HT: CERMET | HW: NON RIVESTITI - CEMENTED CARBIDE GRADES | HC: RIVESTITI - COATED GRADES - BESCHICHTET - RECOUVERTS

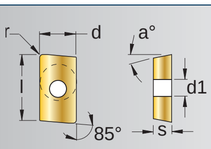
ART.	COD.	l	d	s	d1	W	T	N6315	N3440	F4340	F6315
	TOLLERANZA **W** - **W** TOLERANCE					+0,05 +0,01					
F ● M ● R ○  C54	156.15-16110 .C54	16,0	9,52	3	4,5	1,10	3,0				■
	156.15-16130 .C54	16,0	9,52	3	4,5	1,30	3,0				■
	156.15-16160 .C54	16,0	9,52	3	4,5	1,60	3,0				■
	156.15-16185 .C54	16,0	9,52	3	4,5	1,85	3,0				■
	156.15-16215 .C54	16,0	9,52	3	4,5	2,15	3,0				■
	156.15-16265 .C54	16,0	9,52	3	4,5	2,65	3,0				■
	156.15-16315 .C54	16,0	9,52	3,5	4,5	3,15	3,3				■
	156.15-16415 .C54	16,0	9,52	4,5	4,5	4,15	3,3				■
F ● M ● R ○  C57	156.15-16110 .C57	16,0	9,52	3	4,5	1,10	3,0	■			
	156.15-16130 .C57	16,0	9,52	3	4,5	1,30	3,0	■			
	156.15-16160 .C57	16,0	9,52	3	4,5	1,60	3,0	■			
	156.15-16185 .C57	16,0	9,52	3	4,5	1,85	3,0	■			
	156.15-16215 .C57	16,0	9,52	3	4,5	2,15	3,0	■			
	156.15-16265 .C57	16,0	9,52	3	4,5	2,65	3,0	■			
	156.15-16315 .C57	16,0	9,52	3,5	4,5	3,15	3,3	■			
	156.15-16415 .C57	16,0	9,52	4,5	4,5	4,15	3,3	■			
	TOLLERANZA **W** - **W** TOLERANCE					+0,05 -0,05					
F ● M ● R ○ 	154.15-16110	16,0	9,52	2,5	4,5	1,25	1,2		■	■	
	154.15-16130	16,0	9,52	2,5	4,5	1,45	1,5		■	■	
	154.15-16160	16,0	9,52	2,5	4,5	1,80	1,8		■	■	
	154.15-16185	16,0	9,52	2,5	4,5	2,00	3		■	■	
	154.15-16215	16,0	9,52	2,8	4,5	2,30	3		■	■	
	154.15-16265	16,0	9,52	3,3	4,5	2,80	3		■	■	
	154.15-16315	16,0	9,52	3,8	4,5	3,35	3		■	■	

	MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX	N6315	N3440	F4340	F6315
P	ACCIAIO - STEEL - STAHL - ACIER			●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE			●	●
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE		●		●
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●	●		
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR				
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS				

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

APK.
APHT



HT: CERMET — HW: NON RIVESTITI - CEMENTED CARBIDE GRADES — HC: RIVESTITI - COATED GRADES - BESCHICHTET - RECOUVERTS

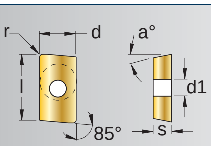
ART.	COD.	l	d	s	d1	r	a°	T120 (HW)	F2140 NEW (HC)	T516	T526	T528N	T530	T525	T533	F1035
F ● M ● R ○  .I52	APKT 1003 PDR .I52	10,5	6,70	3,5	2,8	0,5	11					■				
F ○ M ● R ●  .L52	APKT 1003 PDER .L52	10,5	6,70	3,5	2,8	0,5	11								■	
F ○ M ● R ●  .S52	APKT 1003 PDTR .S52	10,5	6,70	3,5	2,8	0,5	11			■			■			
F ○ M ● R ●  .S52	APKX 1003 PDR .S52	10,5	6,70	3,5	2,8	0,5	11							■		
F ● M ● R ●  .Z53	APHT 100312 SR .Z53	10,5	6,70	3,5	2,8	1,2	11		■ (NEW)							
	APHT 100320 SR .Z53	10,5	6,70	3,5	2,8	2,0	11		■ (NEW)							
F ○ M ● R ●  .Z54	APKT 1003 PDER .Z54	10,5	6,70	3,5	2,8	0,5	11									■
	APKT 1003 PDSR .Z54	10,5	6,70	3,5	2,8	0,5	11				■					
F ● M ● R ●  .S57	APHT 1003 PDFR .S57	10,5	6,70	3,5	2,8	0,5	11	■								

	MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX	T120	F2140 NEW	T516	T526	T528N	T530	T525	T533	F1035
P	ACCIAIO - STEEL - STAHL - ACIER		○		●	●	●	●	●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE		●		○	○	●	●	●	
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	●		●	●	○	○	○	○	
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●					○			
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR	○	○		○	○	○	○	○	
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS							○		

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

APK.
APF.
APM.



HT: CERMET — HW: NON RIVESTITI / CEMENTED CARBIDE GRADES — HC: RIVESTITI / COATED GRADES / BESCHICHTET / RECOUVERTS

ART.	COD.	l	d	s	d1	r	a°	T110 (HW)	T120 (HW)	F4635 NEW (HC)	T516 (HC)	T526 (HC)	T528N (HC)	T530 (HC)	F8015 (HC)	T525 (HC)	T544 (HC)
F M R  .S51	APKT 1604 PDR .S51	17,0	9,45	5,26	4,4	0,4	11		■								
F M R  .I52	APMT 1604 PDR .I52	17,0	9,45	5,26	4,4	0,8	11						■				
F M R  .K52	APKT 1604 PDSR .K52	17,0	9,45	5,26	4,4	0,8	11								■		
F M R  .S52	APKT 1604 PDTR .S52	17,0	9,45	5,26	4,4	0,8	11				■			■			
F M R  .Z52	APKT 1604 PDSR .Z52	17,0	9,45	5,26	4,4	0,8	11			■ (NEW)							
F M R  .S52	APFT 1604 PDTR .S52	17,0	9,45	4,76	4,4	0,8	11									■	
F M R  .S52	APKX 1604 PDR .S52	17,0	9,45	5,76	4,4	0,8	11				■					■	■
F M R  .S52	APFX 160416R .S52	17,0	9,45	4,76	4,4	1,6	11									■	
	APFX 160424R .S52	17,0	9,45	4,76	4,4	2,4	11									■	
	APFX 160430R .S52	17,0	9,45	4,76	4,4	3,0	11									■	
	APFX 160440R .S52	17,0	9,45	4,76	4,4	4,0	11									■	
	APFX 160448R .S52	17,0	9,45	4,76	4,4	4,8	11									■	
	APFX 160460R .S52	17,0	9,45	4,76	4,4	6,0	11										■
F M R  .S54	APKT 1604 PDTR .S54	17,0	9,45	5,26	4,4	0,4	11									■	
F M R  .Z54	APKT 1604 PDSR .Z54	17,0	9,45	5,26	4,4	0,8	11					■					
F M R  .K57P	APKT 1604 PDFR .K57P	16,4	9,53	4,76	4,4	0,2	11	■									

	MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX	T110	T120	F4635 NEW	T516	T526	T528N	T530	F8015	T525	T544
P	ACCIAIO - STEEL - STAHL - ACIER			●		●	●	●		●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE		○	●		○	○	●		●	●
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE		●	○	●	●	○	○		○	○
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●	○					○			○
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR		○			○	○	○	●	○	○
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS									○	

