

[illegible]

- APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPEFOHLENER 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

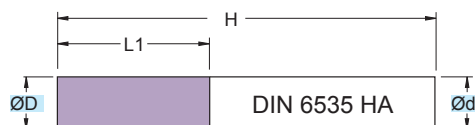
$$n = \frac{V_c \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SM6532

ØD = 6 - 20



RIVESTIM.
COATED
GRAY



90°

**64
HRC**

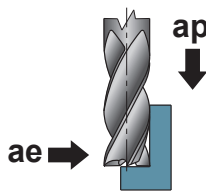


**Fresa in M.D.I. Micrograno
 Gambo cilindrico HA**

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	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

Applicazione - Application		MATERIALI - MATERIALS															Pag. 1119				
		P				M	K			N			S		H	G					
		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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	●																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

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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

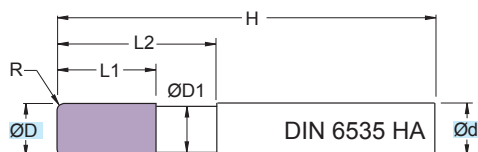
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

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

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

$\varnothing D = 6 - 16$

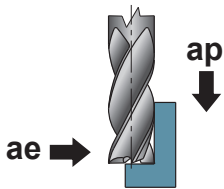


Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	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

RIVESTIM. COATED	
ORANGE	
	52 HRC
	

Applicazione - Application		MATERIALI - MATERIALS															Pag. 1119					
		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	

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EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

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Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

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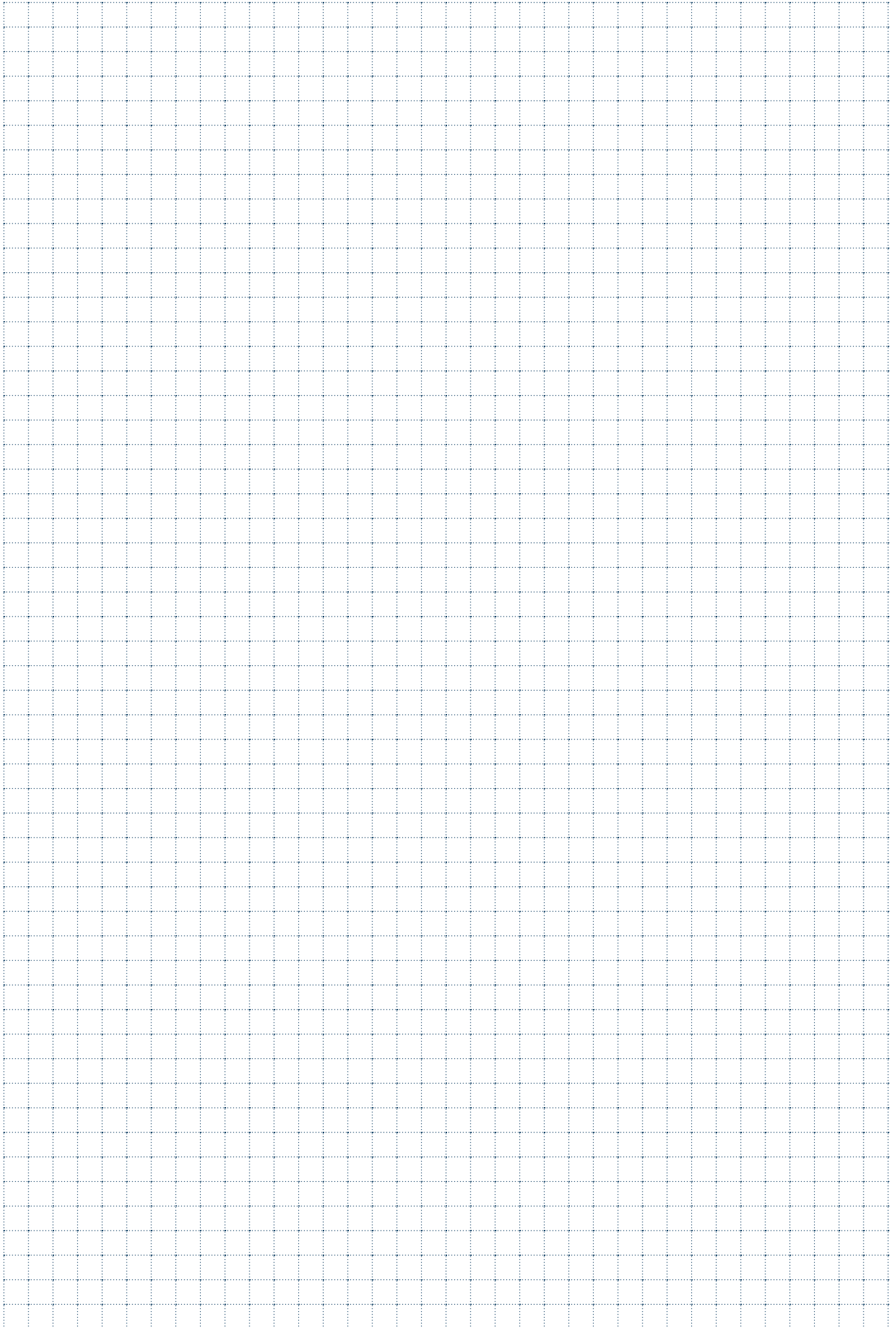
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

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

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



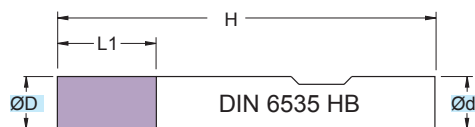


ELICA CON ANGOLO VARIABILE

HELIX WITH VARIABLE ANGLE / SPIRALE MIT VARIABLEM WINKEL /
HÉLICE À ANGLE VARIABLE / HÉLICE CON ÂNGULO VARIABLE

SMW3400

ØD = 3 - 20



RIVESTIM.
COATED
GRAY



45°

**52
HRC**



HSC

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

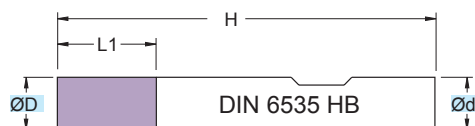
Micrograin HM mills
 Cylindrical Shank HB

TOLLERANZE	D	d
TOLERANCE RANGE	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

SMW3400..TI

ØD = 3 - 20



RIVESTIM.
COATED
ORANGE



45°

**52
HRC**



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

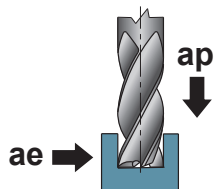
Micrograin HM mills
 Cylindrical Shank HB

TOLLERANZE	D	d
TOLERANCE 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. 1119

Applicazione - Application



MATERIALI - MATERIALS											Pag. 1119								
P				M	K			N		S	H	G							
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
		○													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
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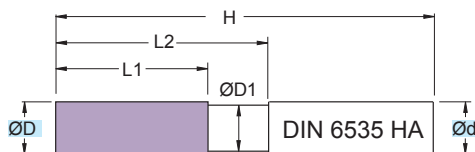
$$n = \frac{Vc \cdot 1000}{\phi D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM3415

ØD = 3 - 20



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
 COATED
GRAY



45°

**52
 HRC**

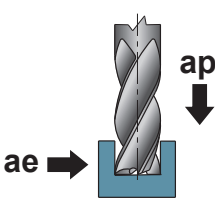
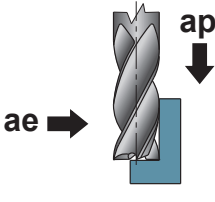


HSC



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. 1119

MATERIALI - MATERIALS																		Pag. 1119				
Applicazione - Application	P				M	K			N			S	H	G								
	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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae		
			●													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

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

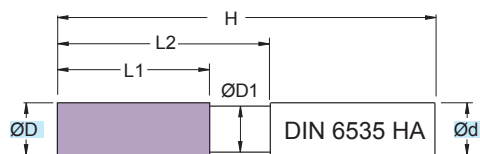
$$n = \frac{Vc \cdot 1000}{\phi D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM3415..TI

ØD = 3 - 20



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

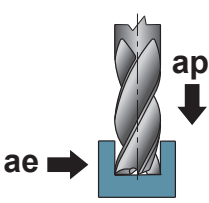
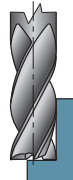
Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM. COATED ORANGE	
45°	52 HRC

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. 1119

MATERIALI - MATERIALS																					Pag. 1119				
Applicazione - Application	P				M	K			N			S	H	G											
	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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae					
			○													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

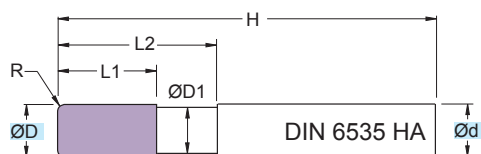
$$n = \frac{Vc \cdot 1000}{\phi D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM3515

ØD = 4 - 10



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
 COATED
GRAY



R

**52
 HRC**

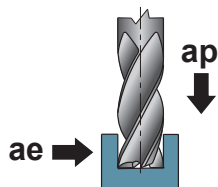


ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3515.040.R025	4	4	3,8	11	18	57	0,25	3
SM3515.040.R050	4	4	3,8	11	18	57	0,50	3
SM3515.040.R075	4	4	3,8	11	18	57	0,75	3
SM3515.040.R100	4	4	3,8	11	18	57	1,00	3
SM3515.040.R125	4	4	3,8	11	18	57	1,25	3
SM3515.040.R150	4	4	3,8	11	18	57	1,50	3
SM3515.050.R025	5	5	4,8	13	20	57	0,25	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

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

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Applicazione - Application



MATERIALI - MATERIALS															Pag. 1119						
P				M	K			N			S	H	G								
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	RAMME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE							
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae		
●															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

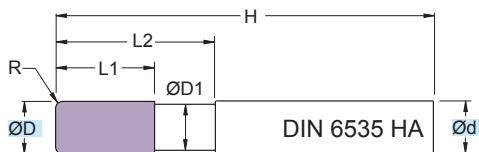
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM3515..TI

ØD = 4 - 10



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

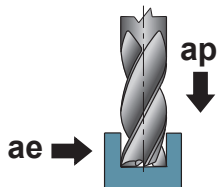
RIVESTIM.
COATED
ORANGE

52 HRC

(mm)									(mm)								
ART.	ØD	Ød	ØD1	L1	L2	H	R	z	ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3515.040.R025.TI	4	4	3,8	11	18	57	0,25	3	SM3515.100.R200.TI	10	10	9,5	22	33	72	2,00	3
SM3515.040.R050.TI	4	4	3,8	11	18	57	0,50	3	SM3515.100.R250.TI	10	10	9,5	22	33	72	2,50	3
SM3515.040.R075.TI	4	4	3,8	11	18	57	0,75	3	SM3515.100.R300.TI	10	10	9,5	22	33	72	3,00	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									

MATERIALI - MATERIALS Pag. 1119

Applicazione - Application



MATERIALI - MATERIALS															Pag. 1119						
P				M	K			N			S	H	G								
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	RAMME E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae		
○															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

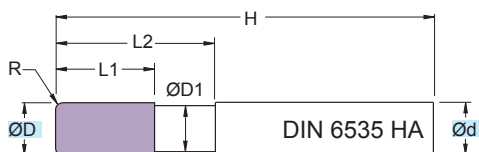
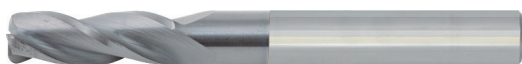
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM3525

ØD = 4 - 10



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
GRAY



R

**52
HRC**

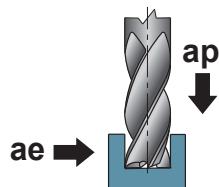


(mm)								
ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM3525.040.R025	4	4	3,8	19	26	72	0,25	3
SM3525.040.R050	4	4	3,8	19	26	72	0,50	3
SM3525.040.R075	4	4	3,8	19	26	72	0,75	3
SM3525.040.R100	4	4	3,8	19	26	72	1,00	3
SM3525.040.R125	4	4	3,8	19	26	72	1,25	3
SM3525.040.R150	4	4	3,8	19	26	72	1,50	3
SM3525.050.R025	5	5	4,8	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

MATERIALI - MATERIALS Pag. 1119

Applicazione - Application



MATERIALI - MATERIALS													Pag. 1119							
P				M	K			N			S	H	G							
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

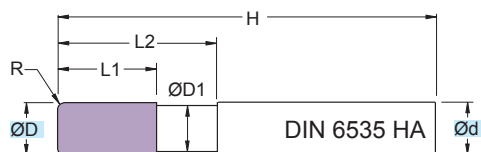
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM3525..TI

ØD = 4 - 10



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
ORANGE

R

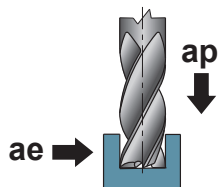
52 HRC

(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

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MATERIALI - MATERIALS												Pag. 1119								
P				M	K		N			S	H	G								
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
○																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

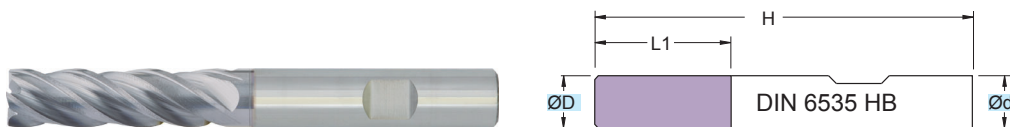
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

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

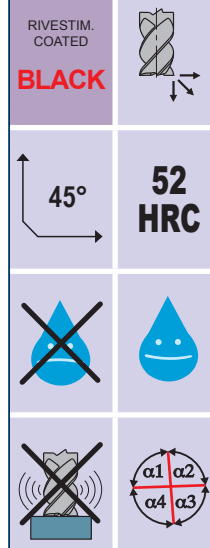
$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

$\varnothing D = 5 - 20$



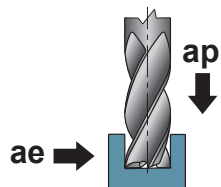
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(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



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MATERIALI - MATERIALS																Pag. 1119				
P				M	K			N			S	H	G							
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
●																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

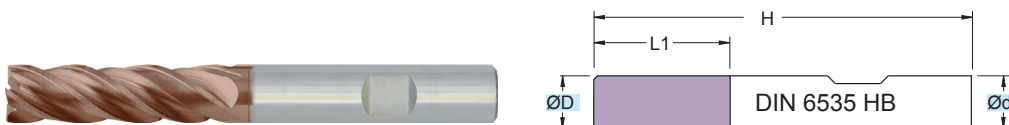
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

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

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

$\varnothing D = 5 - 20$



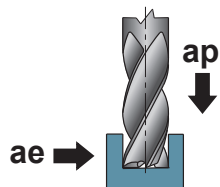
TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(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

RIVESTIM. COATED ORANGE	
	52 HRC
	
	

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MATERIALI - MATERIALS												Pag. 1119								
P				M	K			N			S	H	G							
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	RAM E SUE LEGHE COPPER	NON METALLICI PLASTICS	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM	ACCIAIO TEMPRATO HARDENED STEEL	GRAFITE GRAPHITE	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
○																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

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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