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

BD..		LNMM..		ART	COD.	l	d	s	d1	r	a°
				.Y57	BDGT 11T302FR .Y57	11,0	6,7	3,8	2,8	0,2	18
					BDGT 11T304FR .Y57	11,0	6,7	3,8	2,8	0,4	18
					BDGT 11T308FR .Y57	11,0	6,7	3,8	2,8	0,8	18
					BDGT 170404FR .Y57	17,0	9,6	4,9	4,4	0,4	18
					BDGT 170408FR .Y57	17,0	9,6	4,9	4,4	0,8	18
					BDGT 170420FR .Y57	17,0	9,6	4,9	4,4	2,0	18
					BDGT 170431FR .Y57	17,0	9,6	4,9	4,4	3,1	18
				.Y42	BDMT 070304ER .Y42	6,7	4,6	2,6	2,3	0,4	16
					BDMT 11T304ER .Y42	11,0	6,7	3,8	2,8	0,4	18
					BDMT 11T308ER .Y42	11,0	6,7	3,8	2,8	0,8	18
					BDMT 170404ER .Y42	17,0	9,6	4,9	4,4	0,4	18
					BDMT 170408ER .Y42	17,0	9,6	4,9	4,4	0,8	18
				.Y52	BDMT 070302ER .Y52	6,7	4,6	2,6	2,3	0,2	16
					BDMT 070304ER .Y52	6,7	4,6	2,6	2,3	0,4	16
					BDMT 11T308ER .Y52	11,0	6,7	3,8	2,8	0,8	18
					BDMT 11T312ER .Y52	11,0	6,7	3,8	2,8	1,2	18
					BDMT 11T316ER .Y52	11,0	6,7	3,8	2,8	1,6	18
					BDMT 11T320ER .Y52	11,0	6,7	3,8	2,8	2,0	18
					BDMT 11T324ER .Y52	11,0	6,7	3,8	2,8	2,4	18
					BDMT 11T331ER .Y52	11,0	6,7	3,8	2,8	3,1	18
					BDMT 170404ER .Y52	17,0	9,6	4,9	4,4	0,4	18
					BDMT 170408ER .Y52	17,0	9,6	4,9	4,4	0,8	18
					BDMT 170412ER .Y52	17,0	9,6	4,9	4,4	1,2	18
					BDMT 170416ER .Y52	17,0	9,6	4,9	4,4	1,6	18
					BDMT 170420ER .Y52	17,0	9,6	4,9	4,4	2,0	18
					BDMT 170424ER .Y52	17,0	9,6	4,9	4,4	2,4	18
					BDMT 170431ER .Y52	17,0	9,6	4,9	4,4	3,1	18
					BDMT 170440ER .Y52	17,0	9,6	4,9	4,4	4,0	18
				.F56	LNMM 100605 .F56	10	6,5	6,5	3,5	0,5	–
					LNMM 151008 .F56 New	15	10	10	4,5	0,8	–
				.F61	LNMM 100605 .F61	10	6,5	6,5	3,5	0,5	–
					LNMM 151008 .F61	15	10	10	4,5	0,8	–
					NEW						

HT – CERMET

HW – NON RIVESTITI CEMENTED CARBIDE GRADES

HC – RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

	N3015	NEW F3710	NEW T3116	NEW F3120	F3420	NEW F4725	NEW F1325	NEW F1335	NEW F4345
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			■	■					
			■	■					

MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX

		N3015	NEW F3710	NEW T3116	NEW F3120	F3420	NEW F4725	NEW F1325	NEW F1335	NEW F4345
P	ACCIAIO - STEEL - STAHL - ACIER				○		●	●	●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE						●	○	○	○
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE		●	●	●	●		○		
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●								
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR	○	○							
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS									

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

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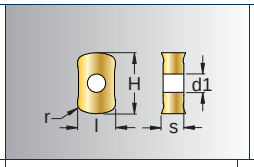
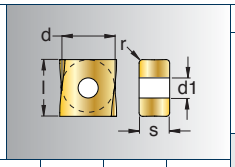
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

LNMT..		LNMX	

ART	COD.	l	d/H	s	d1	r	a°
FOMR .X52	LNMT 060312 .X52	6,2	10	3,65	3	1,2	–
	NEW						
FOMR .F58	LNMX 131308 .F58	13	13	7,94	4,6	–	0,8
	NEW						
FOMR .F61	LNMX 131308 .F61	13	13	7,94	4,6	–	0,8
	NEW						