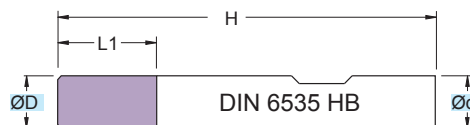
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SMW4401

ØD = 3 - 25

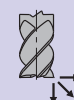


Fresa in M.D.I. Micrograno
 Gambo sec. DIN 6535 HB

Micrograin HM mills
 DIN 6535 HB Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
BLACK

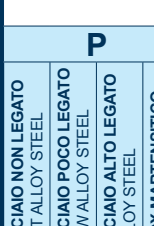


45°

**52
HRC**



(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

Applicazione - Application		MATERIALI - MATERIALS																			
		P			M	K			N			S		H	G						
		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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
	●																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	100-130	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	0,015-0,030	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

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

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

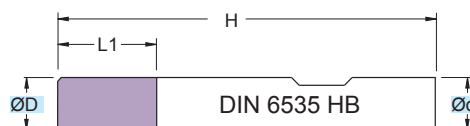
fz = mm AVANZAMENTO AL DENTE -TOOTH FEED

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

SMW4401..TI

ØD = 3 - 25



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

Micrograin HM mills
 DIN 6535 HB Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM. COATED ORANGE	
45°	52 HRC

ART.	(mm)					
	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

[illegible]

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

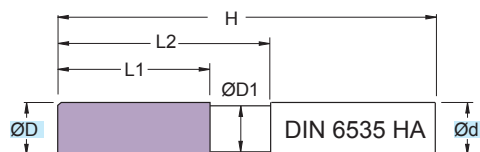
$$n = \frac{V_c \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SM4415

ØD = 3 - 25



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

Micrograin HM mills
 DIN 6535 HA Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
BLACK



45°

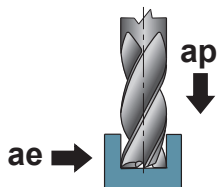
**52
HRC**



(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. 1119

Applicazione - Application



MATERIALI - MATERIALS															Pag. 1119						
P				M	K			N			S	H	G								
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae		
●															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	100-130	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	0,015-0,030	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

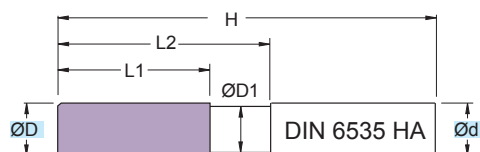
$$n = \frac{Vc \cdot 1000}{\phi D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM4415..TI

ØD = 3 - 25



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

Micrograin HM mills
 DIN 6535 HA Shank

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

RIVESTIM.
COATED
ORANGE

45°

52 HRC

(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. 1119

Applicazione - Application

		MATERIALI - MATERIALS Pag. 1119																			
		P		M	K		N		S	H	G										
		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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
○																	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

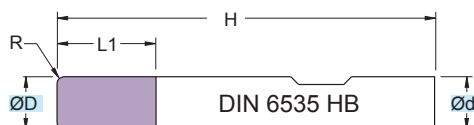
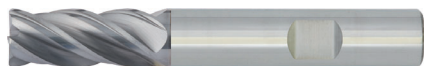
$$n = \frac{V_c \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SMW4305

ØD = 4 - 20

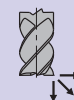


Fresa in M.D.I. Micrograno
 Gambo sec. DIN 6535 HB

Micrograin HM mills
 DIN 6535 HB Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
GRAY



R

52 HRC



ART.	(mm)						
	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	

ART.	(mm)						
	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	

Applicazione - Application		MATERIALI - MATERIALS																				
		P				M	K			N			S		H						G	
		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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
	●																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**

Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED

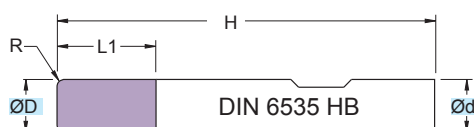
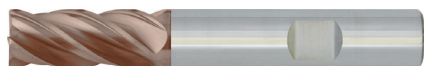
n = giri/min (min^{-1}) NUMERO DI GIRI - NUMBER OF REVOLUTIONS

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

SMW4305..TI

ØD = 4 - 20



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

Micrograin HM mills
 DIN 6535 HB Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
ORANGE

R

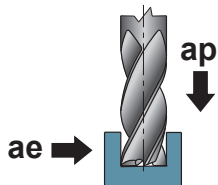
52 HRC

(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

MATERIALI - MATERIALS Pag. 1119

Applicazione - Application



MATERIALI - MATERIALS												Pag. 1119								
P				M	K			N			S	H	G							
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
○																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

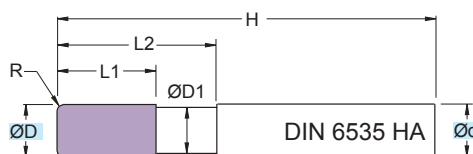
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM4315

ØD = 4 - 20



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

Micrograin HM mills
 DIN 6535 HA Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
GRAY



R

**52
HRC**

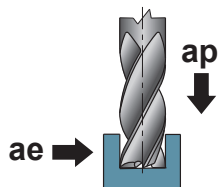


ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4315.040.R025	4	6	3,8	11	18	57	0,25	4
SM4315.041.R050	4	6	3,8	11	18	57	0,50	4
SM4315.042.R100	4	6	3,8	11	18	57	1,00	4
SM4315.050.R050	5	6	4,8	13	20	57	0,50	4
SM4315.051.R100	5	6	4,8	13	20	57	1,00	4
SM4315.052.R150	5	6	4,8	13	20	57	1,50	4
SM4315.060.R050	6	6	5,8	13	20	57	0,50	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

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. 1119

Applicazione - Application



MATERIALI - MATERIALS															Pag. 1119						
P				M	K			N			S	H	G								
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae		
●															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

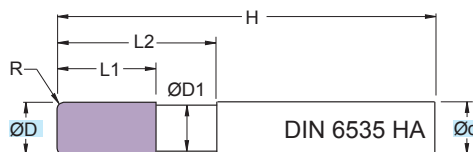
$$n = \frac{Vc \cdot 1000}{\phi D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM4315..TI

ØD = 4 - 20



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

Micrograin HM mills
 DIN 6535 HA Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
ORANGE

R

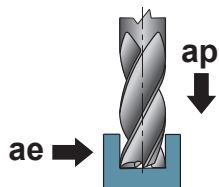
52 HRC

(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

MATERIALI - MATERIALS Pag. 1119

Applicazione - Application



MATERIALI - MATERIALS												Pag. 1119								
P				M	K			N			S	H	G							
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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
○																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

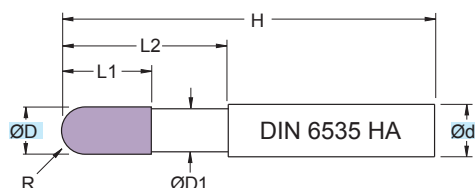
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SM4313

ØD = 2,5 - 16



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

RIVESTIM.
 COATED
GRAY



R

**60
 HRC**



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

[illegible]

- APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE

- APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

øDe = mm DIAMETRO EFFETTIVO - EFFECTIVE DIAMETER

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

fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED



 **DATI TECNICI LAVORAZIONI PAG. 1072 - 1073**
 **MACHINING TECHNICAL DATA PAGE 1072 - 1073**
 **BEARBEITUNGSSCHNITTDATEN S. 1072 - 1073**
 **DONNEES TECHNIQUES USINAGES PAGES 1072 - 1073**

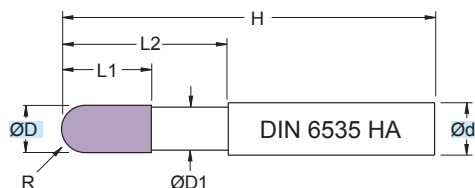
$$n = \frac{V_c \cdot 1000}{\varnothing_{De} \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SM4313..TI

ØD = 2,5 - 16



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
COATED
ORANGE



R

**52
HRC**



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

Applicazione - Application

MATERIALI - MATERIALS																	Pag. 1119					
P			M	K			N			S	H	G										
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	(mm) ØDe	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae			
○															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. 1072 - 1073
 MACHINING TECHNICAL DATA PAGE 1072 - 1073
 BEARBEITUNGSSCHNITTDATEN S. 1072 - 1073
 **DONNEES TECHNIQUES USINAGES PAGES 1072 - 1073**

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

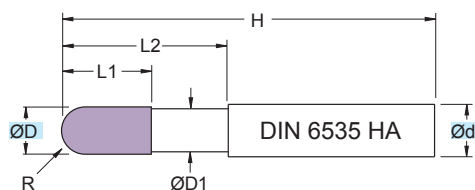
$$n = \frac{V_c \cdot 1000}{\varnothing D_e \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SM4413..LX

ØD = 3 - 16



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

Micrograin HM mills
 Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE RANGE	h10	h6

RIVESTIM.
 COATED
GRAY



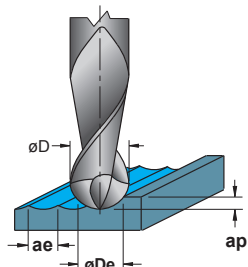
R

**60
 HRC**



ART.	(mm)							
	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

Applicazione - Application

[illegible]

- APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

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


DATI TECNICI LAVORAZIONI PAG. 1072 - 1073
MACHINING TECHNICAL DATA PAGE 1072 - 1073
BEARBEITUNGSSCHNITTDATEN S. 1072 - 1073
 **DONNEES TECHNIQUES USINAGES PAGES 1072 - 1073**

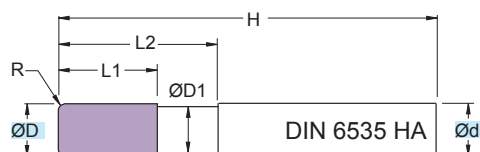
$$n = \frac{V_c \cdot 1000}{\emptyset D_e \cdot 3.14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

$\varnothing D = 6 - 16$

NEW

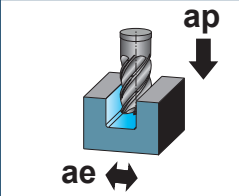


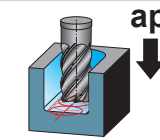
Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)								
ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM5215.060.SR050.TI	6	6	5,7	13	20	58	0,50	5
SM5215.060.SR100.TI	6	6	5,7	13	20	58	1,00	5
SM5215.080.SR050.TI	8	8	7,7	19	28	64	0,50	5
SM5215.080.SR100.TI	8	8	7,7	19	28	64	1,00	5
SM5215.080.SR200.TI	8	8	7,7	19	28	64	2,00	5
SM5215.100.SR050.TI	10	10	9,7	22	33	73	0,50	5
SM5215.100.SR100.TI	10	10	9,7	22	33	73	1,00	5
SM5215.100.SR200.TI	10	10	9,7	22	33	73	2,00	5
SM5215.120.SR050.TI	12	12	11,6	26	38	84	0,50	5
SM5215.120.SR100.TI	12	12	11,6	26	38	84	1,00	5
SM5215.120.SR150.TI	12	12	11,6	26	38	84	1,50	5
SM5215.120.SR200.TI	12	12	11,6	26	38	84	2,00	5
SM5215.120.SR300.TI	12	12	11,6	26	38	84	3,00	5
SM5215.160.SR100.TI	16	16	15,6	32	45	93	1,00	5
SM5215.160.SR150.TI	16	16	15,6	32	45	93	1,50	5
SM5215.160.SR200.TI	16	16	15,6	32	45	93	2,00	5
SM5215.160.SR300.TI	16	16	15,6	32	45	93	3,00	5
SM5215.160.SR400.TI	16	16	15,6	32	45	93	4,00	5

RIVESTIM. COATED ORANGE	
	52 HRC
	
	
	

					MATERIALI - MATERIALS					
					P	M	S	H		
					ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX AUST. DUPLEX STAINLESS STEEL AUST.	LEGHE RESIST. CALORE HIGH TEMP. ALLOY	TITANIO E SUE LEGHE TITANIUM
(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae						
6÷8	120-140	0,015-0,030	1xD	1xD	●					
8÷10	120-140	0,020-0,040	1xD	1xD	●					
10÷12	120-140	0,030-0,050	1xD	1xD	●					
12÷16	120-140	0,040-0,060	1xD	1xD	●					
6÷8	110-130	0,015-0,030	1xD	1xD		●				
8÷10	110-130	0,020-0,040	1xD	1xD		●				
10÷12	110-130	0,030-0,050	1xD	1xD		●				
12÷16	110-130	0,040-0,060	1xD	1xD		●				
6÷8	115-125	0,010-0,025	1xD	1xD			●			
8÷10	115-125	0,020-0,035	1xD	1xD			●			
10÷12	115-125	0,030-0,045	1xD	1xD			●			
12÷16	115-125	0,040-0,055	1xD	1xD			●			
6÷8	80-120	0,015-0,040	1xD	1xD				●		
8÷10	80-120	0,035-0,050	1xD	1xD				●		
10÷12	80-120	0,045-0,060	1xD	1xD				●		
12÷16	80-120	0,055-0,070	1xD	1xD				●		
6÷8	25-55	0,010-0,020	1xD	1xD					●	
8÷10	25-55	0,015-0,030	1xD	1xD					●	
10÷12	25-55	0,025-0,035	1xD	1xD					●	
12÷16	25-55	0,030-0,045	1xD	1xD					●	
6÷8	40-70	0,015-0,035	1xD	1xD						●
8÷10	40-70	0,030-0,045	1xD	1xD						●
10÷12	40-70	0,035-0,050	1xD	1xD						●
12÷16	40-70	0,040-0,060	1xD	1xD						●
6÷8	15-35	0,005-0,010	0,20xD	1xD						○
8÷10	15-35	0,007-0,012	0,20xD	1xD						○
10÷12	15-35	0,009-0,015	0,20xD	1xD						○
12÷16	15-35	0,010-0,020	0,20xD	1xD						○