	HT	HW	HC				
	CERMET	NON RIVESTITI CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS				
			NEW F3120	F4130	T5120	NEW F1325	NEW F1335
.X52				■	■		
.F58						■	■
.F61			■				

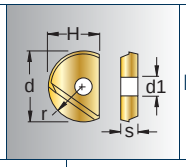
MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX		NEW F3120	F4130	T5120	NEW F1325	NEW F1335
P	ACCIAIO - STEEL - STAHL - ACIER	○	●	●	●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE		●		○	○
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	●	○	●	○	
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM					
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR					
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS		○	○		

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

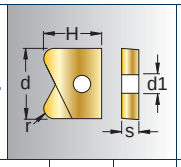
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

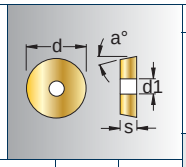
RA..



RAET..



RD..



ART	COD.	d	s	d1	H	r	a°	HT CERMET N3620	HW NON RIVESTITI CEMENTED CARBIDE GRADES T500	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F5105	F7115	F4325	F4330
 .K32W	RA 08. 04 .K32W	8,0	2,4	2,5	7	4	–				■		
	RA 10. 04 .K32W	10,0	2,6	3,0	8,5	5	–				■		
	RA 12. 04 .K32W	12,0	3,0	3,5	10	6	–				■		
	RA 16. 04 .K32W	16,0	4,0	4,0	12	8	–				■		
	RA 20. 04 .K32W	20,0	5,0	5,0	15	10	–				■		
	RA 25. 04 .K32W	25,0	6,0	6,0	18,5	12,5	–				■		
	RA 32. 04 .K32W	32,0	7,0	8,0	23,5	16	–				■		
	NEW												
 .P42	RAET 100008 .P42	10,0	2,6	3,0	8,5	0,8	–		■				
	RAET 120010 .P42	12,0	3,0	3,5	10	1,0	–		■				
	RAET 120020 .P42	12,0	3,0	3,5	10	2,0	–		■				
	RAET 160013 .P42	16,0	4,0	4,0	12	1,3	–		■				
	RAET 160030 .P42	16,0	4,0	4,0	12	3,0	–		□				
	RAET 200016 .P42	20,0	5,0	5,0	15	1,6	–		■				
	RAET 200040 .P42	20,0	5,0	5,0	15	4,0	–		□				
	RAET 250020 .P42	25,0	6,0	6,0	18,5	2,0	–		■				
 .T42	RDHX 0501 MOE .T42	5,0	1,51	2,2	–	–	15			■			
	RDHX 07T1 MOT .T42	7,0	1,98	2,8	–	–	15			■			
	RDHX 0702 MOT .T42	7,0	2,38	2,8	–	–	15			■			
	RDHX 1003 MOT .T42	10,0	3,18	3,9	–	–	15			■			
	RDHX 12T3 MOT .T42	12,0	3,97	3,9	–	–	15			■			
	RDHX 1604 MOT .T42	16,0	4,76	5,2	–	–	15			■			
	NEW												
 .T56	RDET 1003 MOSN .T56	10,0	3,18	4,4	–	–	15					■	■
	RDET 12T3 MOSN .T56	12,0	3,97	4,4	–	–	15					■	■
	NEW												
 .T56	RDEX 1604 MOSN .T56	16,0	4,76	5,5	–	–	15					■	■
	NEW												
 .T56	RDEW 1003 MOSN .T56	10,0	3,18	4,4	–	–	15						■
	RDEW 12T3 MOSN .T56	12,0	3,97	4,4	–	–	15						■
	RDEW 1604 MOSN .T56	16,0	4,76	5,5	–	–	15						■
	NEW												
 .T57P	RDHT 07T1 MO .T57P	7,0	1,98	2,8	–	–	15	■					
	RDHT 0702 MO .T57P	7,0	2,38	2,8	–	–	15	■					
	RDHT 1003 MO .T57P	10,0	3,18	3,9	–	–	15	■					
	RDHT 12T3 MO .T57P	12,0	3,97	3,9	–	–	15	■					
	RDHT 1604 MO .T57P	16,0	4,76	5,2	–	–	15	■					
	NEW												

MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX

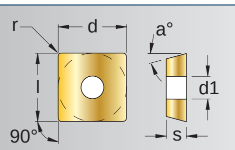
		N3620	T500	F5105	F7115	F4325	F4330
P	ACCIAIO - STEEL - STAHL - ACIER		●	●	●		●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE		○		○	●	●
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE		●	●	●		
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●	●		○		
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR		○			●	
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS		●	●	○		

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

SCMX SD..



HT: CERMET — HW: NON RIVESTITI / CEMENTED CARBIDE / GRADES — HC: RIVESTITI / COATED GRADES / BESCHICHTET / RECOUVERTS

ART.	F/M/R	COD.	l	d	s	d1	r	a°	DT61 (HT)	N3105 (HW)	T115 (HW)	F4635 (HC, NEW)	F2140 (HC, NEW)	T3215 (HC, NEW)	T518M (HC)	T5130 (HC, NEW)	F1040 (HC)	F4140 (HC)
.S52	F – / M ● / R –	SCMX 120408 ZN .S52	12,7	12,7	4,76	5,3	0,8	7										■
.Z42	F ● / M ○ / R –	SDHW 0903 AESN .Z42 (IN ESAURIMENTO / END OF STOCK / AUSLAUFEND / EN ÉPUISEMENT)	9,52	9,52	3,2	3,4	–	15	■									
.L54	F ● / M ● / R ○	SDNT 0903 AESN .L54 (IN ESAURIMENTO / END OF STOCK / AUSLAUFEND / EN ÉPUISEMENT)	9,52	9,52	3,2	3,4	–	15							■		■	
.L56	F ● / M ● / R –	SDKT 0903 AESN .L56 (IN ESAURIMENTO / END OF STOCK / AUSLAUFEND / EN ÉPUISEMENT)	9,52	9,52	3,2	3,4	–	15							■			
.L58	F ● / M ● / R ○	SDEX 0903 AEFN .L58 (IN ESAURIMENTO / END OF STOCK / AUSLAUFEND / EN ÉPUISEMENT)	9,52	9,52	3,2	3,4	–	15		■								
.Z51	F ○ / M ● / R ●	SDMT 1205 ZZSN .Z51	12,7	12,7	5,0	5,5	0,8	15						■ (NEW)				
.Z57P	F – / M ● / R ●	SDHT 120508 FR .Z57P	12,7	12,7	5,0	5,5	0,8	15			■							
.Z62	F ○ / M ● / R ●	SDMT 1205 ZZSN .Z62	12,7	12,7	5,0	5,5	0,8	15				■ (NEW)	■ (NEW)			■ (NEW)		
.Z63	F ○ / M ● / R ●	SDHT 120512 FR .Z63	12,7	12,7	5,0	5,5	1,2	15					■ (NEW)					

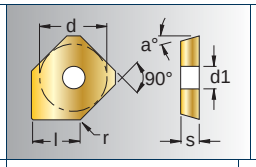
	MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX	DT61	N3105	T115	F4635	F2140	T3215	T518M	T5130	F1040	F4140
P	ACCIAIO - STEEL - STAHL - ACIER	●			●	○		●	●	●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE	●			●	●		○	○	○	●
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	○	○		○		●	●	●		●
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM		●	●							○
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR					○					●
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS										

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

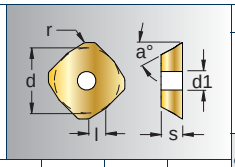
□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

SEEX



SEKX



ART	COD.	l	d	s	d1	r	a°	HT CERMET DT63	HW NON RIVESTITI CEMENTED CARBIDE GRADES N3005	HW N3105	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F7010	HC T3215	HC T518M	HC T528N	HC F1040	HC F8115	HC T533
.M12	SEEX 13T3 AGTR .M12	8,2	13,4	3,97	4,1	1,5	20	■	■								
.L44	SEKT 13T3 AZFN .L44	13,4	13,4	3,97	4,1	–	20			■							
.L44	SEKT 13T3 AZEN .L44	13,4	13,4	3,97	4,1	–	20									■	
.L54	SEKT 13T3 AZEN .L54	13,4	13,4	3,97	4,1	–	20						■	■			■
.L55	SEKT 13T3 AZTN .L55	13,4	13,4	3,97	4,1	–	20				■						
.L51	SEKW 13T3 AZTN .L51	13,4	13,4	3,97	4,1	–	20					■					
.Z52	SEKX 1305 AGSR .Z52	3,9	15,17	5,58	4,1	1,0	20							■			

MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX

		DT63	N3005	N3105	F7010	T3215	T518M	T528N	F1040	F8115	T533
P	ACCIAIO - STEEL - STAHL - ACIER	●					●	●	●		●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE						●	○	●	○	●
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	●	●	○	●	●	○	○			○
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM			●	○					○	
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR						○	○		●	●
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS										

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

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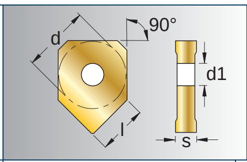
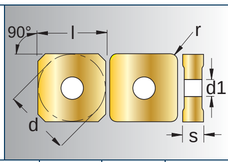
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SNEX



SNMX



HT	HW	HC
CERMET	NON RIVESTITI CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

ART	COD.	l	d	s	d1	r	a°	F2740 (NEW)	T3116 (NEW)	F3120 (NEW)	F3420 (NEW)	T1025	T1730 (NEW)	F3010	F1335 (NEW)
 .K11	SNEX 1206NN .K11	8,5	12,7	6,35	4,5	–	–							■	
 .F51	SNMX 1206NN .F51 NEW	12,7	12,7	6,35	5,4	–	–		■ NEW	■ NEW					
 .F52	SNMX 1206NN .F52	12,7	12,7	6,35	5,4	–	–					■			
 .F53	SNMX 1206NN .F53 NEW	12,7	12,7	6,35	5,4	–	–	■ NEW							
 .F56	SNMX 1206NN .F56	12,7	12,7	6,35	5,4	–	–				■ NEW				
 .F58	SNMX 1206NN .F58 NEW	12,7	12,7	6,35	5,4	–	–						■ NEW		■ NEW
 .F51	SNMX 1206QNN .F51 NEW	12,7	12,7	6,35	5,4	0,8	–		■ NEW	■ NEW					
 .F53	SNMX 1206QNN .F53 NEW	12,7	12,7	6,35	5,4	0,8	–	■ NEW							
 .F58	SNMX 1206QNN .F58 NEW	12,7	12,7	6,35	5,4	0,8	–						■ NEW		■ NEW
 .F51	SNMX 120612 .F51 NEW	12,7	12,7	6,35	5,4	1,2	–		■ NEW						
 .F58	SNMX 120612 .F58 NEW	12,7	12,7	6,35	5,4	1,2	–						■ NEW		■ NEW

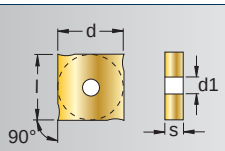
	MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX	F2740 (NEW)	T3116 (NEW)	F3120 (NEW)	F3420 (NEW)	T1025	T1730 (NEW)	F3010	F1335 (NEW)
P	ACCIAIO - STEEL - STAHL - ACIER			○		●	●		●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE	●							○
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE		●	●	●			●	
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM								
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR								
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS								