									
Trochoidale Trochoidal									
ap = 2xD (mm)									
ae = 0,1xD (mm)									
ae = 0,15xD (mm)									
ae = 0,2xD (mm)									
(mm) ØD	(m/min) Vc	(mm) fz	(mm) hm	(m/min) Vc	(mm) fz	(mm) hm	(m/min) Vc	(mm) fz	(mm) hm
6÷8	160-260	0,100-0,150	0,03-0,05	160-260	0,080-0,120	0,03-0,04	160-260	0,060-0,090	0,03-0,04
8÷10	160-260	0,130-0,180	0,04-0,06	160-260	0,110-0,150	0,04-0,06	160-260	0,070-0,110	0,03-0,05
10÷12	160-260	0,160-0,210	0,05-0,07	160-260	0,140-0,180	0,05-0,07	160-260	0,080-0,130	0,04-0,06
12÷16	160-260	0,190-0,240	0,06-0,08	160-260	0,170-0,210	0,06-0,08	160-260	0,090-0,150	0,04-0,07
6÷8	150-240	0,100-0,150	0,03-0,05	150-240	0,080-0,120	0,03-0,04	150-240	0,060-0,090	0,03-0,04
8÷10	150-240	0,130-0,180	0,04-0,06	150-240	0,110-0,150	0,04-0,06	150-240	0,070-0,110	0,03-0,05
10÷12	150-240	0,160-0,210	0,05-0,07	150-240	0,140-0,180	0,05-0,07	150-240	0,080-0,130	0,04-0,06
12÷16	150-240	0,190-0,240	0,06-0,08	150-240	0,170-0,210	0,06-0,08	150-240	0,090-0,150	0,04-0,07
6÷8	150-220	0,100-0,150	0,03-0,05	150-220	0,080-0,120	0,03-0,04	150-220	0,060-0,090	0,03-0,04
8÷10	150-220	0,130-0,180	0,04-0,06	150-220	0,110-0,150	0,04-0,06	150-220	0,070-0,110	0,03-0,05
10÷12	150-220	0,160-0,210	0,05-0,07	150-220	0,140-0,180	0,05-0,07	150-220	0,080-0,130	0,04-0,06
12÷16	150-220	0,190-0,240	0,06-0,08	150-220	0,170-0,210	0,06-0,08	150-220	0,090-0,150	0,04-0,07
6÷8	130-200	0,080-0,130	0,03-0,04	130-200	0,070-0,110	0,03-0,04	130-200	0,050-0,080	0,02-0,04
8÷10	130-200	0,110-0,160	0,03-0,05	130-200	0,100-0,140	0,04-0,05	130-200	0,060-0,100	0,03-0,05
10÷12	130-200	0,140-0,190	0,04-0,06	130-200	0,130-0,170	0,05-0,06	130-200	0,070-0,120	0,03-0,06
12÷16	130-200	0,170-0,210	0,05-0,07	130-200	0,160-0,200	0,06-0,08	130-200	0,080-0,140	0,04-0,07
6÷8	80-130	0,060-0,110	0,02-0,03	70-120	0,050-0,100	0,02-0,03	60-110	0,040-0,090	0,02-0,03
8÷10	80-130	0,090-0,140	0,02-0,03	70-120	0,080-0,130	0,03-0,04	60-110	0,070-0,120	0,03-0,04
10÷12	80-130	0,120-0,200	0,03-0,04	70-120	0,140-0,190	0,04-0,06	60-110	0,130-0,180	0,05-0,07
12÷16	80-130	0,180-0,240	0,04-0,05	70-120	0,170-0,230	0,05-0,07	60-110	0,160-0,220	0,06-0,08
6÷8	90-160	0,070-0,120	0,02-0,03	90-160	0,060-0,110	0,02-0,03	80-160	0,050-0,100	0,02-0,04
8÷10	90-160	0,100-0,150	0,02-0,03	90-160	0,090-0,140	0,03-0,04	80-160	0,080-0,130	0,03-0,05
10÷12	90-160	0,160-0,210	0,03-0,04	90-160	0,150-0,200	0,05-0,06	80-160	0,140-0,190	0,05-0,07
12÷16	90-160	0,190-0,250	0,04-0,05	90-160	0,180-0,240	0,06-0,07	80-160	0,170-0,230	0,06-0,08

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

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

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

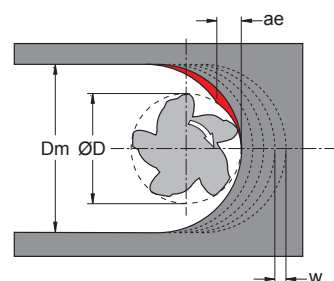
$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

hm = mm SPESSORE MEDIO DEL TRUCIOLO - CHIP'S AVERAGE THICKNESS
Dm = mm LARGHEZZA CAVA - SLOT WIDTH
ØD = mm DIAMETRO FRESA - MILLING CUTTER DIAMETER
w = mm INCREMENTO DI PASSATA RADIALE - RADIAL STEP OVER
ae = mm TAGLIO RADIALE, VALORE MASSIMO - RADIAL CUT MAX.

$$\varnothing D = \text{Max } 60\% Dm = \text{mm}$$

$$w = \text{Max } 10\% \varnothing D = \text{mm}$$

$$ae = \frac{Dm^2 - (Dm - 2 \cdot w)^2}{4 \cdot (\varnothing D - \varnothing D)} = \text{mm}$$

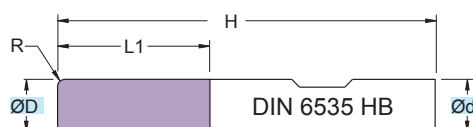


$$\varnothing D = 8 - 16$$

NEW



4xD

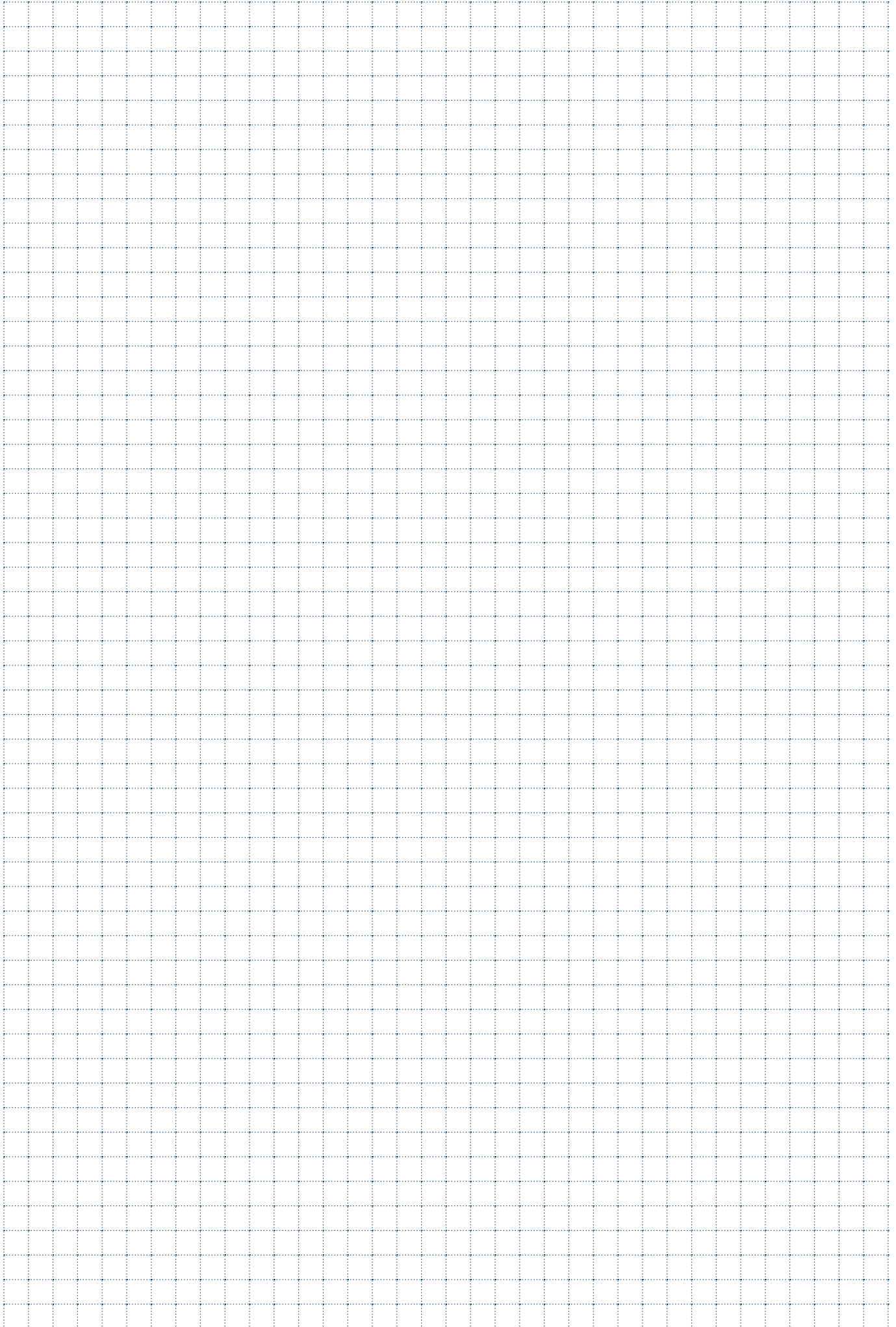


Micrograin HM mills
DIN 6535 HA Shank

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

(mm)						
ART.	ØD	Ød	L1	H	R	z
SMW5405.080.SR030.TI	8	8	33	71	0,30	5
SMW5405.080.SR050.TI	8	8	33	71	0,50	5
SMW5405.100.SR030.TI	10	10	41	83	0,30	5
SMW5405.100.SR050.TI	10	10	41	83	0,50	5
SMW5405.100.SR100.TI	10	10	41	83	1,00	5
SMW5405.120.SR030.TI	12	12	49	96	0,30	5
SMW5405.120.SR050.TI	12	12	49	96	0,50	5
SMW5405.120.SR100.TI	12	12	49	96	1,00	5
SMW5405.140.SR030.TI	14	14	57	103	0,30	5
SMW5405.140.SR050.TI	14	14	57	103	0,50	5
SMW5405.140.SR100.TI	14	14	57	103	1,00	5
SMW5405.160.SR030.TI	16	16	65	120	0,30	5
SMW5405.160.SR050.TI	16	16	65	120	0,50	5
SMW5405.160.SR100.TI	16	16	65	120	1,00	5

RIVESTIM. COATED ORANGE	
R	52 HRC



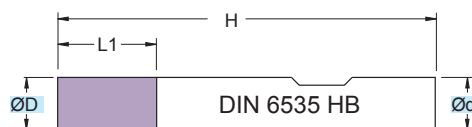


SEDI CHIAVETTE

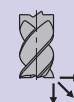
KEYSLOTS / PASSFEDERNUTEN / LOGEMENT CLES /
RANURAS PARA CHAVETAS

SMW3301

ØD = 1,80-15,70



RIVESTIM.
COATED
BLACK



90°

**42
HRC**



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

Micrograin HM mills
 Cylindrical Shank HB

TOLLERANZE	D	d
TOLLERANCE RANGE	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

Applicazione - Application		MATERIALI - MATERIALS Pag. 1119																				
		P				M	K			N			S	H	G							
		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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae	
		●															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

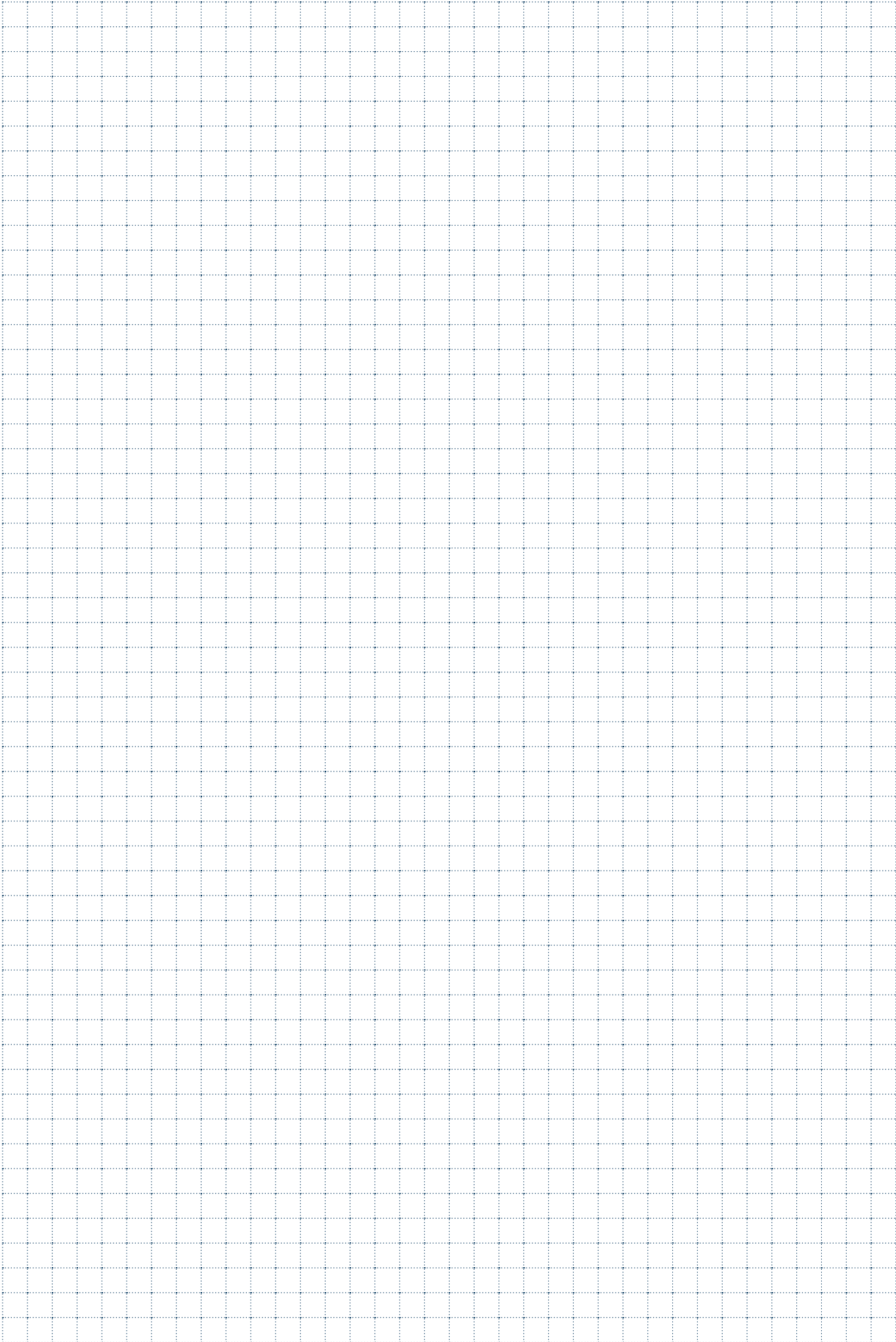
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$



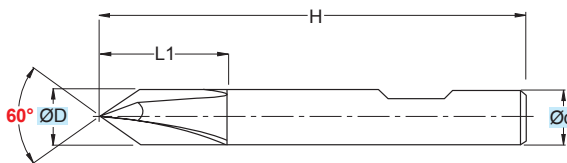


SVASATORI SMUSSATORI

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

SCR0183

$\varnothing D = 4 - 20$



RIVESTIM.
COATED

BLACK

60°

**42
HRC**



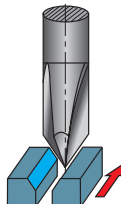
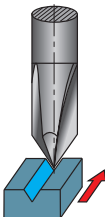
Fresa in M.D.I. Micrograno
 Gambo sec. DIN 6535 HB

Micrograin HM mills
 DIN 6535 HB Shank

TOLLERANZE
 TOLERANCE RANGE

D	d
	h6

(mm)					
ART.	$\varnothing D$	$\varnothing d$	H	L1	Z
SCR0183040	4	4	54	4	4
SCR0183060	6	6	57	6	5
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. 1119																			
		P				M	K			N			S		H	G					
Applicazione - Application		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	(mm) ØD	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
				●													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 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

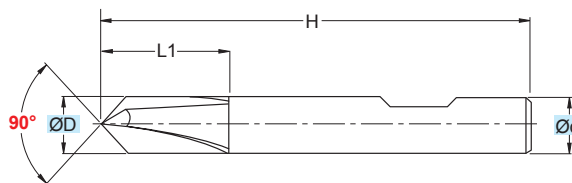
$$n = \frac{V_c \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SCR0187

$\varnothing D = 4 - 20$



RIVESTIM.
COATED

BLACK

90°

**42
HRC**



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

Micrograin HM mills
 DIN 6535 HB Shank

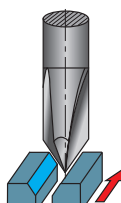
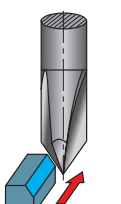
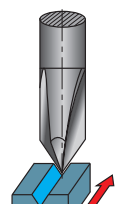
TOLLERANZE

TOLERANCE RANGE

D	d
	h6

(mm)					
ART.	$\varnothing D$	$\varnothing d$	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

MATERIALI - MATERIALS Pag. 1119

MATERIALI - MATERIALS																				Pag. 1119				
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
EMPFOLHENER 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

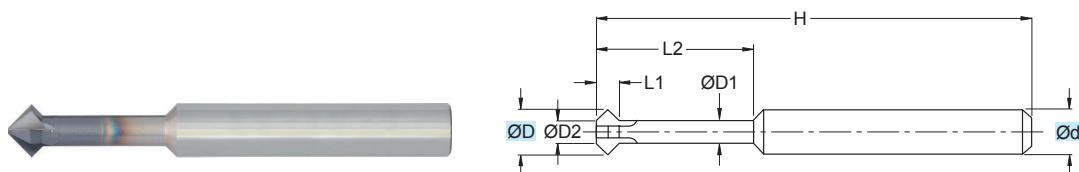
$$n = \frac{Vc \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

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

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

SMR0110

ØD = 4 - 16



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

Micrograin HM mills
 DIN 6535 HB Shank

TOLLERANZE	D	d
TOLERANCE RANGE	h12	h6

RIVESTIM.
COATED

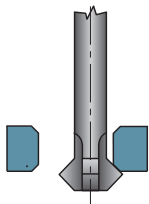
BLACK

45°

**42
HRC**



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

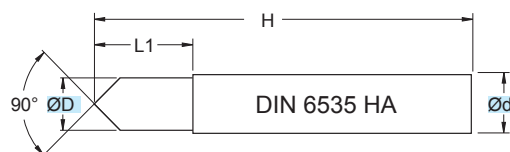
[illegible]

- APPLICAZIONE CONSIGLIATA-RECOMMENDED APPLICATION
EMPFOHLENER EINSATZ - APPLICATION CONSEILLÉE
- APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

$$\varnothing D = 3 - 20$$


Micrograin HM minimills
Cylindrical Shank HA

TOLLERANZE	D	d
TOLERANCE 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



ALU
≤ 5% Si



[illegible]

- 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

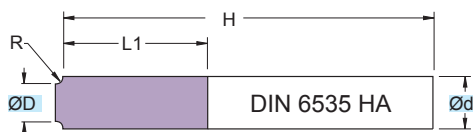
$$n = \frac{V_c \cdot 1000}{\varnothing D \cdot 3,14} = \text{giri/min (min}^{-1}\text{)}$$

$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

SM4701

ØD = 6 - 10



RIVESTIM.
COATED
BLACK



R

**42
HRC**



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

Micrograin HM mills
 Cylindrical 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

Applicazione - Application

MATERIALI - MATERIALS Pag. 1119

P					M	K			N			S	H	G					
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	(mm) Ød	(m/min) Vc	(mm) fz	(mm) ap	(mm) ae
		●													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	-	-

- 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
f = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED

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

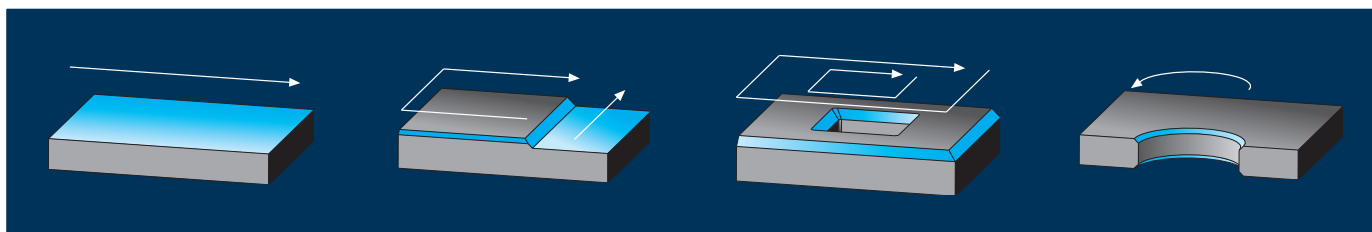
$$f_n = f_z \cdot z = \text{mm}$$

$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$



FRESAS PARA PLANEAR Y BISELES

[illegible]



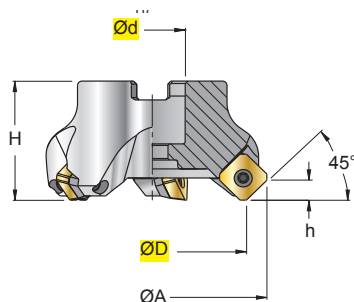
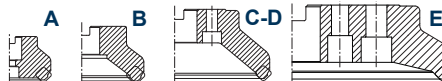
S676 Pag. 408			S678 Pag. 408			S614 Pag. 413			S614.9 Pag. 413		
S 676W..			S 676XLZ ..			S 614.45W-0-12			S 614.9.45W-0-12		
S616 Pag. 409											
S 616.30 ..			S 616.45 .. S 6165XLZ.4 ..			S 616.60 .. S 616XLZ.60 ..					
S618.3 Pag. 410			S618.4 Pag. 411								
S 618 ..11.3 S 618 ..16.3			S 618 ..12.4								
TC..1102 TC..16T3			SC..1204								
S613 Pag. 412			S613.9 Pag. 412								
S 613.45W-0-16			S 613.9.45W-0-16								
TC..16T3			h = 10								

S 438 .. 13
S 438W .. 13
S 438WF .. 13
S 438G .. 13

Ø 50-250

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

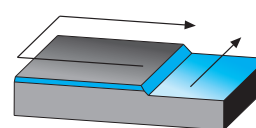
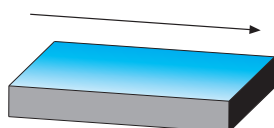
ISO 6462 ...



SEEX 13T3.. .M12	
SEHT 13T3.. .F44P	
SEKT 13T3.. .F53	
SEKT 13T3.. .F58	
SEKW 13T3.. .F51	
SEKX 1305.. .Z52	
INSERTI - INSERTS PAG. 514	

GLI ARTICOLI CON DIAMETRO ≥ 160mm SONO SPROVVISTI DI FORI PER ADDUZIONE REFRIGERANTE INTERNA
ITEMS WITH DIAMETER ≥ 160mm ARE NOT EQUIPPED WITH INTERNAL COOLING BORE
ARTIKEL MIT DURCHMESSER ≥ 160mm SIND NICHT MIT INNENKÜHLBOHRUNG AUSGESTATTET
LES ARTICLES AVEC DIAMETRE ≥ 160 mm SONT DEPOURVUS DE TROUS POUR L'ARROSAGE DU LIQUIDE REFRIGERANT INTERNE

(mm)																				
ART.		ØD	Ød	ØA	H	h	Z				ISO 6462									
S 438W 050 - 13	New	50	22	63	40	6	4	✓	0,37	3,0÷3,5	A	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL10x30	
S 438W 063 - 13	New	63	22	76	40	6	5	✓	0,56	3,0÷3,5	A									
S 438W 080 - 13	New	80	27	93	50	6	6	✓	1,06	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL12x35	
S 438W 100 - 13	New	100	32	113	50	6	7	✓	1,67	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL16x35	
S 438W 125 - 13	New	125	40	138	63	6	8	✓	3,13	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL20x45	
S 438 160 - 13		160	40	173	63	6	10	✓	4,16	3,0÷3,5	C	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	—	
S 438 200 - 13		200	60	213	63	6	12	—	6,81	3,0÷3,5	D									
S 438 250 - 13		250	60	263	63	6	14	—	9,68	3,0÷3,5	D									
S 438WF 050 - 13	New	50	22	63	40	6	5	—	0,36	3,0÷3,5	A	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL10x30	
S 438WF 063 - 13	New	63	22	76	40	6	6	—	0,56	3,0÷3,5	A									
S 438WF 080 - 13	New	80	27	93	50	6	8	—	1,03	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL12x35	
S 438WF 100 - 13	New	100	32	113	50	6	10	—	1,61	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL16x35	
S 438WF 125 - 13	New	125	40	138	63	6	12	—	3,06	3,0÷3,5	A-B	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	AL20x45	
S 438G 160 - 13		160	40	173	63	6	7	✓	4,32	3,0÷3,5	C	13T3	13T3	PA13M	BCL7	123512P	5035	5615P	—	
S 438G 200 - 13		200	60	213	63	6	8	✓	7,01	3,0÷3,5	B									
S 438G 250 - 13		250	60	263	63	6	10	✓	9,88	3,0÷3,5	D									



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

↺ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCE

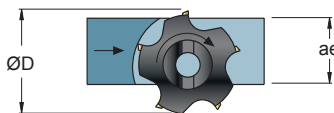
Tenacità +
Toughness -

Pag. 486

HT	HW	HC	
ERMET	NON RIV. CEMENTED	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS	



Technical drawing of a hexagonal nut. It includes a top view showing the hexagonal shape with dimensions r (radius), d (outer diameter), and l (thickness). A side view shows the hexagonal profile with dimensions a (width across flats), d_1 (inner diameter), and s (height of the hexagon). A yellow warning triangle with a red exclamation mark is placed to the left of the drawing.

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


$$V_f = f_z \cdot z \cdot n = \text{mm/min}$$

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. 500	Vc (min)-----Vc (max)			

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

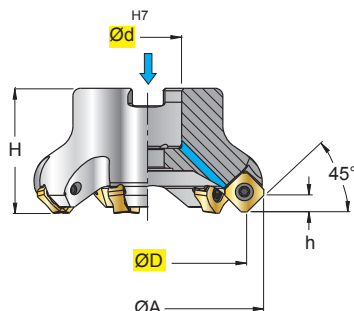
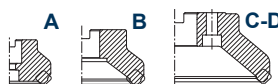
 INSERTO SEKK.. IN GRADO T528N INSERT SEKK.. WITH QUALITY T528N	MATERIALI MATERIALS pag. 119	P				M	K			S	
		ACCIAIO NON LEGATO NOT ALLOY STEEL	ACCIAIO POCO LEGATO LOW ALLOY STEEL	ACCIAIO ALTO LEGATO ALLOY STEEL	INOX MARTENSITICO STAINLESS STEEL	INOX AUST. DUPLEX STAINLESS STEEL AUST	GHISA GRIGIA GREY CAST IRON	GHISA SFEROIDALE SPHERODAL GRAPHITE	GHISA MALLEABILE MALLEABLE CAST IRON	LEGHE RESIST. CALORE HIG. TEMP. ALLOY	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 .. 12N

Ø 50-250

γ_p -6°
 γ_f -9°/-2°
 γ_o -11°/-6°

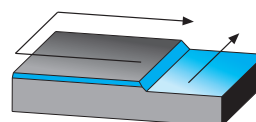
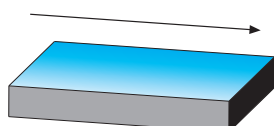
ISO 6462 ...



SNEX 1206NN .K11	
SNCX 1206ANFN .F57P	
SNMX 1206NN .F51	
SNMX 1206NN .F52	
SNMX 1206NN .F53	
SNMX 1206NN .F56	
SNMX 1206NN .F58	
SNMX 120612 .F51	
SNMX 120612 .F58	

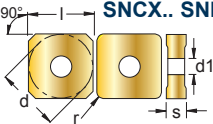
INSERTI - INSERTS
PAG. 515

ART.	ØD	Ød	ØA	H	h	Z		kg	Nm	ISO 6462				
S 4501-8W-050-04-12N	50	22	63,4	40	6	4	—	0,41	3,8÷5	A	1206	124011P	5620P	AL10x30
S 4501-8W-050-06-12N	50	22	63,4	40	6	6	—	0,41	3,8÷5	A				
S 4501-8W-063-05-12N New	63	22	76,4	40	6	5	—	0,61	3,8÷5	A				
S 4501-8W-063-06-12N	63	22	76,4	40	6	6	—	0,55	3,8÷5	A				
S 4501-8W-063-08-12N	63	22	76,4	40	6	8	—	0,55	3,8÷5	A				
S 4501-8W-080-06-12N New	80	27	93,4	50	6	6	—	0,99	3,8÷5	A	1206	124011P	5620P	AL12x35
S 4501-8W-080-07-12N	80	27	93,4	50	6	7	—	0,98	3,8÷5	A				
S 4501-8W-080-10-12N	80	27	93,4	50	6	10	—	0,98	3,8÷5	A				
S 4501-8W-100-08-12N	100	32	113,4	50	6	8	—	1,60	3,8÷5	A	1206	124011P	5620P	AL16x35
S 4501-8W-100-12-12N	100	32	113,4	50	6	12	—	1,60	3,8÷5	A				
S 4501-8W-125-08-12N New	125	40	138,4	63	6	8	—	3,31	3,8÷5	A	1206	124011P	5620P	AL20x45
S 4501-8W-125-10-12N	125	40	138,4	63	6	10	—	3,25	3,8÷5	A				
S 4501-8W-125-16-12N	125	40	138,4	63	6	16	—	3,26	3,8÷5	A				
S 4501-8-160-10-12N New	160	40	173,4	63	6	10	—	4,17	3,8÷5	C				
S 4501-8-160-12-12N	160	40	173,4	63	6	12	—	4,14	3,8÷5	C				
S 4501-8-160-20-12N	160	40	173,4	63	6	20	—	4,16	3,8÷5	C				
S 4501-8-200-18-12N	200	60	213,4	63	6	18	—	6,69	3,8÷5	D				
S 4501-8-200-26-12N	200	60	213,4	63	6	26	—	6,81	3,8÷5	D				
S 4501-8-250-20-12N	250	60	263,4	63	6	20	—	9,40	3,8÷5	D				
S 4501-8-250-30-12N	250	60	263,4	63	6	30	—	9,51	3,8÷5	D				



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

⌀ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCE

SCELTA VELOCE - QUICK PICK																		Tenacità + Toughness -						Pag. 486														
COD.			P			M			K			N			S			H			HT	HW	HC						SNCX.. SNMX..									
			F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R			RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS															
			○	○					●	●	○		○	●								N3815		F3120	F2740	T3116	F3420	T1025	T1730	F3010	F1335	l	d	s	d1	r	a°	
SNEX	1206NN	.K11	○	○					●	●	○																											
SNCX	1206ANFN	.F57P										○	●																									
SNMX	1206NN	.F51							●	●	●																											
SNMX	1206NN	.F52	●	●	●																																	
SNMX	1206NN	.F53					●	●																														
SNMX	1206NN	.F56							○	●	●																											
SNMX	1206NN	.F58		●	●																																	
SNMX	120612	.F51		●	●					●	●																											
SNMX	120612	.F58		●	●				○	○																												
																							</															

É POSSIBILE UTILIZZARE INSERTI **ONMU..**, PAG 511
ONMU.. INSERTS CAN BE USED.. , PAGE 511
DIE VERWENDUNG WENDEPLATTEN **ONMU..** IST MÖGLICH, S. SEITE 511
IL EST POSSIBLE D'UTILISER DES PLAQUETTES **ONMU..**, PAGE 511

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY

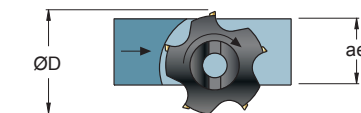
MATERIALI - MATERIALS Pag. 1119			VDI 3323 GR.	HB Rm1) HRC2)	fz0 mm			Vc m/min Pag. 500									
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL		1-5	125-300	0,12	0,25	0,35	200				200		240	230	220	
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL		6-9	180-350	0,1	0,2	0,3	200				180		240	190	180	
	ACCIAIO ALTO LEGATO - 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				700									
	RAME E SUE LEGHE - COPPER		26-28	90-110				280									
	NON METALLICI - PLASTICS		29-30	/				280									
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⁾													

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

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

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

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

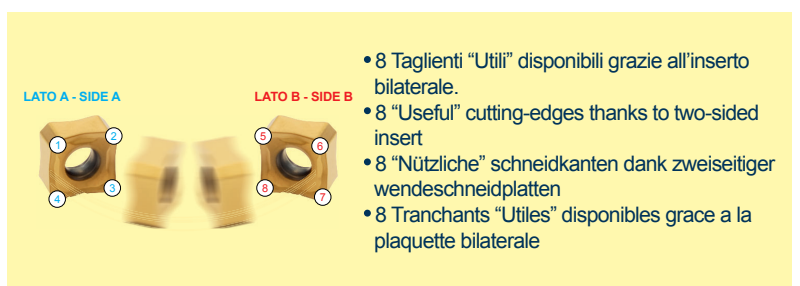


ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 500	Vc (min)-----Vc(max)			

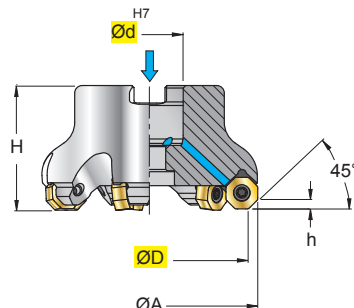
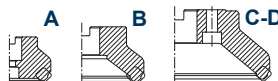
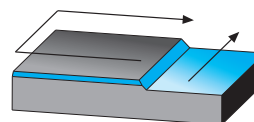
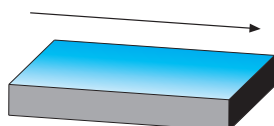
F = FINITURA, LAV. LEGGERA - FINISHING, LIGHT MACHINING
M = LAV. MEDIA, GENERICA - MEDIUM MACHINING, GENERIC
R = SGROSSATURA, LAV. PESANTE - ROUGHING, HEAVY MACHINING

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

ISO 6462 ...

$$\begin{array}{ll} \gamma_p & -6^\circ \\ \gamma_f & -9^\circ/-4^\circ \\ \gamma_o & -11^\circ/-7^\circ \end{array}$$

INSERTI - INSERTS
PAG. 511[illegible]

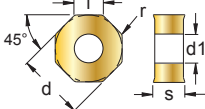
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
 = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

SCELTA VELOCE - QUICK PICK

Tenacità +
Toughness -



Pag. 486

HT	HW	HC																											
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS																											
					F7810 	F3120	F2135 	F2740				F1325	F1335																
																													
																													
																													
																													
																													
													</																



- COME OPZIONE SI POSSONO MONTARE GLI INSERTI **SNMX**. DA TENERE PRESENTE CHE DIAMETRO E ALTEZZA CON QUESTI INSERTI SARANNO DIVERSI: ØD DIMINUIRÀ DI CIRCA **2,9 mm** MENTRE QUOTA H AUMENTERÀ DI CIRCA **1,45 mm**



- **SNMX** INSERTS CAN BE OPTIONALLY USED. PLEASE NOTE THAT WITH THESE INSERTS DIAMETER AND HEIGHT WILL CHANGE: ØD WILL DECREASE BY AROUND **2,9 mm** AND H WILL INCREASE BY AROUND **1,45 mm**

CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY

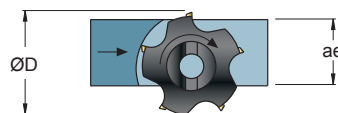
MATERIALI - MATERIALS Pag. 1119		VDI 3323 GR.	HB Rm1) HRC2)	fz0 mm			Vc m/min Pag. 500									
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1-5	125-300	0,16	0,22	0,3	F7810	F3120	F1325	F1335	F2135	F2740				
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6-9	180-350	0,16	0,22	0,3	230	200	190	180						
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,16	0,22	0,3	200	190	150	160						
	INOX MARTENS. - STAINLESS STEEL MART	12-13	200-240	0,16	0,22	0,3	150	150								
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	14.1-14.2	180-230	0,12	0,18	0,25	120		100	90	120	100				
K	GHISA GRIGIA - GREY CAST IRON	15-16	180-260	0,2	0,25	0,35	280	230	250							
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,2	0,25	0,35	250	170	220							
	GHISA MALLEABILE - MALLEABLE CAST IRON	19-20	130-230	0,2	0,25	0,35	250	150	140							
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	0,1	0,13	0,2					50					
	TITANIO E SUE LEGHE - TITANIUM	36-37	400-1050 ¹⁾	0,1	0,13	0,2					45					
H	ACCIAIO TEMPRATO - HARDENED STEEL	38-41	45-60 ²⁾	0,1	0,16	0,26	75									

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

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

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

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



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. 500	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

LATO A - SIDE A

LATO B - SIDE B

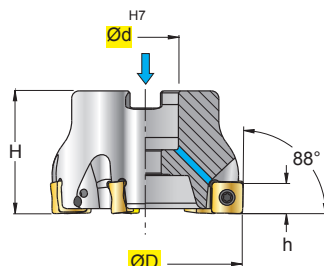
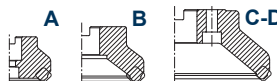
- 16 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 16 "Useful" cutting-edges thanks to two-sided insert
- 16 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 16 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

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

Ø 50-250

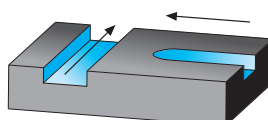
γ_p -6°
 γ_f -8°/-5,5°
 γ_o -8°/-5,5°

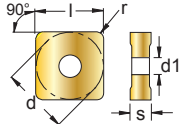
ISO 6462 ...



SNMX 1206QNN .F51	
SNMX 1206QNN .F53	
SNMX 1206QNN .F58	
SNMX 120612 .F51	
SNMX 120612 .F58	
INSERTI - INSERTS PAG. 515	

ART.	(mm)						kg	Nm	ISO 6462				
S 8801-8W-050-04-12	50	22	40	11,5	4	—	0,27	3,8÷5	A	1206	124011P	5620P	VBSF10
S 8801-8W-063-06-12	63	22	40	11,5	6	—	0,46	3,8÷5	A	1206	124011P	5620P	AL12x35
S 8801-8W-080-07-12	80	27	50	11,5	7	—	0,94	3,8÷5	A		124011P	5620P	AL12x35
S 8801-8W-080-09-12	80	27	50	11,5	9	—	0,92	3,8÷5	A		124011P	5620P	AL16x35
S 8801-8W-100-08-12	100	32	50	11,5	8	—	1,63	3,8÷5	A-B		124011P	5620P	AL16x35
S 8801-8W-100-11-12	100	32	50	11,5	11	—	1,59	3,8÷5	A-B	1206	124011P	5620P	AL20x45
S 8801-8W-125-10-12	125	40	63	11,5	10	—	3,05	3,8÷5	A-B		124011P	5620P	AL20x45
S 8801-8W-125-14-12	125	40	63	11,5	14	—	2,99	3,8÷5	A-B		124011P	5620P	—
S 8801-8-160-12-12	160	40	63	11,5	12	—	4,00	3,8÷5	C		124011P	5620P	—
S 8801-8-160-18-12	160	40	63	11,5	18	—	3,91	3,8÷5	C	1206			
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				



SCELTA VELOCE - QUICK PICK																		Tenacità + Toughness -						Pag. 486		HT	HW	HC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
COD.			P			M			K			N			S			H			CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS					l	d	s	d1	r	a°																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R			F2740	T3116	F3120	T1730	F1335																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
SNMX	1206QNN	.F51		○	○				●	●													■		■																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

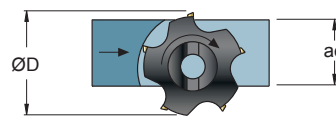
MATERIALI - MATERIALS Pag. 1119			VDI 3323 GR.	HB Rm1) HRC2)	fz0 mm			Vc m/min Pag. 500												
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL		1-5	125-300	0,12	0,25	0,35													
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL		6-9	180-350	0,1	0,2	0,3													
	ACCIAIO ALTO LEGATO - ALLOY STEEL		10-11	200-325	0,1	0,2	0,3													
	INOX MARTENS. - STAINLESS STEEL MART		12-13	200-240	0,08	0,15	0,25													
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											
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE		17-18	160-250	0,12	0,25	0,35	180	260											
	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																
	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⁾																

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

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

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

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

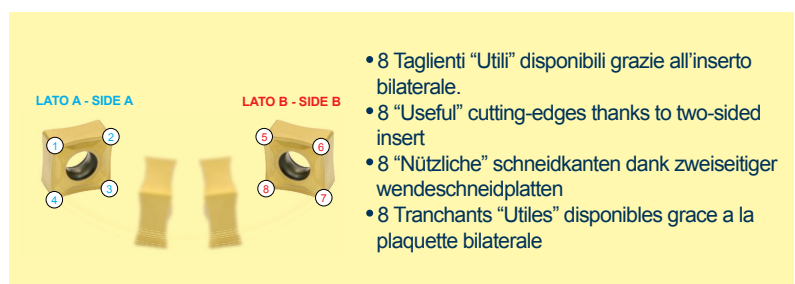


ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,1	1,2	1,3	1,5

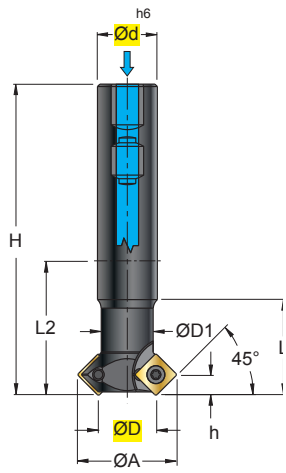
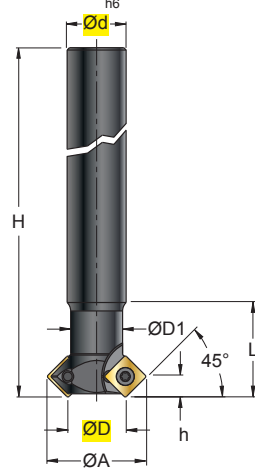
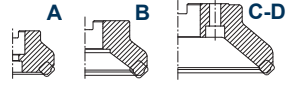
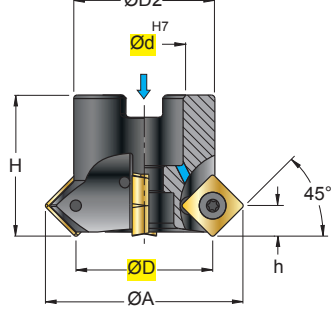
ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 500	Vc (min)-----Vc(max)			

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

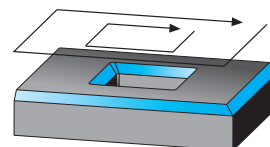
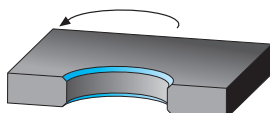
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min⁻¹) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE - TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR



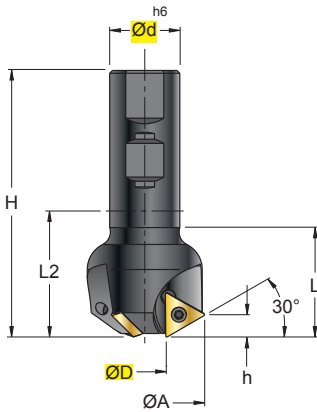
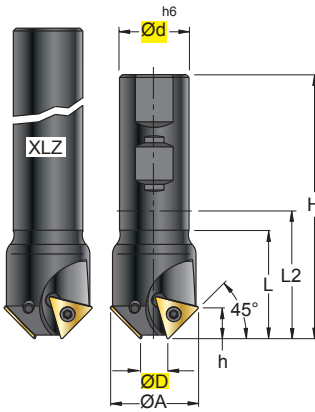
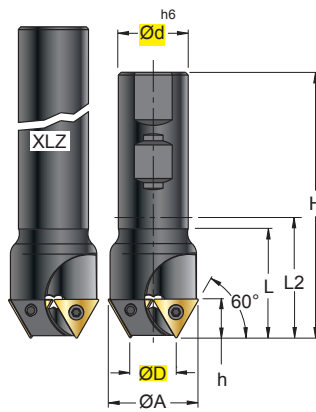
- 8 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 8 "Useful" cutting-edges thanks to two-sided insert
- 8 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 8 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

S 676W ..	S 676XLZ ..	S 678W .. 12	SPMTN54	
Ø 09-032	Ø 09-032	Ø 040-050	SPMWN51	
		ISO 6462 ...  	SPMWN59	
 INSERTI - INSERTS PAG. 517				

(mm)																		
ART.	ØD	Ød	ØD1	ØD2	ØA	H	h	L	L2	Z		kg	Nm	ISO 6462				
S 676W 009 - 06	9	16	9	–	17,0	90	4,0	29	42	1	/	0,107	1,1+1,3	–	060304	12256P	5608P	–
S 676W 016 - 09	16	20	16	–	28,0	110	5,8	42	60	2	–	0,209	3,0+3,5	–	09T308	123509P	5615P	–
S 676W 025 - 12	25	25	22	–	41,5	130	8	40	74	2	–	0,434	4,0+5,0	–	120408	124510P	5620P	–
S 676W 032 - 12	32	32	30	–	48,5	130	8	50	70	3	–	0,716	4,0+5,0	–				
S 676XLZ 009 - 06	9	16	9	–	17,0	150	4,0	29	–	1	/	0,205	1,1+1,3	–	060304	12256P	5608P	–
S 676XLZ 016 - 09	16	20	16	–	28,0	200	5,8	42	–	2	–	0,444	3,0+3,5	–	09T308	123509P	5615P	–
S 676XLZ 025 - 12	25	25	22	–	41,5	200	8	40	–	2	–	0,723	4,0+5,0	–	120408	124510P	5620P	–
S 676XLZ 032 - 12	32	32	30	–	48,5	250	8	50	–	3	–	1,491	4,0+5,0	–				
S 678W 040 - 12	40	22	–	40	56,0	40	8	–	–	4	–	0,252	4,0+5,0	A	120408	124510P	5620P	VBSF10
S 678W 050 - 12	50	22	–	48	66,0	40	8	–	–	5	–	0,403	4,0+5,0	A				



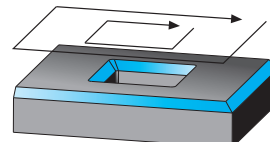
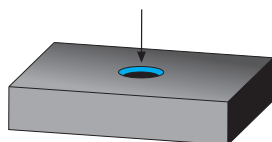
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
 XLZ = EXTRALUNGA, STELO CILINDRICO - EXTRALONG, CYLINDRICAL SHANK - EXTRALANG, ZYLINDERSCHAFT - EXTRALONGUE, QUEUE CYLINDRIQUE
 = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

S 616.30 ..			S 616.45 .. S 616XLZ ..			S 616.60 ..			TCMT 110204 .G39						
Ø 16	γ_p +10° γ_f 0° γ_o +5°		Ø 1,2-25	γ_p +29,5°/+6° γ_f -15°/-5° γ_o -15°/+1°		Ø 5,4-17	γ_p +8,5°/+4° γ_f -15°/-7° γ_o -0,5°/0°		TCMTS42						
									TCMTG52						
									TCMT 220408 EN .Z52						
 INSERTI - INSERTS PAG. 517															
(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 (*)	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	124510P	5620P	
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

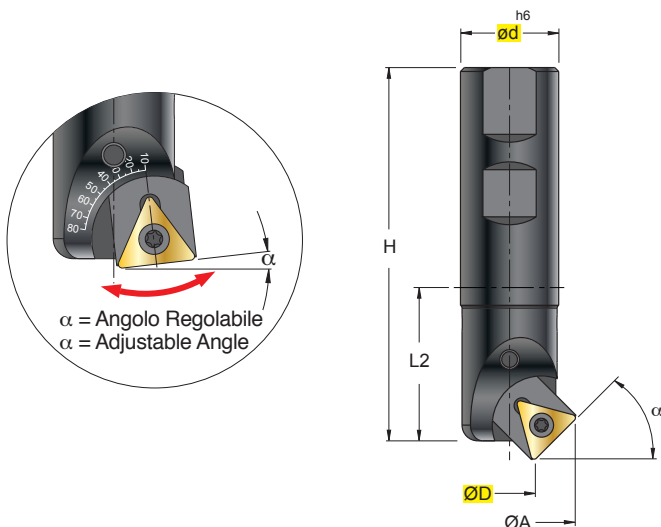
(***) Misure rilevate con inserto TCMT 220408
Dimensions obtained with insert TCMT 220408
Mit der Wendeplatte Tcmt 220408 aufgenommene
Bemessungen
Dimensions relevées avec plaquette TCMT 220408



XLZ = EXTRALUNGA, STELO CILINDRICO - EXTRALONG, CYLINDRICAL SHANK - EXTRALANG, ZYLINDERSCHAFT - EXTRALONGUE, QUEUE CYLINDRIQUE
↻ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

S 618 .. .3

Ø 20-25



TCMT
110204
.G39



TCMT ...
.S42

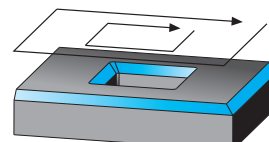
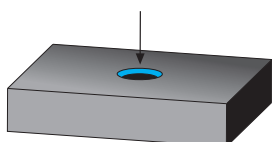


TCMT ...
.G52



INSERTI - INSERTS
PAG. 517

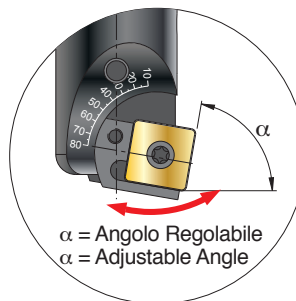
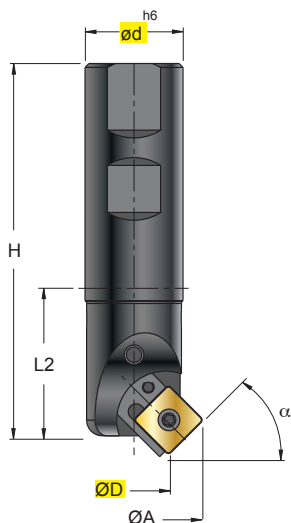
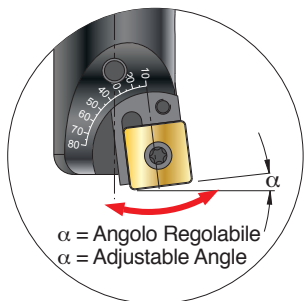
(mm)														
ART.		ØD	Ød	ØA	H	L2	α							
S 618	020-11 .3	7,1	20	25,6	100	51	10°	0,213	1,1+1,3	1102	S11	12256P	5608P	FS243
		8,6	20	26,2	100	51	20°	0,213	1,1+1,3					
		10,3	20	26,5	100	51	30°	0,213	1,1+1,3					
		12,2	20	26,4	100	51	40°	0,213	1,1+1,3					
		13,2	20	26,3	100	51	45°	0,213	1,1+1,3					
		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

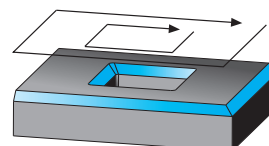
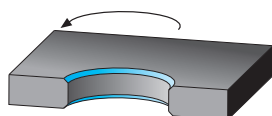
Ø 20

SCMT
1204..
.G52



INSERTI - INSERTS
PAG. 205

		(mm)														
ART.		ØD	Ød	ØA	H	L2	α									
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							

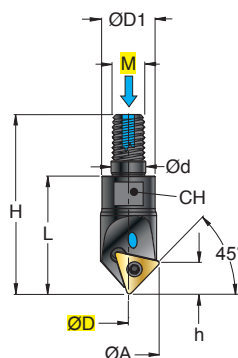
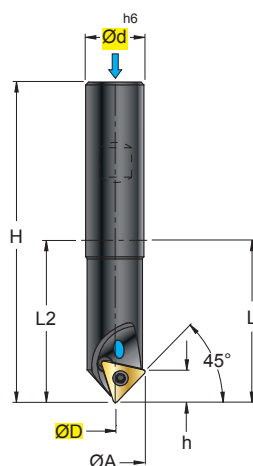


S 613.45W-0-16

Ø 0

S 613.9.45W-0-16

Ø 0



TCMX 16T308ZN .S52



INSERTI - INSERTS
PAG. 517

GRADO
GRADE

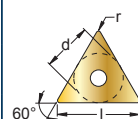
QUICK
PICK

MATERIALI
MATERIALS

F4140



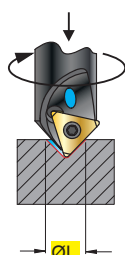
P	M	K	N	S	H
●	●	○	○	●	



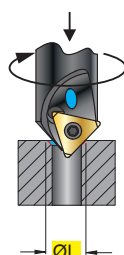
mm	l	d	S	d1	r
	16,5	9,52	3,97	4,4	0,8

(mm)

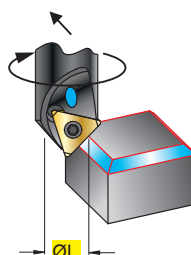
ART.	ØD	M	Ød	ØD1	ØA	H	h	L	L2	Z	CH	kg	Nm			
S 613.45W-0-16	0	-	20	-	21,6	110	10	50	60	1	-	0,21	3,8+5,0	16T308	12409P	5615P
S 613.9.45W-0-16	0	10	10,5	18	21,6	59	10	40	-	1	15	0,07	3,8+5,0	16T308	12409P	5615P



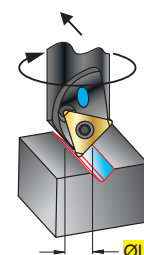
1



2



3



4

MATERIALI - MATERIALS Pag. 1119		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 ³⁾	50	0,01-0,06	0,03-0,07	0,05-0,1
H	ACCIAIO TEMPRATO - HARDENED STEEL	38-41	45-60 ²⁾				

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

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

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

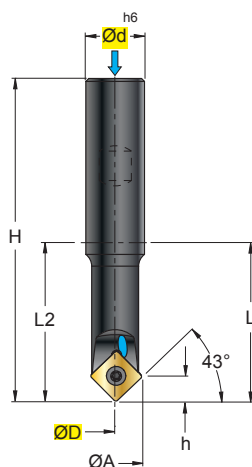
$$Vf = fz \cdot z \cdot n = \text{mm/min}$$

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

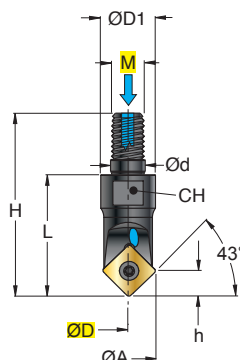
S 614.45W-0-12

Ø 0



S 614.9.45W-0-12

Ø 0



SCMX 120408ZN .S52



INSERTI - INSERTS
PAG. 513

GRADO
GRADE

QUICK
PICK

MATERIALI
MATERIALS

F4140

P

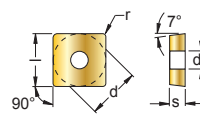
M

K

N

S

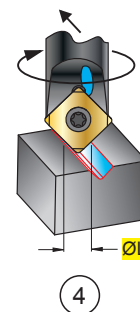
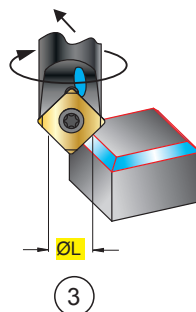
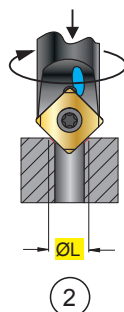
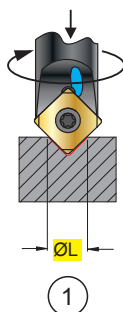
H



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

(mm)

ART.	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



MATERIALI - MATERIALS Pag. 1119		VDI 3323 GR.	HB Rm1) HRC2)	Vc m/min F4140	fz mm 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⁾	/	/	/	/

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

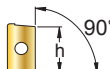
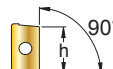
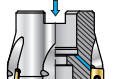
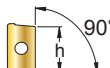
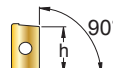
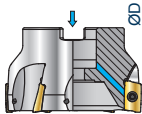
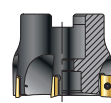
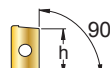
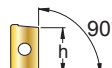
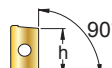
$$fz = fz0 \cdot Kae = \text{mm}$$

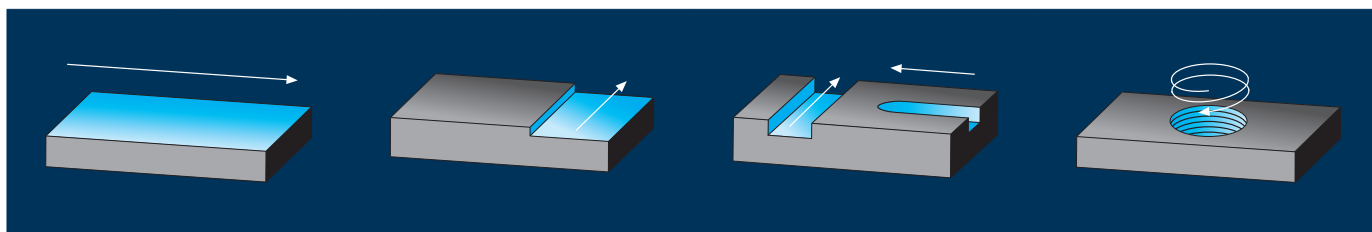
$$fn = fz \cdot z = \text{mm}$$

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

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

S2000. 86..07 Pag. 416		S2000. 89..07 Pag. 416		S9006.6.. W.. -06 Pag. 422		S9006. 8W.. -06 Pag. 422		S1086 Pag. 426			
 ØD = 10 - 25		 ØD = 18 - 35		 NEW ØD = 20 - 40		 NEW ØD = 20 - 40		 NEW ØD = 40 - 100			
S 2000.86W .. 07		S 2000.89W .. 07		S 9006.6W .. -06		S 9006.6XLW .. -06		S 9006.8W .. -06			
 90° BD..0703 h = 6				 90° TNGX..0604 h = 6				 90° AP..1003 h = 10			
S2000. 86..11 Pag. 418		S2000. 88..11 Pag. 418		S2000. 89..11 Pag. 418		S9005- 6..W..-09 Pag. 424		S9005- 8W..-09 Pag. 424		S9005- 9W..-09 Pag. 424	
 ØD = 16 - 40		 ØD = 40 - 80		 ØD = 16 - 35		 NEW ØD = 32 - 40		 NEW ØD = 40 - 125		 NEW ØD = 32 - 40	
S 2000.86W .. 11 S 2000.86MW .. 11 S 2000.86XLW .. 11 S 2000.86XLMW .. 11		S 2000.88W .. 11		S 2000.89W .. 11		S 9005-6W- ... -09 S 9005-6XLW- ... -09		S 9005-8W- ... -09		S 9005-9W- ... -09	
 90° BD..11T3 h = 11				 90° TOKX..09T3 h = 8				 90° AP..1003 h = 10			
S2000. 86..17 Pag. 420		S2000. 88..17 Pag. 420						S1088 Pag. 430			
 ØD = 25 - 40		 ØD = 25 - 40		 ØD = 40 - 100				 ØD = 40 - 63			
S 2000.86W .. 17		S 2000.86XLW .. 17		S 2000.88W .. 17				S 1088 .. 10			
 90° BD..1704 h = 15,7								 90° AP..1003 h = 10			
								S1089 Pag. 430			
								 ØD = 10 - 12			
								 ØD = 16 - 32			
								S 1089W ..			
								 90° AP..1003 h = 10			

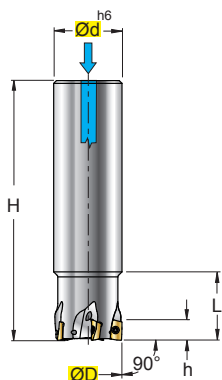


S9001-6W..-10		Pag. 432	S9001-8W..-10		Pag. 432	S1296		Pag. 436	S1298		Pag. 436	S1696		Pag. 438
		ØD = 20 - 40			ØD = 20 - 32			ØD = 32 - 40			ØD = 50 - 250			ØD = 25 - 40
S 9001-6W .. -10		S 9001-6XLW .. -10 S 9001-6XLW .. -10	S 9001-8W .. -10			S 1296W .. 12		S 1296XLZ .. 12	S 1298W/G/GW.. 12			S 1696 .. 16		S 1696W .. 16
90° LNMM..1006 h = 9			90° SD..1205 h = 10,5			90° AP..1604 h = 16								
S9001-6W..-15		Pag. 434	S9001-8W..-15		Pag. 434				S1696		Pag. 440	S1697		Pag. 440
		ØD = 32 - 40			ØD = 50 - 80						ØD = 25 - 40			ØD = 25 - 40
S 9001-6W .. -15			S 9001-8W .. -15						S 1696XLZ .. 16 S 1696XLZM .. 16			S 1697 .. 16		
90° LNMM..1510 h = 14						90° AP..1604 h = 16								
									S1698		Pag. 442			
											ØD = 40 - 125			ØD = 40 - 125
									S 1698 .. 16			S 1698W/GW .. 16		
						90° AP..1604 h = 16								
									S9003.8W		Pag. 444			
														ØD = 50 - 160
									S 9003.8W ..13					
90° LNMX 1313 h = 12														

S 2000.86W.. 07

Ø 10-25

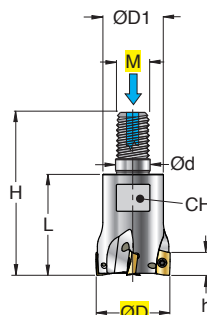
γ_p +3,5°/+7°
 γ_f -18,7°/-9,7°
 γ_o -18,7°/-9,7°



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



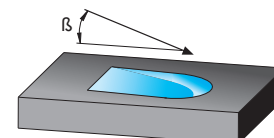
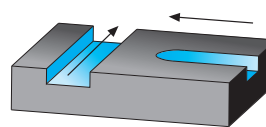
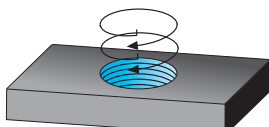
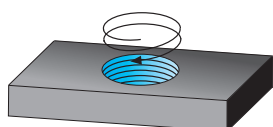
BDMT 0703
.Y52



INSERTI - INSERTS
PAG. 510

(mm)

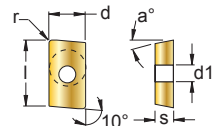
ART.	ØD	M	Ød	ØD1	H	h	L	β	Z	CH	kg	Nm			
S 2000.86W 010-01.07	10	-	10	-	80	6	17	6°	1	/	0,04	0,5+0,6	0703	122041P	5606P
S 2000.86W 012-02.07	12	-	12	-	80	6	18	3,5°	2	-	0,06	0,5+0,6			
S 2000.86W 014-02.07	14	-	12	-	80	6	18	3°	2	-	0,07	0,5+0,6			
S 2000.86W 016-03.07	16	-	16	-	85	6	20	1,8°	3	-	0,12	0,5+0,6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



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

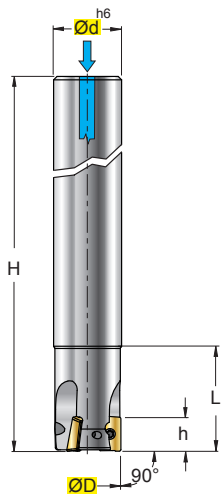
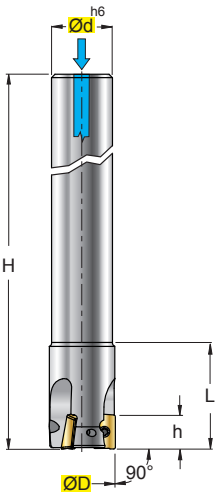
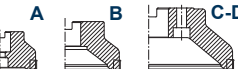
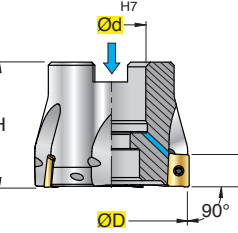
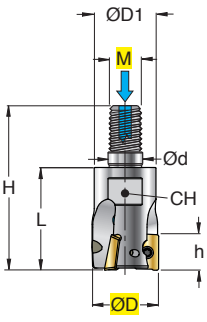
↺ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

HT	HW	HC
ERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS

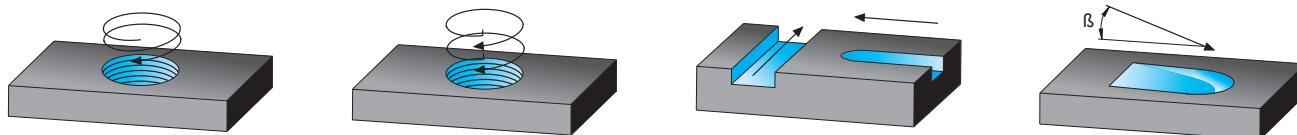
[illegible]

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc Pag. 500	Vc (min)-----Vc(max)			

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

S 2000.86W..11 S 2000.86XLW..11	S 2000.86MW..11 S 2000.86XLMW..11	S 2000.88W.. 11	S 2000.89W.. 11	BDGT 11T3 .Y57	
$\varnothing 16-40$ $\gamma_p +6,3^\circ/+11,7^\circ$ $\gamma_f -15^\circ/-7,63^\circ$ $\gamma_o -15^\circ/-7,63^\circ$	$\varnothing 16-32$ $\gamma_p +6,3^\circ/+11,7^\circ$ $\gamma_f -15^\circ/-7,63^\circ$ $\gamma_o -15^\circ/-7,63^\circ$	$\varnothing 40-80$ $\gamma_p +11^\circ/+11,7^\circ$ $\gamma_f -7^\circ/-7,5^\circ$ $\gamma_o -7^\circ/-7,5^\circ$	$\varnothing 16-35$ $\gamma_p +6,3^\circ/+10,5^\circ$ $\gamma_f -15^\circ/-8,5^\circ$ $\gamma_o -15^\circ/-8,5^\circ$	BDMT 11T3 .Y42	
		ISO 6462 ...  		BDMT 11T3 .Y52	
				 INSERTI - INSERTS PAG. 510	

ART.	$\varnothing D$	M	$\varnothing d$	$\varnothing D1$	H	h	L	β	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	—	11T3	122555PK	5608	—
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	—	11T3	122555PK	5608	—
S 2000.86MW 016-02.11	16	—	12	—	100	10	32	3°	2	—	—	0,10	1,1+1,3	—				
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	—	11T3	122555PK	5608	—
S 2000.86XLMW 018-02.11	18	—	16	—	170	10	32	3°	2	—	—	0,24	1,1+1,3	—				
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	—	11T3	122555PK	5608	—
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	—	11T3	122555PK	5608	VBSF08L
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	VBSF10
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	11T3	122555PK	5608	VBSF12
S 2000.88W 080-07.11	80	—	27	—	50	10	—	—	7	—	—	1,0	1,1+1,3	A				
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	—				



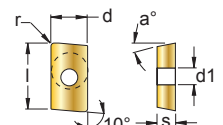
SCELTA VELOCE - QUICK PICK

Tenacità +
Toughness -



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		HT		HW		HC							
		CERMET		NON RIV. CEMENTED CARBIDE GRADES		RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS							
		N3015				F3710 F4725							
COD.		F	M	R	F	M	R	F	M	R	F	M	R
BDGT 11T302FR .Y57													
BDGT 11T304FR .Y57													
BDGT 11T308FR .Y57													
BDMT 11T304ER .Y42													
BDMT 11T308ER .Y42													
BDMT 11T308ER .Y52													
BDMT 11T312ER .Y52													
BDMT 11T316ER .Y52													
BDMT 11T320ER .Y52													
BDMT 11T324ER .Y52													
BDMT 11T331ER .Y52													
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY													
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY													



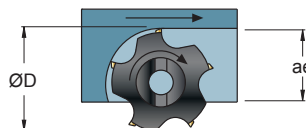
MATERIALI - MATERIALS Pag. 1119		VDI 3323 GR.	HB Rm ¹⁾ HRC ²⁾	fz0 mm			Vc m/min Pag. 500									
				F	M	R	N3015	F3710	F4725							
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1-5	125-300	0,08	0,15	0,25			200							
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6-9	180-350	0,08	0,15	0,2			170							
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16			160							
	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								
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2		170								
	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									
	RAME E SUE LEGHE - COPPER	26-28	90-110	0,08	0,15	0,2	625									
	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									
	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⁾													

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

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

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

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



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. 500	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



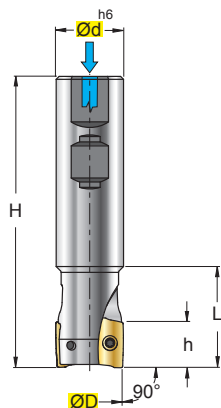
Raggio Inserto Insert Radius (mm)	Raggio Fresa Milling cutter Radius (mm)
1,6	R1,0
2,0	R1,2
2,4	R1,6
3,1	R2,5
4,0	

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

S 2000.86W.. 17

Ø 25-40

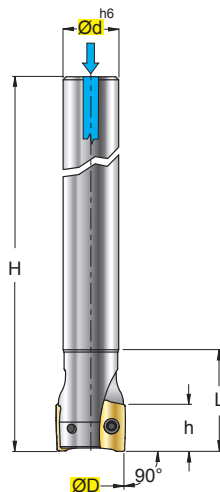
γ_p +7°/+10°
 γ_f -11°/-7°
 γ_o -11°/-7°



S 2000.86XL~~M~~W.. 17

Ø 25-40

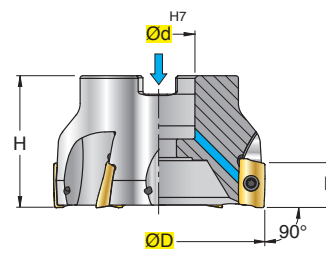
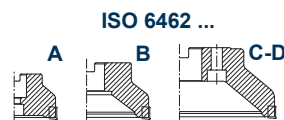
γ_p +7°/+10°
 γ_f -11°/-7°
 γ_o -11°/-7°



S 2000.88W.. 17

Ø 40-100

γ_p +10°
 γ_f -7°
 γ_o -7°



BDGT 1704
.Y57



BDMT 1704
.Y42



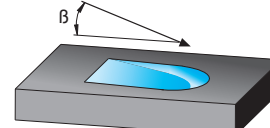
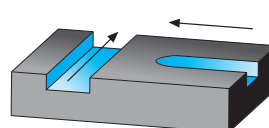
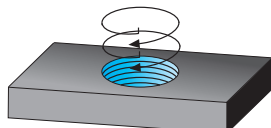
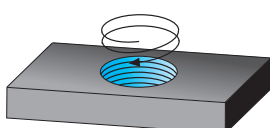
BDMT 1704
.Y52



INSERTI - INSERTS
PAG. 510

(mm)

(mm)																			
ART.		ØD	M	Ød	ØD1	H	h	L	β	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 2000.86XL	MW 025-02-17	25	–	20	–	210	15,7	60	4,5°	2	–	–	0,48	3,8+5,0	–	1704	C04008P	5615P	–
S 2000.86XL	MW 032-03-17	32	–	25	–	250	15,7	65	2,5°	3	–	–	0,90	3,8+5,0	–				
S 2000.86XL	MW 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	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	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



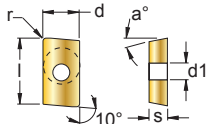
W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE

↻ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

SCELTA VELOCE - QUICK PICK



Pag. 486

HT	HW	HC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS										l	d	s	d1	r	a°																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY

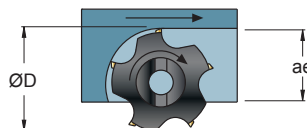
MATERIALI - MATERIALS Pag. 1119		VDI 3323 GR.	HB Rm ¹⁾ HRC ²⁾	fz0 mm			Vc m/min Pag. 500									
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	1-5	125-300	0,08	0,15	0,25	N3015	F3710	F4725							
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	6-9	180-350	0,08	0,15	0,2			170							
	ACCIAIO ALTO LEGATO - ALLOY STEEL	10-11	200-325	0,06	0,12	0,16			160							
	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								
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	17-18	160-250	0,08	0,15	0,2		170								
	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									
	RAME E SUE LEGHE - COPPER	26-28	90-110	0,08	0,15	0,2	625									
	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									
	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⁾													

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

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

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

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



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	Vc (min)-----Vc(max)			
Pag. 500				

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

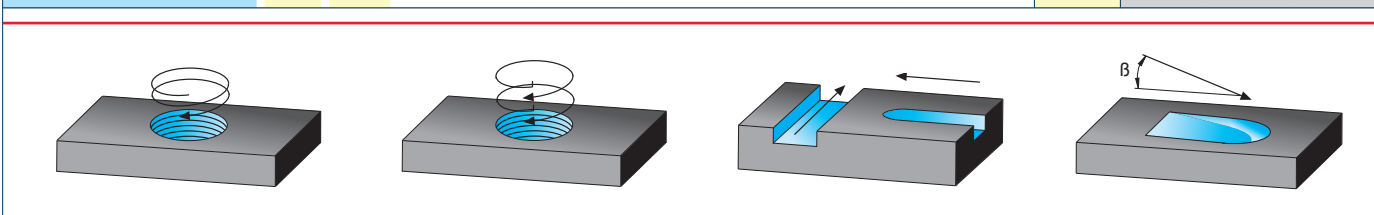


Raggio Inserto Insert Radius (mm)	Raggio Fresa Milling cutter Radius (mm)
1,6	R1,0
2,0	R1,2
2,4	R1,6
3,1	R2,5
4,0	

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

S 9006.6W- .. -06 Ø 20-40 NEW $\gamma_p -11^\circ$ $\gamma_f -16,5^\circ/-15^\circ$ $\gamma_o -16,5^\circ/-15^\circ$	S 9006.6XLW- .. -06 Ø 20-40 NEW $\gamma_p -11^\circ$ $\gamma_f -16,5^\circ/-15^\circ$ $\gamma_o -16,5^\circ/-15^\circ$	S 9006.8W- .. -06 Ø 40-100 NEW $\gamma_p -11^\circ$ $\gamma_f -15^\circ$ $\gamma_o -15^\circ$ ISO 6462 ...	TNGX 0604.. .X42 TNGX 0604.. .X54 INSERTI - INSERTS PAG. 518
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(mm)											ISO 6462	kg	Nm	ISO 6462	TNGX	5608P	VDST2008	VBSF10	VBSF12	VBSF16
ART.	ØD	Ød	ØD1	H	L	h	β	Z	↺											
S 9006.6W 020-03-06	20	20	-	100	40	6	2°	3	-		0,20	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6W 025-03-06	25	25	-	115	50	6	1,5°	3	-		0,37	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6W 025-04-06	25	25	-	115	50	6	1,5°	4	✓		0,35	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6W 032-04-06	32	32	-	130	60	6	1°	4	✓		0,71	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6W 040-05-06	40	32	-	140	70	6	0,8°	5	✓		0,80	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6XLW 020-03-06	20	20	-	160	40	6	2°	3	-		0,34	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6XLW 025-03-06	25	25	-	170	50	6	1,5°	3	✓		0,57	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6XLW 032-04-06	32	32	-	180	60	6	1°	4	✓		1,02	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6XLW 032-05-06	32	32	-	180	60	6	1°	5	✓		1,01	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.6XLW 040-05-06	40	32	-	200	70	6	0,8°	5	✓		1,17	1,1+1,3	-	0604...	12256P	5608P	-			
S 9006.8W 040-05-06	40	16	36	40	-	6	0,8°	5	✓		0,23	1,1+1,3	-	0604...	12256P	5608P	VDST2008			
S 9006.8W 040-06-06	40	16	36	40	-	6	0,8°	6	✓		0,23	1,1+1,3	-	0604...	12256P	5608P	VDST2008			
S 9006.8W 050-05-06	50	22	41	40	-	6	0,5°	5	✓		0,33	1,1+1,3	A	0604...	12256P	5608P	VBSF10			
S 9006.8W 050-07-06	50	22	41	40	-	6	0,5°	7	✓		0,31	1,1+1,3	A	0604...	12256P	5608P	VBSF10			
S 9006.8W 063-06-06	63	22	44	40	-	6	0,5°	6	✓		0,47	1,1+1,3	A-B	0604...	12256P	5608P	VBSF10			
S 9006.8W 063-09-06	63	22	44	40	-	6	0,5°	9	✓		0,44	1,1+1,3	A-B	0604...	12256P	5608P	VBSF10			
S 9006.8W 080-10-06	80	27	61	50	-	6	0,5°	10	✓		1,01	1,1+1,3	A-B	0604...	12256P	5608P	VBSF12			
S 9006.8W 100-12-06	100	32	75	50	-	6	0,5°	12	✓		1,61	1,1+1,3	A-B	0604...	12256P	5608P	VBSF16			



W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
L = LUNGA, STELO CILINDRICO - LONG, CYLINDRICAL SHANK - LANG, ZYLINDERSCHAFT - LONGUE, QUEUE CYLINDRIQUE
↺ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

SCELTA VELOCE - QUICK PICK														Tenacità + Toughness -				Pag. 486		HT	HW	HC																						
COD.		P			M			K			N			S			H			CERMET	NON RIV. CEMENTED CARBIDE GRADES	RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS			F5105	F2330 $\leq m2$	F2335 $\leq m2$	l	d	s	d1	r	a°											
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R																									
TNGX	060404 .X42	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○																									
TNGX	060408 .X42	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○																									
TNGX	060404 .X54	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○																									
TNGX	060408 .X54	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○																									
CON ADDUZIONE LUBROREFRIGERANTE - WITH COOLANT SUPPLY																																												
SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY																																												

MATERIALI - MATERIALS Pag. 1119			VDI 3323 GR.	HB Rm1) HRC2)	fz0 mm			Vc m/min Pag. 500									
P	ACCAIO NON LEGATO - NOT ALLOY STEEL		1-5	125-300	0,05	0,08	0,15	F5105	F2330	F2335							
	ACCAIO POCO LEGATO - LOW ALLOY STEEL		6-9	180-350	0,05	0,08	0,15	280	200	200							
	ACCAIO ALTO LEGATO - ALLOY STEEL		10-11	200-325	0,05	0,08	0,15	230	180	160							
	INOX MARTENS. - STAINLESS STEEL MART		12-13	200-240	0,05	0,08	0,15	180	180	160							
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		14.1-14.2	180-230	0,05	0,08	0,12	160	170	140							
K	GHISA GRIGIA - GREY CAST IRON		15-16	180-260	0,05	0,1	0,18	300		220							
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE		17-18	160-250	0,05	0,1	0,18	250		200							
	GHISA MALLEABILE - MALLEABLE CAST IRON		19-20	130-230	0,05	0,1	0,18	250		200							
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	0,05	0,08	0,12	60	60	60							
	TITANIO E SUE LEGHE - TITANIUM		36-37	400-1050 ¹⁾	0,05	0,08	0,12	60	60	60							
H	ACCAIO TEMPRATO - HARDENED STEEL		38-41	45-60 ²⁾													



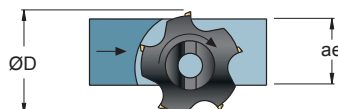
- SE LA SPORGENZA DELLA FRESA É **>3xD** RIDURRE I PARAMETRI DI LAVORO: **Vc, fz, ap** DEL 30%
- IF THE PROTRUSION OF THE CUTTER IS **>3xD**, REDUCE CUTTING PARAMETERS: **Vc, fz, ap** BY 30%

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

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

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

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

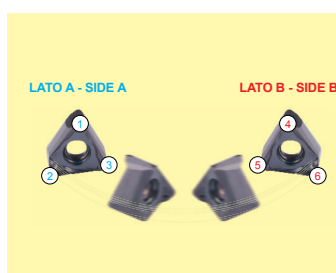


ae/D	0,5-1 50-100%	0,3 30%	0,2 20%	0,1 10%	0,05 5%	0,02 2%
Kae	1	1,2	1,5	2,1	3	4,8

ae/D	0,5-1 50-100%	0,2 20%	0,1 10%	0,05 5%
Vc (min)-----Vc(max)				
R-----M-----F				
Vc Pag. 500				

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

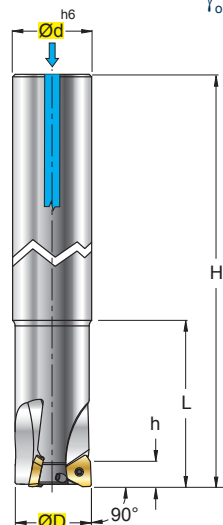


- 6 Taglienti "Utili" disponibili grazie all'inserto bilaterale.
- 6 "Useful" cutting-edges thanks to two-sided insert
- 6 "Nützliche" schneidkanten dank zweiseitiger wendeschneidplatten
- 6 Tranchants "Utiles" disponibles grace a la plaquette bilaterale

S 9005-6W- .. -09
S 9005-6XLW- .. -09

Ø 32-40 **NEW**

γ_p +12°/+13°
 γ_r -7°/-6°
 γ_o -7°/-6°

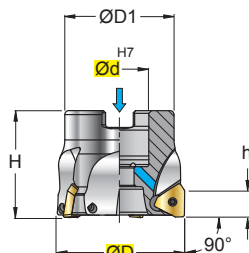
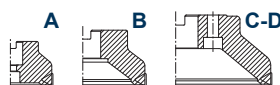


S 9005-8W- .. -09

Ø 40-125 **NEW**

γ_p +13°
 γ_r -6°/-5°
 γ_o -6°/-5°

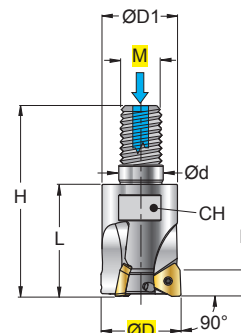
ISO 6462 ...



S 9005-9W- .. -09

Ø 32-40 **NEW**

γ_p +12°/+13°
 γ_r -7°/-6°
 γ_o -7°/-6°



TOKX
09T3..
.G52

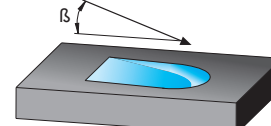
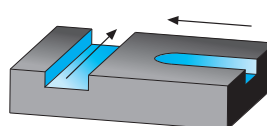
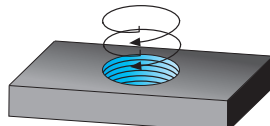
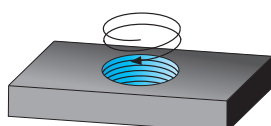


TOKX
09T3..
.G53



INSERTI - INSERTS
PAG. 518

(mm)														ISO 6462	kg	Nm	ISO 6462	123008P	5608P	VDST2008	VBSF10	VBSF12	VBSF16	VBSF20
ART.	ØD	M	Ød	ØD1	H	L	h	β	Z	CH	kg	Nm	ISO 6462											
S 9005-6W 032-03-09	32	-	32	-	130	40	8	1°	3	-	0,71	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-6W 035-04-09	35	-	32	-	130	40	8	0,9°	4	-	0,72	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-6W 040-04-09	40	-	32	-	130	40	8	0,8°	4	-	0,76	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-6XLW 032-03-09	32	-	32	-	255	65	8	1°	3	-	1,42	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-6XLW 035-04-09	35	-	32	-	255	65	8	0,9°	4	-	1,46	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-6XLW 040-04-09	40	-	32	-	255	65	8	0,8°	4	-	1,51	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-8W 040-04-09	40	-	16	36	40	-	8	0,8°	4	-	0,20	1,2+1,5	A	09T3...	123008P	5608P	VDST2008	-	-	-	-	-	-	-
S 9005-8W 050-05-09	50	-	22	41	40	-	8	0,5°	5	✓	0,27	1,2+1,5	A	09T3...	123008P	5608P	VBSF10	-	-	-	-	-	-	-
S 9005-8W 063-06-09	63	-	22	48	40	-	8	0,5°	6	✓	0,43	1,2+1,5	A	09T3...	123008P	5608P	VBSF12	-	-	-	-	-	-	-
S 9005-8W 080-07-09	80	-	27	61	50	-	8	0,5°	7	✓	0,93	1,2+1,5	A	09T3...	123008P	5608P	VBSF16	-	-	-	-	-	-	-
S 9005-8W 100-07-09	100	-	32	80	50	-	8	0,5°	7	✓	1,66	1,2+1,5	A	09T3...	123008P	5608P	VBSF16	-	-	-	-	-	-	-
S 9005-8W 100-09-09	100	-	32	80	50	-	8	0,5°	9	✓	1,60	1,2+1,5	A	09T3...	123008P	5608P	VBSF20	-	-	-	-	-	-	-
S 9005-8W 125-08-09	125	-	40	95	63	-	8	0,5°	8	✓	3,10	1,2+1,5	A	09T3...	123008P	5608P	VBSF20	-	-	-	-	-	-	-
S 9005-8W 125-10-09	125	-	40	95	63	-	8	0,5°	10	✓	3,07	1,2+1,5	A	09T3...	123008P	5608P	VBSF20	-	-	-	-	-	-	-
S 9005-9W 032-03-09	32	16	17	29	67	43	8	1°	3	-	0,19	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-9W 035-04-09	35	16	17	29	67	43	8	0,9°	4	-	0,20	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-
S 9005-9W 040-04-09	40	16	17	29	67	43	8	0,8°	4	-	0,23	1,2+1,5	-	09T3...	123008P	5608P	-	-	-	-	-	-	-	-



W = FORO PER LIQUIDO REFRIGERANTE - COOLANT BORE - KÜHLMITTELBOHRUNG - TROU DU LIQUIDE D'ARROSAGE
L = LUNGA, STELO CILINDRICO - LONG, CYLINDRICAL SHANK - LANG, ZYLINDERSCHAFT - LONGUE, QUEUE CYLINDRIQUE
↺ = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

SENZA ADDUZIONE LUBROREFRIGERANTE - WITHOUT COOLANT SUPPLY



- IF THE PROTRUSION OF THE CUTTER IS $>3x D$, REDUCE CUTTING PARAMETERS: V_c , f_z , a_p BY 30%

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. 500	Vc (min)-----Vc(max)			

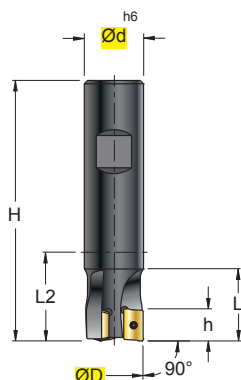
Vc = m/min VELOCITÀ DI TAGLIO - CUTTING SPEED
n = giri/min (min⁻¹) NUMERO DI GIRI - NUMBER OF REVOLUTIONS
fz = mm AVANZAMENTO AL DENTE - TOOTH FEED
fn = mm AVANZAMENTO AL GIRO - FEED / REVOLUTION
Vf = mm/min VELOCITÀ DI AVANZAMENTO - FEED SPEED
Kae = FATTORE DI CORREZIONE - CORRECTION FACTOR

425

S 1086 .. 10

Ø 16-32

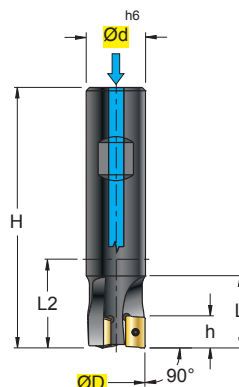
γ_p -1,5°/+10°
 γ_f -21°/-11,5°
 γ_o -21°/-11,5°



S 1086W..10 S 1086GW..10

Ø 10-32

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



APKT 1003
.I52



APKT 1003
.S52



APKX 1003
.S52



APHT 1003
.Z53



APKT 1003
.Z54



APKT 1003
.T55



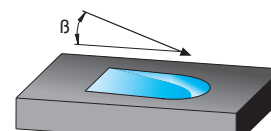
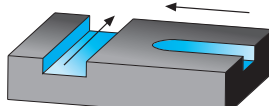
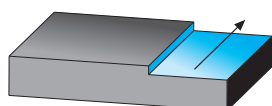
APHT 1003
.S57



INSERTI - INSERTS
PAG. 508

(mm)

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



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

G = PASSO GROSSO - LARGE TEETH DISTANCE - NORMALE ZAHNTEILUNG - GRANDE DISTANCE DENTS.

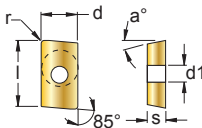
B = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE

SCELTA VELOCE - QUICK PICK

Tenacità +
Toughness -

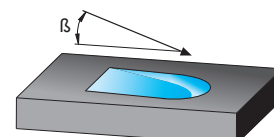
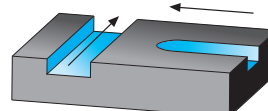
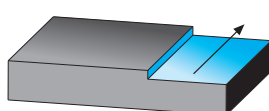
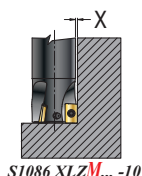


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HT		HW		HC															
CERMET		NON RIV. CEMENTED CARBIDE GRADES		RIVESTITI COATED GRADES BESCHICHTET RECOUVERTS															
	T120		F2140 ≤mz	T516	T526	T528N	T530	T525	F2330 ≤mz	F1035	F2335 ≤mz	l	d	s	d1	r	a°		
												10,5	6,70	3,50	2,8	0,5	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		
												11,0	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		

S 1086GXL..10	S 1086XLZ..10	S 1086XLZM..10	S 1087..10	APKT 1003 .I52	APKT 1003 .S52	APKX 1003 .S52	APHT 1003 .Z53	APKT 1003 .Z54	APKT 1003 .T55	APHT 1003 .S57
$\varnothing 20-40$ $\gamma_p +7^\circ/+10^\circ$ $\gamma_f -13,5^\circ/-10^\circ$ $\gamma_o -13,5^\circ/-10^\circ$	$\varnothing 10-32$ $\gamma_p -1,5^\circ/+10^\circ$ $\gamma_f -21^\circ/-11,5^\circ$ $\gamma_o -21^\circ/-11,5^\circ$	$\varnothing 16-25$ $\gamma_p -1,5^\circ/+10^\circ$ $\gamma_f -21^\circ/-11,5^\circ$ $\gamma_o -21^\circ/-11,5^\circ$	$\varnothing 20-32$ $\gamma_p +7^\circ/+10^\circ$ $\gamma_f -13,5^\circ/-11,5^\circ$ $\gamma_o -13,5^\circ/-11,5^\circ$							
				INSERTI - INSERTS PAG. 508						

(mm)																
ART.	ØD	Ød/CM	ØD1	H	h	L	L2	L3	β	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	1003	12255P	5608P
S 1086XLZM 020 - 10	20	19	-	160	10	25	-	-	1,5°	2	-	0,5	0,34			
S 1086XLZM 025 - 10	25	24	-	200	10	25	-	-	0,9°	3	-	0,5	0,68			
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			



XLZ = EXTRALUNGA, STELO CILINDRICO - EXTRALONG, CYLINDRICAL SHANK - EXTRALANG, ZYLINDERSCHAFT - EXTRALONGUE, QUEUE CYLINDRIQUE
 GXL = PASSO GROSSO EXTRALUNGA - EXTRALONG WITH LARGE TEETH DISTANCE - EXTRALANG MIT NORMAL ZUHNTILUNG - EXTRALONGUE AVEC GRANDE DISTANCE DENTS
 X = PASSO DIFFERENZIATO - DIFFERENTIAL PITCH - UNGLEICHE TEILUNG - PAS DIFFERENCIE