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

SNHX



ART.	COD.	l	d	s	d1	r	a°	HT CERMET T115	HW NON RIVESTITI CEMENTED CARBIDE GRADES T115	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS T5020	HC T528N	HC F1035
F M R	 .Z47											
	SNHX 1102 .Z47	11,0	11,0	2,3	4,4	–	–		■			
	SNHX 1103 .Z47	11,0	11,0	2,7	4,4	–	–		■			
	SNHX 1203 .Z47	12,7	12,7	3,2	5,0	–	–		■			
	SNHX 1204 .Z47	12,7	12,7	4,0	5,0	–	–		■			
	SNHX 12045 .Z47	12,7	12,7	4,5	5,0	–	–		■			
	SNHX 1205 .Z47	12,7	12,7	5,4	5,0	–	–		■			
	SNHX 1207 .Z47	12,7	12,7	7,0	5,0	–	–		■			
F M R	 .Z52											
	SNHX 1102 .Z52	11,0	11,0	2,3	4,4	–	–			■	■	
	SNHX 1103 .Z52	11,0	11,0	2,7	4,4	–	–			■	■	
	SNHX 1203 .Z52	12,7	12,7	3,2	5,0	–	–			■	■	
	SNHX 1204 .Z52	12,7	12,7	4,0	5,0	–	–			■	■	
	SNHX 12045 .Z52	12,7	12,7	4,5	5,0	–	–			■	■	
	SNHX 1205 .Z52	12,7	12,7	5,4	5,0	–	–			■	■	
	SNHX 1207 .Z52	12,7	12,7	7,0	5,0	–	–			■	■	
F M R	 .Z62											
	SNHX 1102 .Z62	11,0	11,0	2,3	4,4	–	–					■
	SNHX 1103 .Z62	11,0	11,0	2,7	4,4	–	–					■
	SNHX 1203 .Z62	12,7	12,7	3,2	5,0	–	–					■
	SNHX 1204 .Z62	12,7	12,7	4,0	5,0	–	–					■
	SNHX 12045 .Z62	12,7	12,7	4,5	5,0	–	–					■
	SNHX 1205 .Z62	12,7	12,7	5,4	5,0	–	–					■
	SNHX 1207 .Z62	12,7	12,7	7,0	5,0	–	–					■

MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX

		T115	T5020	T528N	F1035
P	ACCIAIO - STEEL - STAHL - ACIER		●	○	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE			●	
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	●	●		
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●			
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR			○	
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS				

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
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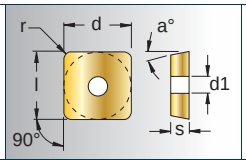
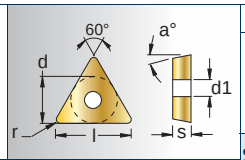
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

SPM.



TCMT
TCMX



ART.	COD.	l	d	s	d1	r	a°
.N54	SPMT 060304 .N54	6,35	6,35	3,18	2,8	0,4	11
	SPMT 09T308 .N54	9,52	9,52	3,97	4,5	0,8	11
	SPMT 120408 .N54	12,7	12,7	4,76	5,5	0,8	11
	NEW						
.N51	SPMW 060304 .N51	6,35	6,35	3,18	2,8	0,4	11
	SPMW 09T308 .N51	9,52	9,52	3,97	4,5	0,8	11
	SPMW 120408 .N51	12,7	12,7	4,76	5,5	0,8	11
	NEW						
.N59	SPMW 060304 .N59	6,35	6,35	3,18	2,8	0,4	11
	SPMW 09T308 .N59	9,52	9,52	3,97	4,5	0,8	11
	SPMW 120408 .N59	12,7	12,7	4,76	5,5	0,8	11
	NEW						
.G39	TCMT 110204 .G39	11,0	6,35	2,38	2,8	0,4	11
.S42	TCMT 110202 .S42	11,0	6,35	2,38	2,8	0,2	7
	TCMT 110204 .S42	11,0	6,35	2,38	2,8	0,4	7
	TCMT 16T304 .S42	16,5	9,52	3,97	4,4	0,4	7
	TCMT 16T308 .S42	16,5	9,52	3,97	4,4	0,8	7
	TCMT 220404 .S42	22,0	12,7	4,76	5,6	0,4	7
.G52	TCMT 110204 .G52	11,0	6,35	2,38	2,8	0,4	7
	TCMT 110208 .G52	11,0	6,35	2,38	2,8	0,8	7
	TCMT 16T304 .G52	16,5	9,52	3,97	4,4	0,4	7
	TCMT 16T308 .G52	16,5	9,52	3,97	4,4	0,8	7
	TCMT 16T312 .G52	16,5	9,52	3,97	4,4	1,5	7
.Z52	TCMT 220408 EN .Z52	22,0	12,7	4,76	5,6	0,8	7
.S52	TCMX 16T308ZN .S52	16,5	9,52	3,97	4,4	0,8	7

HT — CERMET
HW — NON RIVESTITI CEMENTED CARBIDE GRADES
HC — RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

C4010	T120	F2425	F2435	T1415	T3115 NEW	T3220	T1425	T528N	F4140	T1435 NEW	T540
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MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX

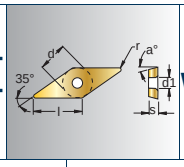
		C4010	T120	F2425	F2435	T1415	T3115 NEW	T3220	T1425	T528N	F4140	T1435 NEW	T540
P	ACCIAIO - STEEL - STAHL - ACIER	○		○	○	●		○	●	●	●	●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE	●	○	●	●				○	●	●	○	●
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	○	●			○	●	●	○				
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM		○										○
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR		○							○	●		○
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS												

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SAU QUALITY TOOLS ENGINEERING

VDKT VCKT



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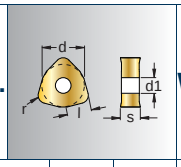

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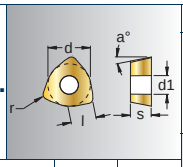

ART	COD.	l	d	s	d1	r	a°	HT CERMET	HW NON RIVESTITI CEMENTED CARBIDE GRADES T110	HC RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS F4130	F4140	T5120
 .K57P	VDKT 11T210 N .K57P	11	6,35	2,87	2,8	1	7		■			
 .K57P	VCKT 220530 .K57P	20,1	12,7	5,56	5,6	3,0	15		■			
 .X52	WNMT 140525 .X52	7	13,7	5,5	4,9	2,5	–			■		■
 .N42	WPMT 06X415 ZSR .N42	6	9,52	4,20	4,3	1,5	11				■	
	WPMT 080615 ZSR .N42	8	12,7	6,35	5,4	1,5	11				■	
	NEW											
 .N52	WPMW 06X415 ZSR.N52	6	9,52	4,20	4,3	1,5	11				■	■
	WPMW 080615 ZSR .N52	8	12,7	6,35	5,4	1,5	11				■	■
	NEW											

MATERIALE - MATERIAL - MATERIALIEN - MATÉRIAUX

		T110	F4130	F4140	T5120
P	ACCIAIO - STEEL - STAHL - ACIER		●	●	●
M	ACCIAIO INOX - STAINLESS STEEL - ROSTFREIER STAHL - ACIER INOXYDABLE		●	●	
K	GHISA - CAST IRON - GRAUGUSS - FONTE GRISE	○	○	○	●
N	LEGHE DI ALLUMINIO - ALUMINIUM ALLOYS - ALUMINIUM-LEGIERUNGEN - ALLIAGES D'ALUMINIUM	●			
S	LEGHE RESISTENTI AL CALORE - HEAT RESISTANT ALLOYS - WÄRMEBESTÄNDIGE LEGIERUNGEN - ALLIAGES RÉSISTANTES À LA CHALEUR			○	
H	MATERIALI DURI E TEMPRATI - HARD AND HARDENED MATERIAL - HARTE UND GEHÄRTETE MATERIALIEN - MATERIAUX DURS ET TREMPÉS		○		○

■ DISPONIBILI - IN STOCK - LIEFERBAR - DISPONIBLES / ■ NEW
● APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION-EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

□ A RICHIESTA - ON REQUEST - AUF ANFRAGE - SUR DEMANDE / □ NEW
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE