SAU

QUALITY TOOLS ENGINEERING

SAU è dedicata all'eccellenza nei servizi delle lavorazioni meccaniche di alta qualità

SAU is committed to excellence in high quality mechanical processing services

UTENSILI IN METALLO DURO
HARD METAL TOOLS

Milling / Drilling

GH209

METALLO DURO SAU

SAU
QUALITY TOOLS ENGINEERING

Nata nel 1986 come azienda di servizio e di supporto alla commercializzazione di prodotti di utensileria standard, ben presto la SAU S.p.A. si è trasformata in vera entità produttiva e progettuale autonoma. Il forte e continuativo impegno che tutto lo staff SAU S.p.A. ha profuso in questi anni, ha consentito di ottenere ottimi risultati sia in termini di fatturato che di presenza sul mercato interno ed internazionale. Flessibilità, produttività, qualità, disponibilità di prodotto, velocità di servizio e gamme di prodotti sempre più complete, fanno della SAU S.p.A. una solida e affidabile realtà produttiva ed imprenditoriale a cui rivolgersi in alternativa ai grandi leader di settore.

Founded in 1986 as a company providing service and support for the distribution of standard tooling, SAU tool has soon become established as an autonomous production and engineering company. The resolute and continuous commitment of the company's staff over the last few years has enabled the achievement of excellent results, both in terms of turnover and establishment on the domestic and international market. Production flexibility, quality, products readily available, fast service and an ever-increasing range of products make SAU S.p.A. a sound and reliable production company to use as an alternative to the leaders in the sector.

CERTIFICATO DEL SISTEMA DI GESTIONE PER LA QUALITÀ
QUALITY MANAGEMENT SYSTEM CERTIFICATE

Si dichiara che il sistema di gestione per la Qualità dell'Organizzazione:
We certify that the Quality Management System of the Organization:

SAU S.p.A.

Registrazione no/*Registration no:*
440 – A

COPIA CONFORME ALL'ORIGINALE
COPY TRUE TO THE ORIGINAL

Indirizzo/*Address:*
Via dei Raseni, 6/B 41040 Polinago MO Italia

Via Mozart, 43 41100 Modena Italia

È conforme alla norma/*is in compliance with the standard:*

UNI EN ISO 9001:2000
ISO 9001:2000

Per i seguenti prodotti/servizi/*For the following products/services:*

Progettazione, fabbricazione e commercializzazione di utensileria meccanica di precisione, mandrini e prodotti affini.

EA: 17

Il mantenimento della certificazione è soggetto a sorveglianza annuale e subordinato al rispetto dei requisiti essenziali CERMET.
Maintenance of the certification is subject to annual survey and dependent upon the observance of CERMET basic requirements.

Data rilascio certificato/*Certificate issuance date:* 1997-12-15
Data ultima modifica/*Last modification date:* 2007-02-07
Data prossimo rinnovo/*Following renewal date:* 2010-02-07

Direttore Generale/*General Manager*
Ing. Rodolfo Trippodo

SINCERT

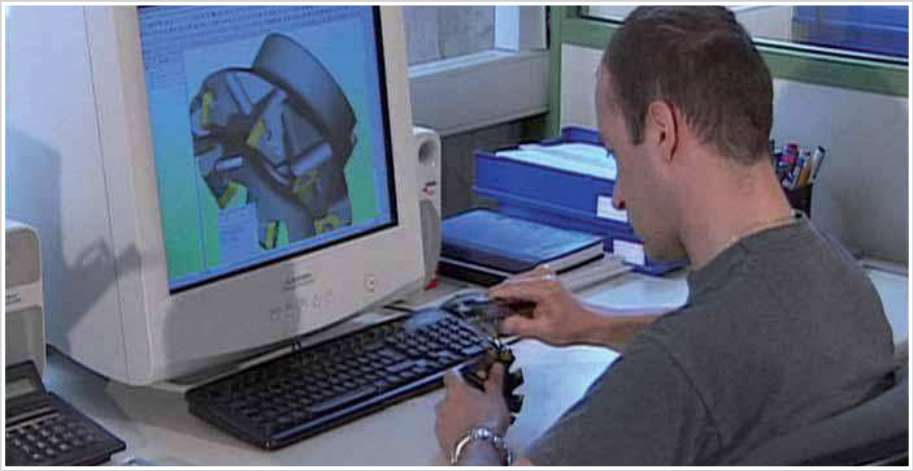
CERMET

CERMET Soc. Cons. a r.l. - Headquarters Italy - Via Cadriano 23 - 40057 Cadriano di Granarolo (BO) - Tel +39.051.764.811 - Fax +39.051.763.38[illegible]

L'azienda SAU S.p.A. è certificata
con 100% Energia Pulita Multiutility

SAU S.p.A. is certified with
100% Multiutility Green Energy

POLINAGO



La progettazione avviene su sistemi CAD 3D con i quali vengono simulate le condizioni di lavorazione e quindi la gestione informatizzata di tutti i dati tecnici di produzione.

Designing is executed on 3D CAD systems which simulate operating conditions and, therefore, all the technical production data is electronically managed.

La produzione avviene su macchine a controllo numerico di tecnologia giapponese per garantire una migliore costanza qualitativa.

SAU production is achieved using Japanese technology CNC machines in order to guarantee a constantly high standard.

La grande disponibilità di prodotti semilavorati e l'utilizzo di macchine utensili sofisticate ci consentono una elevata flessibilità produttiva.

The optimum availability of semifinished products and the use of sophisticated machinery give us a high degree of production fl exibility.

L'avanzamento delle fasi produttive, i magazzini intermedi ed il magazzino finale degli oltre 52.000 articoli SAU, sono completamente gestiti da un sistema informatico creato appositamente su nostre richieste.

The progress of the production phases, the intermediate warehouses and fi nal warehouse forSAU' s 52,000 products are completely managed by a specially designed data processing system.

Controllo accurato della produzione taratura degli strumenti di misura.

Careful monitoring of production and calibration of measuring instruments.

L'assemblaggio comprende il collaudo finale di ogni prodotto.

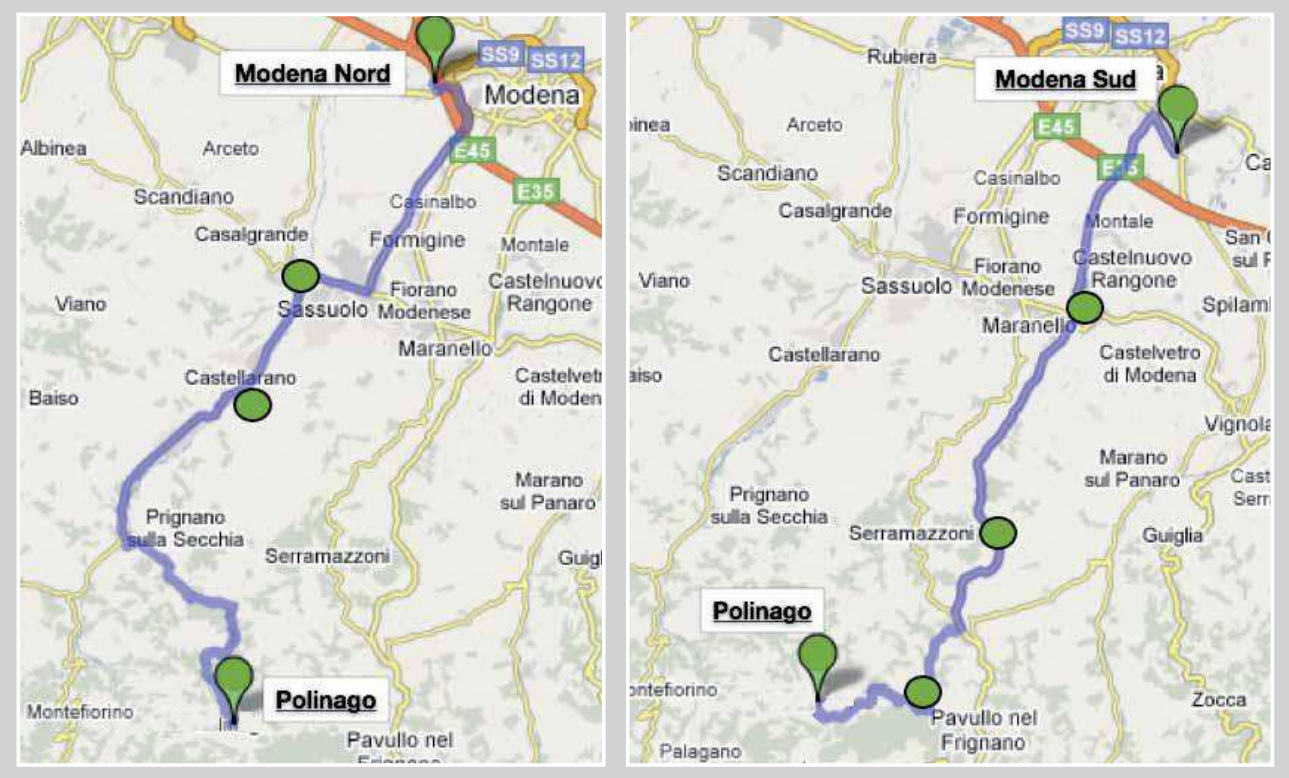
Assembly includes the final testing of each product.

MODENA

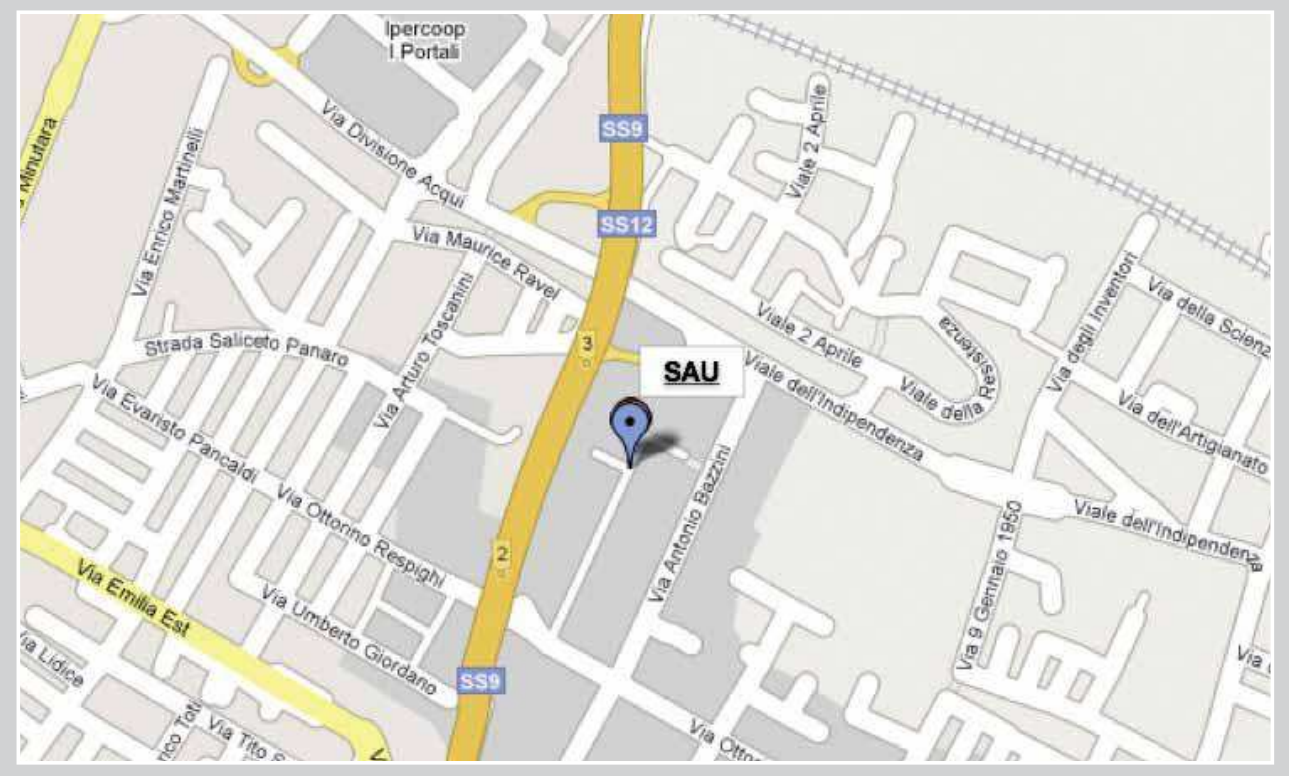
La SAU S.p.A. si avvale di una professionale e consolidata rete di Vendita locale, formata da venditori con una grande esperienza maturata in anni di attività e da una rete di distributori sparsi nel territorio nazionale ed estero.

SAU S.p.A. draws on a professional and consolidated local sales network consisting of dealers with many years of professional experience and a network of distributors located throughout Italy and abroad.

POLINAGO - Via dei Raseni 6/b - come raggiungerci



MODENA - Via Mozart 47, 41100 Modena (MO) - come raggiungerci



GH 209

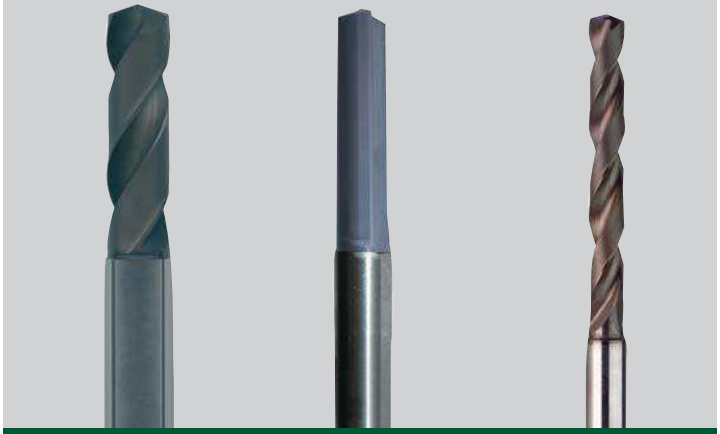
2 Tagli
2 Cuttings

Pag. A 9

3 Tagli
3 Cuttings

Pag. A 25

Punte integrali in HM
Solid carbide Drills



Pag. B 7

Punte a Gradino
Step Drills

Pag. B 25

Punte a Centrare
Center Drills

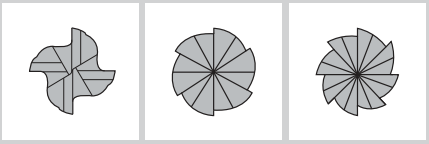
Pag. B 29

Smussatore
Chamfering Tool

Pag. B 33

INDICE ALFANUMERICO - *ALPHANUMERIC INDEX - ALPHANUMERISCHE INHALTSÜBERSICHT -*

4/6/8 Tagli
4/6/8 Cuttings



Pag. A 35

Dati Tecnici Fresatura
Milling Technical Data

Pag. A 57

FRESATURA
MILLING
FRÄSEN
FRAISAGE
FRESADO

Alesatori
Reamers

Pag. B 35

Distruggi Maschi
Tap Destroying Tool

Pag. B 39

Frese a Filettare
Threading Mills

Pag. B 41

Dati Tecnici Foratura e lavorazione fori
Drilling and machining of bores Technical Data

Pag. B 47

FORATURA
LAVORAZIONE FORI
DRILLING
MACHINING OF BORES
BOHREN
BEARBEITUNG VON BOHRUNGEN
PERÇAGE
USINAGE DES TROUS
TALADRAR
TRABAJO DE LOS AGUJEROS

INDEX ALPHANUMÉRIQUE - INDICE ALFANUMÉRICO

Pag. C 1

NOTE :

FRESE INTEGRALI IN METALLO DURO

SOLID CARBIDE MILLING / HM FRAESER / FRAISES EN CARBURE MONOBLOC /
FRESAS INTEGRALES EN METAL DURO

SAU
QUALITY TOOLS ENGINEERING

SIMBOLOGIA
SYMBOL
SYMBOLE
SYMBOLES

A

RIVESTIMENTI - COATED - BESCHICHTUNG - RECOUVREMENT

RIVESTIM. COATED **BLACK** — ***BLACK :*** ELEVATA DUREZZA E RESISTENZA AL CALORE, PER ALTE VELOCITA' DI TAGLIO.

HIGH DEGREE OF HARDNESS AND HEAT RESISTANCE, FOR MACHINING AT A HIGH CUTTING SPEED

RIVESTIM. COATED **GRAY** — ***GRAY :*** ELEVATA RESISTENZA ALL'USURA, MIGLIORE FINITURA, BASSO COEFFICENTE DI ATTRITO, ELEVATA TENACITA' ED ADERENZA AL SUBSTRATO.

HIGH RESISTANCE TO WEAR, BETTER FINISHING, LOW FRICTION COEFFICIENT, HIGH DEGREE OF TOUGHNESS AND SUBSTRATUM ADHESION

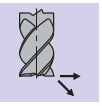
RIVESTIM. COATED **BLUES** — ***BLUES :*** ELEVATA DUREZZA E RESISTENZA AL CALORE, PER ALTE VELOCITA' DI TAGLIO.

HIGH DEGREE OF HARDNESS AND HEAT RESISTANCE, FOR MACHINING AT A HIGH CUTTING SPEED

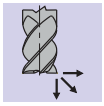
RIVESTIM. COATED **GOLD** — ***GOLD :*** ELEVATA RESISTENZA ALL'USURA, MIGLIORE FINITURA, BASSO COEFFICENTE DI ATTRITO, ELEVATA TENACITA' ED ADERENZA AL SUBSTRATO.
ADATTO PER LAVORAZIONI A SECCO

HIGH RESISTANCE TO WEAR, BETTER FINISHING, LOW FRICTION COEFFICIENT, HIGH DEGREE OF TOUGHNESS AND SUBSTRATUM ADHESION.
SUITABLE FOR DRY MACHINING

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

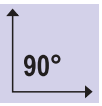


- *N2 DIREZIONI DI UTILIZZO POSSIBILI*
- *2 POSSIBLE USAGE ORIENTATION*
- *2 MÖGLICHE VORSCHUBRICHTUNG*
- *N2 ORIENTATIONS D'USAGE POSSIBLES*

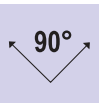


- *N3 DIREZIONI DI UTILIZZO POSSIBILI*
- *3 POSSIBLE USAGE ORIENTATION*
- *3 MÖGLICHE VORSCHUBRICHTUNG*
- *N3 ORIENTATIONS D'USAGE POSSIBLES*

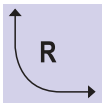
SPIGOLO FRESA - CORNER SHAPE - FRÄSERKANTE - ARETE FRAISE



- *90°*



- *ANGOLO IN TESTA 90°*
- *90° HEAD ANGLE*
- *KOPFWINKEL 90°*
- *ANGLE EN TETE 90°*



- *RAGGIATO*
- *RADIUS*
- *MIT ECKENRADIUS*
- *RADIAIRE*

DUREZZA MATERIALE - HARDNESS MATERIAL - MATERIALHÄRTE - DURETE MATERIAU

52 HRC - *52 HRC*

62 HRC - *62 HRC*

58 HRC - *58 HRC*

65 HRC - *65 HRC*

60 HRC - *60 HRC*

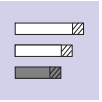
68 HRC - *68 HRC*

300 HB - *300 HB*

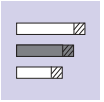
350 HB - *350 HB*

ALU
- *ALLUMINIO*
- *ALUMINIUM*
- *ALUMINIUM*
- *ALUMINIUM*

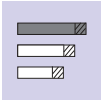
LUNGHEZZA FRESA - MILLING CUTTER LENGHT - FRÄSERLÄNGE - LONGUEUR DE LA FRAISE



- *CORTA*
- *SHORT*
- *KURZ*
- *COURTE*



- *MEDIA*
- *MEDIUM*
- *MITTEL*
- *MOYENNE*

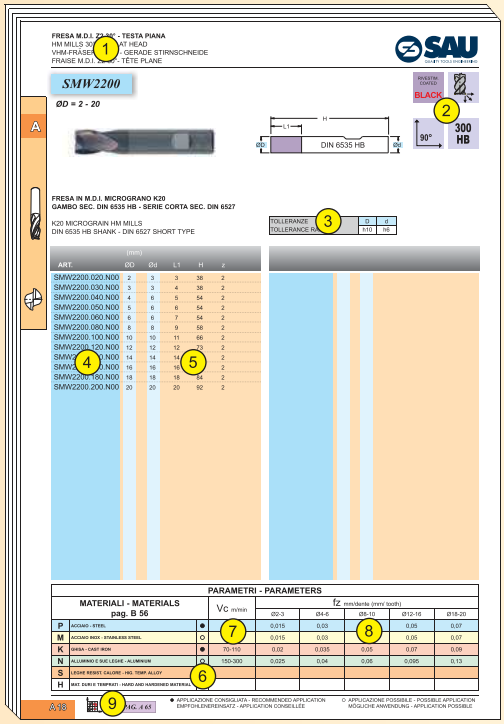


- *LUNGA*
- *LONG*
- *LANG*
- *LONGUE*

SIMBOLI GENERALI - GENERAL SYMBOLS - ALLGEMEINE SYMBOLE - SYMBOLES GÉNÉRAUX

- *PER LAVORAZIONI AD ALTA VELOCITA*
- *FOR HIGH SPEED MACHINING*
- *FÜR HOCHGESCHWINDIGKEITSBEARBEITUNGEN GEEIGNET*
- *POUR USINAGE À HAUTE VITESSE*

- *LAVORAZIONE A SECCO*
- *DRY MACHINING*
- *TROCKENBEARBEITUNG*
- *USINAGE A SEC*



1 = NUMERO TAGLIENTI E ANGOLO ELICA
2 = CARATTERISTICHE TECNICHE (PAG. A 4)
3 = TOLLERANZE COSTRUTTIVE
4 = ELENCO ARTICOLI
5 = MISURE E DATI
6 = MATERIALI LAVORABILI
7 = VELOCITÀ DI TAGLIO Vc, SECONDO I GRUPPI DI MATERIALE
8 = AVANZAMENTO DI BASE Fz, DA MOLTIPLICARE PER **KM**
9 = ULTERIORI DATI TECNICI E CONSIGLIO D'USO

1 = NUMBER OF FLUTES AND HELIX ANGLE
2 = TECHNICAL FEATURES (PAG. A 4)
3 = CONSTRUCTIVES TOLERANCE
4 = ITEM
5 = MEASURES AND DATA
6 = MACHINING MATERIALS
7 = VC CUTTING SPEED, ACCORDING TO MATERIAL GROUPS
8 = BASIC FEED RATE FZ0, TO BE MULTIPLIED BY KM
9 = FURTHER TECHNICAL DATA AND SUGGESTIONS

1 = ANZAHL SCHNEIDEN UND SPIRALWINKEL
2 = TECHNISCHE HAUPTMERKMALE (PAG. A 4)
3 = KONSTRUKTIONSTOLERANZEN
4 = ARTIKEL
5 = ABMESSUNGEN UND DATEN
6 = MATERIALGRUPPEN ANWENDUNG
7 = SCHNITTGESCHWINDIGKEIT VC, JE NACH MATERIALGRUPPEN
8 = GRUNDVORSCHUB FZ0, MIT KM ZU MULTIPLIZIEREN
9 = WEITERE TECHNISCHE DATEN UND TIPPS

1 = NOMBRE TRANCHANTS ET ANGLE HELICE
2 = CARACTERISTIQUES TECHNIQUES (PAG. A 4)
3 = TOLÉRANCE CONSTRUCTIVES
4 = ARTICLES
5 = DIMENSIONES ET DONNÉES
6 = MATERIAUX USINABLE
7 = VITESSE DE COUPE VC, SELÓN LES GROUPES DE MATERIAL
8 = FORMULES DE BASE FZ0, À MULTIPLIER POUR KM
9 = ULTÉRIEURES DONNÉES TECHNIQUE ET CONSEILLE D'USAGE

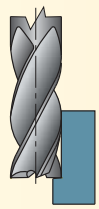
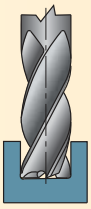
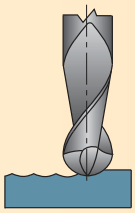
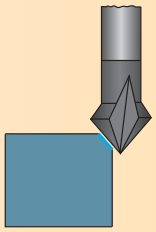
SAU
QUALITY TOOLS ENGINEERING

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

	ART.	LUNGHEZZA FRESA MILLING CUTTER LENGTH	ØD	z	HSC	RIVESTITO COATED	Materiali - Materials Pag. B 56 P	M	K	N	S	H	Pag.
2 TAGLI - 2 CUTTINGS													
	SMW2200		2-20	2		BLACK	●	○	●	○			A 10
	SMW2300		2-20	2		BLACK	●	○	●	○			A 11
	SMW2310		3-20	2						●			A 12
	ST2200		0,1-2	2		BLACK	●	○	●	○			A 13
	SM2120		0,3-20	2	●	GOLD	●					●	A 14
	ST2505		0,4-6	2	●	GOLD	●	●	○	●	○	○	A 15
	SMW2203		1-20	2		BLACK	●	●	●	●			A 16
	SM2323		3-20	2	●	BLACK	●	○	○			●	A 17
	SM2423		1-20	2	●	BLACK	○	○	○			●	A 18
	SM2523		3-10	2	●	GRAY	○	○	○			●	A 19
	SM2413		1-12	2			○			●			A 20
	ST2203		0,25-2	2		BLACK	●	●	●	○			A 21
	ST2503		0,4-6	2	●	GOLD	○	○	○	●	●	○	A 22
	SS230		3-20	2			○	○	○	○	○		A 23
3 TAGLI - 3 CUTTINGS													
	SMW3100		2-20	3		BLACK	●	○	●	●			A 26
	SMW3230		1-12	3	●	BLUES	●	●	●	○	○	●	A 27
	SMW3300		2-20	3		BLACK	●	○	●	○			A 28
	SM3300		1-20	3		BLACK	●	○	●	○			A 29
	SMW3402		2-20	3		BLACK	●	○	●	○			A 30
	SM3400		3-20	3	●	GRAY	●	●	●	●	●	●	A 31
	SM3410		6-25	3						●			A 32
	SM3423		3-20	3	●	GOLD	○					●	A 33

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

	ART.	LUNGHEZZA FRESA MILLING CUTTER LENGTH	ØD	z	HSC	RIVESTITO COATED	Materiali - Materials Pag. B 56 P	M	K	N	S	H	Pag.
4/6/8 TAGLI - 4/6/8 CUTTINGS													
	SMW4300		2-20	4		BLACK	●	○	●	○			A 36
	SM4300		1-20	4		BLACK	●	○	●	○			A 37
	SMW4400		3-20	4		BLACK	●	○	●	○			A 38
	SMW4401		4-25	4		BLACK	●	○	●	○	○	●	A 39
	SMW4402		2-20	4		BLACK	●	○	●	○			A 40
	SM4330		4-20	4	●	GRAY	●	○	○		○	●	A 41
	SMW4304		3-20	4		BLACK	●		●				A 42
	SMW3304		4-25	3-4-5-6		GRAY	●	●			●	○	A 43
	SMW4305		4-20	4		BLACK	●		●			●	A 44
	SM4120		1-20	4	●	GOLD	○					●	A 45
	SM4325		3-20	4		BLACK	○	○	○			●	A 46
	SM4205		2-16	4	●	BLACK	●	●	●			●	A 47
	SM4525		3-20	4		BLACK	○	○	○			●	A 48
	SM4425		6-16	4	●	BLACK	●	●	●			●	A 49
	SMW4403		3-20	4		BLACK	●	●	●	○			A 50
	SMW4503		3-20	4		BLACK	●	●	●	○			A 51
	SM6431		6-20	6-8	●	GRAY	●					●	A 52
	SMW6401		5-20	6-8	●	BLACK	●		●			●	A 53
	SM6525		6-20	6	●	GOLD	○					●	A 54
	SM4400		8-10	4		BLACK	○	○	○	○	○	○	A 55

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

NOTE :

FRESE A 2 TAGLI

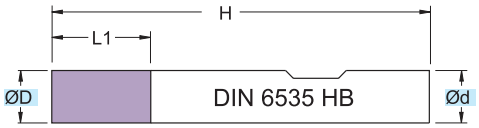
MILLING 2 CUTTINGS / ZWEISCHNEIDER / FRAISES A 2 COUPES / FRESAS DE 2 FILOS

SAU
QUALITY TOOLS ENGINEERING

SMW2200

RIVESTIM. COATED **BLACK**

ØD = 2 - 20



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE CORTA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 SHORT TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3	Ø4-6	Ø8-10	Ø12-16	Ø18-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

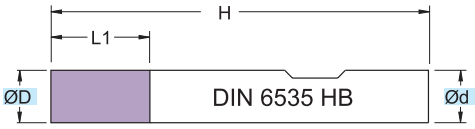
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW2300

ØD = 2 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

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

PARAMETRI - PARAMETERS

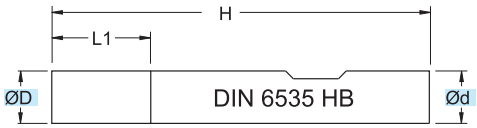
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3,5	Ø4-6	Ø7-10	Ø11,7-15,7	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW2310

ØD = 3 - 20



90°

ALU

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE CORTA SEC. DIN 6527

K20 MICROGRAIN M.D.I. MILLS
DIN 6535 HB SHANK - DIN 6527 SHORT TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW2310.030.N00	3	6	8	57	2
SMW2310.040.N00	4	6	11	57	2
SMW2310.050.N00	5	6	13	57	2
SMW2310.060.N00	6	6	13	57	2
SMW2310.080.N00	8	8	19	63	2
SMW2310.100.N00	10	10	22	72	2
SMW2310.120.N00	12	12	26	83	2
SMW2310.140.N00	14	14	26	83	2
SMW2310.160.N00	16	16	32	92	2
SMW2310.180.N00	18	18	32	92	2
SMW2310.200.N00	20	20	38	104	2

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL							
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	120-600	0,03	0,045	0,07	0,11	0,15
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

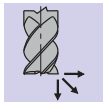
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

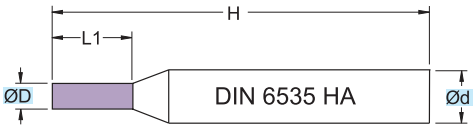
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

ST2200

ØD = 0,1 - 2

RIVESTIM. COATED **BLACK**





90°

300 HB

MINIFRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE CORTA SEC. DIN 6527

K20 MICROGRAIN HM MINIMILLS
CILINDRICAL SHANK HA - DIN 6527 SHORT TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
ST2200.010.N00	0,10	3	0,3	38	2
ST2200.015.N00	0,15	3	0,3	38	2
ST2200.020.N00	0,20	3	0,5	38	2
ST2200.025.N00	0,25	3	0,5	38	2
ST2200.030.N00	0,30	3	1,0	38	2
ST2200.040.N00	0,40	3	1,0	38	2
ST2200.050.N00	0,50	3	1,5	38	2
ST2200.060.N00	0,60	3	1,5	38	2
ST2200.070.N00	0,70	3	2,0	38	2
ST2200.080.N00	0,80	3	2,0	38	2
ST2200.090.N00	0,90	3	2,5	38	2
ST2200.100.N00	1,00	3	3,0	38	2
ST2200.110.N00	1,10	3	3,0	38	2
ST2200.120.N00	1,20	3	4,0	38	2
ST2200.140.N00	1,40	3	4,0	38	2
ST2200.150.N00	1,50	3	4,0	38	2
ST2200.160.N00	1,60	3	4,0	38	2
ST2200.170.N00	1,70	3	4,0	38	2
ST2200.180.N00	1,80	3	5,0	38	2
ST2200.190.N00	1,90	3	5,0	38	2
ST2200.200.N00	2,00	3	5,0	38	2

PARAMETRI - PARAMETERS

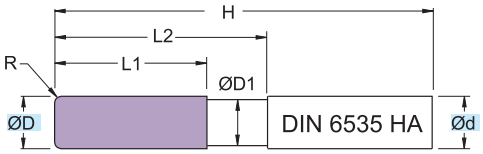
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø0,1-0,3	Ø0,4-0,6	Ø0,7-0,9	Ø1-1,5	Ø1,6-2
P	ACCIAIO - STEEL	●	65-100	0,003	0,006	0,01	0,015	0,02
M	ACCIAIO INOX - STAINLESS STEEL	O	35-55	0,003	0,006	0,01	0,015	0,02
K	GHISA - CAST IRON	●	80-120	0,003	0,006	0,01	0,015	0,02
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	160-400	0,004	0,007	0,015	0,02	0,03
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM2120

ØD = 0,3 - 20



RIVESTIM. COATED GOLD

R

68 HRC

HSC

FRESA IN M.D.I. MICROGRANO K09 (0.3 µm)
GAMBO CILINDRICO HA - SERIE CORTA SEC. DIN 6527

K09 MICROGRAIN HM MILLS (0,3 µm)
CILINDRICAL SHANK HA - DIN 6527 SHORT TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
SM2120.003.R000	0,3	3	/	0,45	/	40	/	2
SM2120.004.R000	0,4	3	/	0,60	/	40	/	2
SM2120.005.R005	0,5	3	/	0,70	/	40	0,05	2
SM2120.006.R005	0,6	3	/	0,90	/	40	0,05	2
SM2120.008.R005	0,8	3	/	1,20	/	40	0,05	2
SM2120.010.R010	1,0	3	/	1,50	/	40	0,10	2
SM2120.015.R010	1,5	3	/	2,20	/	40	0,10	2
SM2120.020.R010	2,0	3	1,9	3,0	6	40	0,10	2
SM2120.025.R010	2,5	3	2,4	4,0	6	40	0,10	2
SM2120.030.R010	3,0	6	2,9	4,0	7	45	0,10	2
SM2120.035.R010	3,5	6	3,3	5,0	9	45	0,10	2
SM2120.040.R010	4,0	6	3,8	5,0	9	45	0,10	2
SM2120.045.R010	4,5	6	4,3	6,0	10	45	0,10	2
SM2120.050.R020	5,0	6	4,8	6,0	11	50	0,20	2
SM2120.060.R020	6,0	6	5,8	7,0	14	50	0,20	2
SM2120.080.R020	8,0	8	7,8	9,0	18	60	0,20	2
SM2120.100.R020	10,0	10	9,7	12,0	25	75	0,20	2
SM2120.120.R030	12,0	12	11,7	15,0	30	75	0,30	2
SM2120.160.R030	16,0	16	15,7	18,0	38	90	0,30	2
SM2120.200.R030	20,0	20	19,7	24,0	45	100	0,30	2

PARAMETRI - PARAMETERS

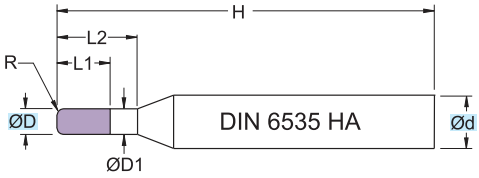
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø0,3-1	Ø1,5-4,5	Ø5-8	Ø10-12	Ø16-20
P	ACCIAIO - STEEL	●	160-180	0,01	0,04	0,12	0,2	0,25
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	80-150	0,005	0,02	0,08	0,13	0,15

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

ST2505

ØD = 0,4 - 6



RIVESTIM. COATED GOLD

R

52 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 μm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 μm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
ST2505.041.R005	0,4	3	0,38	0,5	2	55	0,05	2
ST2505.042.R005	0,4	3	0,38	0,5	4	55	0,05	2
ST2505.051.R005	0,5	3	0,48	0,6	3	55	0,05	2
ST2505.052.R005	0,5	3	0,48	0,6	5	55	0,05	2
ST2505.061.R006	0,6	4	0,58	0,8	2	55	0,06	2
ST2505.062.R006	0,6	4	0,58	0,8	4	55	0,06	2
ST2505.063.R006	0,6	4	0,58	0,8	6	55	0,06	2
ST2505.081.R008	0,8	4	0,77	1,0	4	55	0,08	2
ST2505.082.R008	0,8	4	0,77	1,0	6	55	0,08	2
ST2505.083.R008	0,8	4	0,77	1,0	8	55	0,08	2
ST2505.084.R008	0,8	4	0,77	1,0	10	55	0,08	2
ST2505.101.R010	1,0	4	0,95	1,2	5	55	0,10	2
ST2505.102.R010	1,0	4	0,95	1,2	10	55	0,10	2
ST2505.103.R010	1,0	4	0,95	1,2	15	55	0,10	2
ST2505.104.R010	1,0	4	0,95	1,2	20	55	0,10	2
ST2505.105.R010	1,0	4	0,95	1,2	25	60	0,10	2
ST2505.121.R012	1,2	4	1,15	1,4	6	55	0,12	2
ST2505.122.R012	1,2	4	1,15	1,4	12	55	0,12	2
ST2505.123.R012	1,2	4	1,15	1,4	18	55	0,12	2
ST2505.124.R012	1,2	4	1,15	1,4	25	60	0,12	2
ST2505.151.R015	1,5	4	1,44	1,8	4	55	0,15	2
ST2505.152.R015	1,5	4	1,44	1,8	8	55	0,15	2
ST2505.153.R015	1,5	4	1,44	1,8	12	55	0,15	2
ST2505.154.R015	1,5	4	1,44	1,8	16	55	0,15	2
ST2505.155.R015	1,5	4	1,44	1,8	20	55	0,15	2
ST2505.156.R015	1,5	4	1,44	1,8	25	60	0,15	2

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
ST2505.201.R020	2,0	4	1,92	2,0	5	65	0,20	2
ST2505.202.R020	2,0	4	1,92	2,0	10	65	0,20	2
ST2505.203.R020	2,0	4	1,92	2,0	15	65	0,20	2
ST2505.204.R020	2,0	4	1,92	2,0	20	65	0,20	2
ST2505.205.R020	2,0	4	1,92	2,0	25	75	0,20	2
ST2505.206.R020	2,0	4	1,92	2,0	30	75	0,20	2
ST2505.301.R030	3,0	4	2,90	3,0	5	65	0,30	2
ST2505.302.R030	3,0	4	2,90	3,0	10	65	0,30	2
ST2505.303.R030	3,0	4	2,90	3,0	15	65	0,30	2
ST2505.304.R030	3,0	4	2,90	3,0	20	65	0,30	2
ST2505.305.R030	3,0	4	2,90	3,0	25	75	0,30	2
ST2505.306.R030	3,0	4	2,90	3,0	30	75	0,30	2
ST2505.401.R030	4,0	6	3,90	4,0	10	65	0,30	2
ST2505.402.R030	4,0	6	3,90	4,0	15	65	0,30	2
ST2505.403.R030	4,0	6	3,90	4,0	20	65	0,30	2
ST2505.404.R030	4,0	6	3,90	4,0	25	75	0,30	2
ST2505.405.R030	4,0	6	3,90	4,0	30	75	0,30	2
ST2505.501.R030	5,0	6	4,90	5,0	10	65	0,30	2
ST2505.502.R030	5,0	6	4,90	5,0	20	65	0,30	2
ST2505.503.R030	5,0	6	4,90	5,0	30	75	0,30	2
ST2505.504.R030	5,0	6	4,90	5,0	40	90	0,30	2
ST2505.601.R030	6,0	6	5,90	6,0	10	65	0,30	2
ST2505.602.R030	6,0	6	5,90	6,0	20	65	0,30	2
ST2505.603.R030	6,0	6	5,90	6,0	30	75	0,30	2
ST2505.604.R030	6,0	6	5,90	6,0	40	90	0,30	2
ST2505.605.R030	6,0	6	5,90	6,0	50	90	0,30	2

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø0,4-0,6	Ø0,8-1	Ø1,2-2	Ø3-4	Ø5-6
P	ACCIAIO - STEEL	●	50-100	0,003	0,006	0,01	0,03	0,08
M	ACCIAIO INOX - STAINLESS STEEL	●	25-55	0,003	0,006	0,01	0,03	0,08
K	GHISA - CAST IRON	O	60-120	0,003	0,006	0,015	0,04	0,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	160-400	0,004	0,007	0,02	0,08	0,15
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	O	20-40	0,003	0,005	0,008	0,02	0,07
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	O	20-50	0,003	0,005	0,008	0,02	0,07

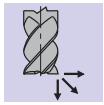
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

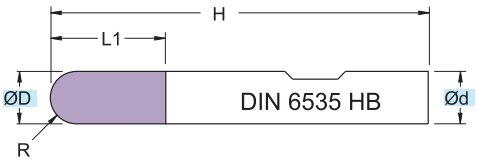
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW2203

ØD = 1 - 20

RIVESTIM. COATED **BLACK**





R

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE CORTA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6527 SHANK HB - DIN 6527 SHORT TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SMW2203.010.S005	1,0	6	3	50	0,5	2
SMW2203.020.S010	2,0	6	4	50	1,0	2
SMW2203.025.S012	2,5	6	4	50	1,25	2
SMW2203.030.S015	3,0	6	5	50	1,5	2
SMW2203.035.S017	3,5	6	5	50	1,75	2
SMW2203.040.S020	4,0	6	6	54	2,0	2
SMW2203.045.S022	4,5	6	6	54	2,25	2
SMW2203.050.S025	5,0	6	7	54	2,5	2
SMW2203.060.S030	6,0	6	9	54	3,0	2
SMW2203.080.S040	8,0	8	12	58	4,0	2
SMW2203.100.S050	10,0	10	14	66	5,0	2
SMW2203.120.S060	12,0	12	14	73	6,0	2
SMW2203.140.S070	14,0	14	16	75	7,0	2
SMW2203.160.S080	16,0	16	18	82	8,0	2
SMW2203.180.S090	18,0	18	20	88	9,0	2
SMW2203.200.S100	20,0	20	22	92	10,0	2

PARAMETRI - PARAMETERS

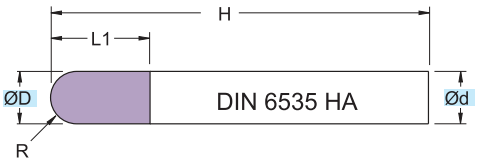
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø1-3,5	Ø4-6	Ø8-10	Ø12-16	Ø18-20
P	ACCIAIO - STEEL	●	50-200	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	●	50-150	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	160-250	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM2323

ØD = 3 - 20



RIVESTIM. COATED **BLACK**

R

65 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE MEDIA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SM2323.030.S015	3	3	6	50	1,5	2
SM2323.040.S020	4	4	8	54	2,0	2
SM2323.050.S025	5	5	10	54	2,5	2
SM2323.060.S030	6	6	12	54	3,0	2
SM2323.080.S040	8	8	14	58	4,0	2
SM2323.100.S050	10	10	18	66	5,0	2
SM2323.120.S060	12	12	22	73	6,0	2
SM2323.140.S070	14	14	26	75	7,0	2
SM2323.160.S080	16	16	30	82	8,0	2
SM2323.180.S090	18	18	34	84	9,0	2
SM2323.200.S100	20	20	38	92	10,0	2

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-5	Ø6-8	Ø10-12	Ø14-16	Ø18-20
P	ACCIAIO - STEEL	●	50-200	0,4	0,6	0,7	0,8	0,9
M	ACCIAIO INOX - STAINLESS STEEL	O	50-150	0,3	0,4	0,45	0,55	0,7
K	GHISA - CAST IRON	O	150-230	0,4	0,65	0,8	0,9	1,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,2	0,35	0,45	0,5	0,55

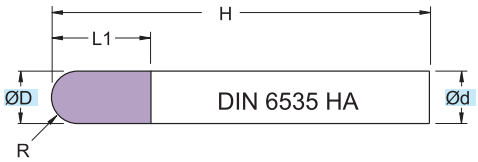
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM2423

ØD = 1 - 20

RIVESTIM. COATED **BLACK**



R

65 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SM2423.010.S005	1,0	3	1,5	50	0,5	2
SM2423.015.S007	1,5	3	2,5	50	0,75	2
SM2423.020.S010	2,0	3	3,0	50	1,0	2
SM2423.025.S012	2,5	3	4,0	50	1,25	2
SM2423.030.S015	3,0	3	6,0	75	1,5	2
SM2423.040.S020	4,0	4	8,0	75	2,0	2
SM2423.050.S025	5,0	5	10,0	75	2,5	2
SM2423.060.S030	6,0	6	12,0	100	3,0	2
SM2423.080.S040	8,0	8	14,0	100	4,0	2
SM2423.100.S050	10,0	10	18,0	100	5,0	2
SM2423.120.S060	12,0	12	22,0	150	6,0	2
SM2423.140.S070	14,0	14	26,0	150	7,0	2
SM2423.160.S080	16,0	16	30,0	150	8,0	2
SM2423.180.S090	18,0	18	34,0	150	9,0	2
SM2423.200.S100	20,0	20	38,0	150	10,0	2

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø1-3	Ø4-6	Ø8-10	Ø12-16	Ø18-20
P	ACCIAIO - STEEL	O	50-200	0,4	0,6	0,7	0,8	0,9
M	ACCIAIO INOX - STAINLESS STEEL	O	50-150	0,3	0,4	0,45	0,55	0,7
K	GHISA - CAST IRON	O	150-230	0,4	0,65	0,8	0,9	1,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,2	0,35	0,45	0,5	0,55

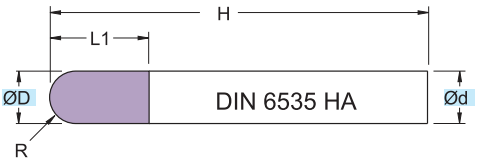
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM2523

ØD = 3 - 10

RIVESTIM. COATED **GRAY**



R

60 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SM2523.030.S015	3	6	5	75	1,5	2
SM2523.031.S015	3	6	5	100	1,5	2
SM2523.040.S020	4	6	6	75	2,0	2
SM2523.041.S020	4	6	6	100	2,0	2
SM2523.050.S025	5	6	8	75	2,5	2
SM2523.051.S025	5	6	8	100	2,5	2
SM2523.060.S030	6	6	10	75	3,0	2
SM2523.061.S030	6	6	10	100	3,0	2
SM2523.080.S040	8	10	12	85	4,0	2
SM2523.081.S040	8	10	12	150	4,0	2
SM2523.100.S050	10	12	18	100	5,0	2
SM2523.101.S050	10	12	18	150	5,0	2

PARAMETRI - PARAMETERS

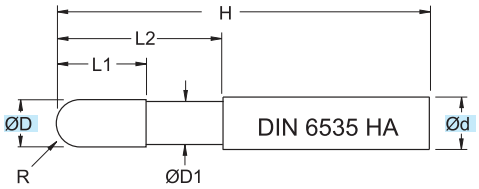
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5	Ø6	Ø8	Ø10
P	ACCIAIO - STEEL	O	100-250	0,03	0,05	0,07	0,08	0,1
M	ACCIAIO INOX - STAINLESS STEEL	O	90-230	0,03	0,04	0,05	0,07	0,07
K	GHISA - CAST IRON	O	150-230	0,04	0,07	0,08	0,1	0,12
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,02	0,04	0,05	0,06	0,07

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM2413

ØD = 1 - 12



R

ALU

FRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
SM2413.010.S050	1	6	0,9	2	15	60	0,5	2
SM2413.020.S100	2	6	1,8	4	20	60	1,0	2
SM2413.030.S150	3	6	2,8	6	25	70	1,5	2
SM2413.040.S200	4	6	3,7	8	25	70	2,0	2
SM2413.050.S250	5	6	4,6	10	25	70	2,5	2
SM2413.060.S300	6	6	5,5	12	35	80	3,0	2
SM2413.080.S400	8	8	7,4	16	35	80	4,0	2
SM2413.100.S500	10	10	9,2	20	45	90	5,0	2
SM2413.120.S600	12	12	11,0	24	50	100	6,0	2

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø1-2	Ø3-4	Ø5-6	Ø8-10	Ø12
P	ACCIAIO - STEEL	O	50-200	0,3	0,4	0,5	0,6	0,8
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	100-400	0,3	0,4	0,6	0,8	1
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

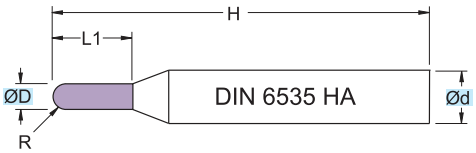
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

ST2203

ØD = 0,25 - 2

RIVESTIM. COATED **BLACK**



R

300 HB

MINIFRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE CORTA SEC. DIN 6527

K20 MICROGRAIN HM MINIMILLS
CILINDRICAL SHANK HA - DIN 6527 SHORT TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	L1	H	R	z
ST2203.025.S012	0,25	3	0,5	38	0,125	2
ST2203.030.S015	0,30	3	1,0	38	0,15	2
ST2203.040.S020	0,40	3	1,0	38	0,20	2
ST2203.050.S025	0,50	3	1,5	38	0,25	2
ST2203.060.S030	0,60	3	1,5	38	0,30	2
ST2203.070.S035	0,70	3	2,0	38	0,35	2
ST2203.080.S040	0,80	3	2,0	38	0,40	2
ST2203.090.S045	0,90	3	2,5	38	0,45	2
ST2203.100.S050	1,00	3	3,0	38	0,50	2
ST2203.110.S055	1,10	3	3,0	38	0,55	2
ST2203.120.S060	1,20	3	3,0	38	0,60	2
ST2203.140.S070	1,40	3	4,0	38	0,70	2
ST2203.150.S075	1,50	3	4,0	38	0,75	2
ST2203.160.S080	1,60	3	5,0	38	0,80	2
ST2203.180.S090	1,80	3	5,0	38	0,90	2
ST2203.200.S100	2,00	3	5,0	38	1,00	2

PARAMETRI - PARAMETERS

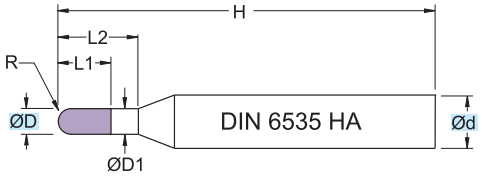
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth)				
				Ø0,25-0,5	Ø0,6-0,8	Ø0,9-1,1	Ø1,2-1,5	Ø1,6-2,0
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	●	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

ST2503

ØD = 0,4 - 6



RIVESTIM. COATED GOLD

R

60 HRC

HSC

MINIFRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MINIMILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
ST2503.041.S020	0,4	3	0,38	0,5	2	55	0,20	2
ST2503.042.S020	0,4	3	0,38	0,5	4	55	0,20	2
ST2503.051.S025	0,5	3	0,48	0,6	3	55	0,25	2
ST2503.052.S025	0,5	3	0,48	0,6	5	55	0,25	2
ST2503.061.S030	0,6	4	0,58	0,8	2	55	0,30	2
ST2503.062.S030	0,6	4	0,58	0,8	4	55	0,30	2
ST2503.063.S030	0,6	4	0,58	0,8	6	55	0,30	2
ST2503.081.S040	0,8	4	0,77	1,0	4	55	0,40	2
ST2503.082.S040	0,8	4	0,77	1,0	6	55	0,40	2
ST2503.083.S040	0,8	4	0,77	1,0	8	55	0,40	2
ST2503.084.S040	0,8	4	0,77	1,0	10	55	0,40	2
ST2503.101.S050	1,0	4	0,95	1,2	5	55	0,50	2
ST2503.102.S050	1,0	4	0,95	1,2	10	55	0,50	2
ST2503.103.S050	1,0	4	0,95	1,2	15	55	0,50	2
ST2503.104.S050	1,0	4	0,95	1,2	20	55	0,50	2
ST2503.105.S050	1,0	4	0,95	1,2	25	60	0,50	2
ST2503.121.S060	1,2	4	1,15	1,4	6	55	0,60	2
ST2503.122.S060	1,2	4	1,15	1,4	12	55	0,60	2
ST2503.123.S060	1,2	4	1,15	1,4	18	55	0,60	2
ST2503.124.S060	1,2	4	1,15	1,4	25	60	0,60	2
ST2503.151.S075	1,5	4	1,44	1,8	4	55	0,75	2
ST2503.152.S075	1,5	4	1,44	1,8	8	55	0,75	2
ST2503.153.S075	1,5	4	1,44	1,8	12	55	0,75	2
ST2503.154.S075	1,5	4	1,44	1,8	16	55	0,75	2
ST2503.155.S075	1,5	4	1,44	1,8	20	55	0,75	2
ST2503.156.S075	1,5	4	1,44	1,8	25	60	0,75	2

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
ST2503.201.S100	2,0	4	1,92	2,0	5	65	1,00	2
ST2503.202.S100	2,0	4	1,92	2,0	10	65	1,00	2
ST2503.203.S100	2,0	4	1,92	2,0	15	65	1,00	2
ST2503.204.S100	2,0	4	1,92	2,0	20	65	1,00	2
ST2503.205.S100	2,0	4	1,92	2,0	25	75	1,00	2
ST2503.206.S100	2,0	4	1,92	2,0	30	75	1,00	2
ST2503.301.S150	3,0	4	2,90	3,0	5	65	1,50	2
ST2503.302.S150	3,0	4	2,90	3,0	10	65	1,50	2
ST2503.303.S150	3,0	4	2,90	3,0	15	65	1,50	2
ST2503.304.S150	3,0	4	2,90	3,0	20	65	1,50	2
ST2503.305.S150	3,0	4	2,90	3,0	25	75	1,50	2
ST2503.306.S150	3,0	4	2,90	3,0	30	75	1,50	2
ST2503.401.S200	4,0	6	3,90	4,0	10	65	2,00	2
ST2503.402.S200	4,0	6	3,90	4,0	15	65	2,00	2
ST2503.403.S200	4,0	6	3,90	4,0	20	65	2,00	2
ST2503.404.S200	4,0	6	3,90	4,0	25	75	2,00	2
ST2503.405.S200	4,0	6	3,90	4,0	30	75	2,00	2
ST2503.501.S250	5,0	6	4,90	5,0	10	65	2,50	2
ST2503.502.S250	5,0	6	4,90	5,0	20	65	2,50	2
ST2503.503.S250	5,0	6	4,90	5,0	30	75	2,50	2
ST2503.504.S250	5,0	6	4,90	5,0	40	90	2,50	2
ST2503.601.S300	6,0	6	5,90	6,0	10	65	3,00	2
ST2503.602.S300	6,0	6	5,90	6,0	20	65	3,00	2
ST2503.603.S300	6,0	6	5,90	6,0	30	75	3,00	2
ST2503.604.S300	6,0	6	5,90	6,0	40	90	3,00	2
ST2503.605.S300	6,0	6	5,90	6,0	50	90	3,00	2

PARAMETRI - PARAMETERS

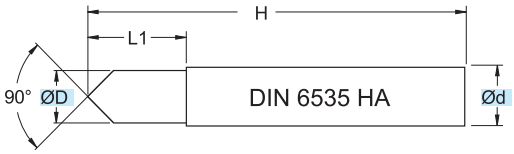
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth)				
				Ø0,4-0,5	Ø0,6-0,8	Ø1-2	Ø3-4	Ø5-6
P	ACCIAIO - STEEL	O	50-100	0,003	0,006	0,01	0,03	0,08
M	ACCIAIO INOX - STAINLESS STEEL	O	25-55	0,003	0,006	0,01	0,03	0,08
K	GHISA - CAST IRON	O	60-120	0,003	0,006	0,015	0,04	0,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	100-150	0,004	0,007	0,03	0,08	0,15
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	●	20-40	0,003	0,005	0,008	0,02	0,07
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	O	20-50	0,003	0,005	0,008	0,02	0,07

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SS230

ØD = 3 - 20



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) 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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	O	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,01	0,02	0,03	0,04	0,05
K	GHISA - CAST IRON	O	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	O	20-60	0,01	0,02	0,03	0,04	0,05
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

NOTE :

FRESE A 3 TAGLI

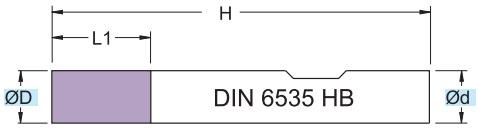
MILLING 3 CUTTINGS / DREISCHNEIDER / FRAISES A 3 COUPES /
FRESAS DE 3 FILOS

SAU
QUALITY TOOLS ENGINEERING

SMW3100

ØD = 2 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE CORTA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 SHORT TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SM3100.020.N00	2	6	4	38	3
SM3100.030.N00	3	6	5	38	3
SM3100.040.N00	4	6	7	38	3
SM3100.050.N00	5	6	8	38	3
SM3100.060.N00	6	6	8	38	3
SM3100.080.N00	8	8	11	43	3
SM3100.100.N00	10	10	13	50	3
SM3100.120.N00	12	12	15	55	3
SM3100.160.N00	16	16	18	62	3
SM3100.200.N00	20	20	22	75	3

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3	Ø4-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

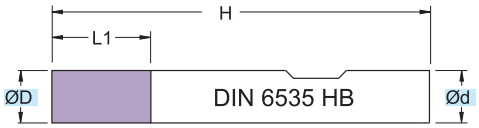
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SMW3230

ØD = 1 - 12

RIVESTIM. COATED
BLUES



90°

58 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO SEC. DIN 6535 HB - SERIE CORTA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
DIN 6535 HB SHANK - DIN 6527 SHORT TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW3230.010.N00	1	6	3	50	3
SMW3230.020.N00	2	6	4	50	3
SMW3230.030.N00	3	6	5	50	3
SMW3230.040.N00	4	6	7	50	3
SMW3230.050.N00	5	6	8	50	3
SMW3230.060.N00	6	6	8	50	3
SMW3230.070.N00	7	8	11	57	3
SMW3230.080.N00	8	8	11	57	3
SMW3230.090.N00	9	10	15	63	3
SMW3230.100.N00	10	10	15	63	3
SMW3230.120.N00	12	12	21	72	3

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø1-2	Ø3-5	Ø6-7	Ø8-9	Ø10-12
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	●	40-80	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	O	30-80	0,015	0,03	0,04	0,05	0,07
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	80-180	0,015	0,03	0,04	0,05	0,07

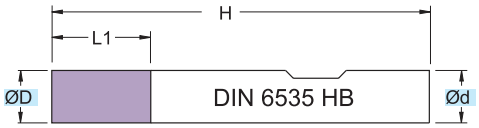
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW3300

ØD = 2 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 MEDIUM TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW3300.020.N00	2	3	6	38	3
SMW3300.030.N00	3	3	7	38	3
SMW3300.040.N00	4	6	8	57	3
SMW3300.050.N00	5	6	10	57	3
SMW3300.060.N00	6	6	10	57	3
SMW3300.080.N00	8	8	16	63	3
SMW3300.100.N00	10	10	19	72	3
SMW3300.120.N00	12	12	22	83	3
SMW3300.140.N00	14	14	22	83	3
SMW3300.160.N00	16	16	26	92	3
SMW3300.180.N00	18	18	26	92	3
SMW3300.200.N00	20	20	32	104	3

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3	Ø4-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

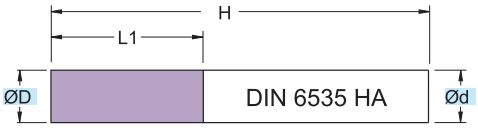
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM3300

ØD = 1 - 20

RIVESTIM. COATED
BLACK



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
CILINDRICAL SHANK HA - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SM3300.010.N00	1,00	3	3	38	3
SM3300.015.N00	1,50	3	5	38	3
SM3300.020.N00	2,00	3	7	38	3
SM3300.025.N00	2,50	3	7	38	3
SM3300.030.N00	3,00	3	8	38	3
SM3300.035.N00	3,50	4	11	50	3
SM3300.040.N00	4,00	4	11	50	3
SM3300.045.N00	4,50	5	11	50	3
SM3300.050.N00	5,00	5	10	50	3
SM3300.055.N00	5,50	6	10	50	3
SM3300.060.N00	6,00	6	10	57	3
SM3300.067.N00	6,75	8	13	63	3
SM3300.070.N00	7,00	8	13	63	3
SM3300.077.N00	7,75	8	16	63	3
SM3300.080.N00	8,00	8	16	63	3
SM3300.087.N00	8,70	10	16	72	3
SM3300.090.N00	9,00	10	16	72	3
SM3300.097.N00	9,70	10	19	72	3
SM3300.100.N00	10,00	10	19	72	3
SM3300.110.N00	11,00	12	19	72	3
SM3300.117.N00	11,70	12	22	83	3
SM3300.120.N00	12,00	12	22	83	3
SM3300.137.N00	13,70	14	22	83	3
SM3300.140.N00	14,00	14	22	83	3
SM3300.157.N00	15,70	16	26	83	3
SM3300.160.N00	16,00	16	26	83	3
SM3300.177.N00	17,70	18	26	92	3
SM3300.180.N00	18,00	18	26	92	3
SM3300.197.N00	19,70	20	32	104	3
SM3300.200.N00	20,00	20	32	104	3

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø1-3,5	Ø4-6,75	Ø7-10	Ø11-15,7	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

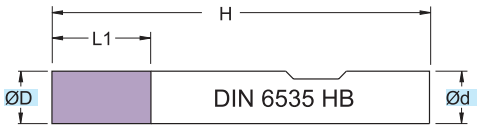
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW3402

ØD = 2 - 20

RIVESTIM. COATED
BLACK



90°

350 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	Fase	z
SMW3402.020.N00	2	6	8	57	0,05	3
SMW3402.030.N00	3	6	14	57	0,05	3
SMW3402.040.N00	4	6	18	57	0,10	3
SMW3402.050.N00	5	6	20	57	0,10	3
SMW3402.060.N00	6	6	22	57	0,10	3
SMW3402.080.N00	8	8	30	63	0,15	3
SMW3402.100.N00	10	10	33	72	0,15	3
SMW3402.120.N00	12	12	34	83	0,20	3
SMW3402.160.N00	16	16	38	92	0,20	3
SMW3402.200.N00	20	20	47	104	0,30	3

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3	Ø4-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	●	60-150	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	90-130	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-500	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM3400

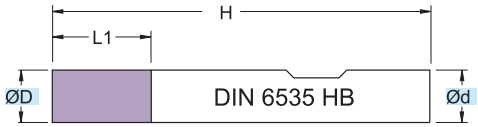
ØD = 3 - 20

RIVESTIM. COATED **GRAY**

90°

52 HRC

HSC



FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	Fase	z
SM3400.030.N00	3	6	8	57	0,05	3
SM3400.040.N00	4	6	11	57	0,10	3
SM3400.050.N00	5	6	13	57	0,10	3
SM3400.060.N00	6	6	13	57	0,10	3
SM3400.070.N00	7	8	16	63	0,15	3
SM3400.080.N00	8	8	19	63	0,15	3
SM3400.090.N00	9	10	19	72	0,15	3
SM3400.100.N00	10	10	22	72	0,15	3
SM3400.120.N00	12	12	26	83	0,20	3
SM3400.160.N00	16	16	32	92	0,20	3
SM3400.200.N00	20	20	38	104	0,30	3

PARAMETRI - PARAMETERS

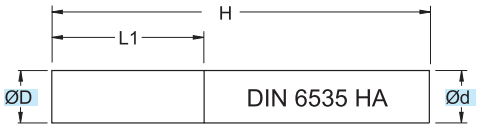
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5-6	Ø7-9	Ø10-12	Ø16-20
P	ACCIAIO - STEEL	●	50-150	0,03	0,04	0,05	0,06	0,08
M	ACCIAIO INOX - STAINLESS STEEL	●	100-200	0,03	0,04	0,045	0,055	0,07
K	GHISA - CAST IRON	●	150-230	0,04	0,065	0,08	0,095	0,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	150-450	0,04	0,06	0,07	0,09	0,11
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	●	30-60	0,01	0,02	0,03	0,035	0,04
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	40-100	0,01	0,02	0,03	0,04	0,05

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM3410

ØD = 6 - 25



90°

ALU

FRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SM3410.060.N00	6	6	16	60	3
SM3410.080.N00	8	8	25	78	3
SM3410.100.N00	10	10	28	78	3
SM3410.120.N00	12	12	32	89	3
SM3410.140.N00	14	14	32	89	3
SM3410.160.N00	16	16	36	96	3
SM3410.200.N00	20	20	45	111	3
SM3410.250.N00	25	25	50	126	3

PARAMETRI - PARAMETERS

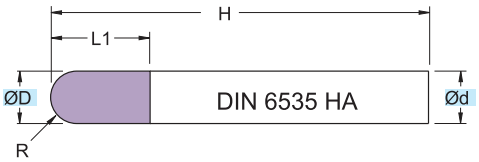
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø6	Ø8-10	Ø12-14	Ø16-20	Ø25
P	ACCIAIO - STEEL							
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	300-700	0,03	0,045	0,07	0,11	0,15
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM3423

ØD = 3 - 20



RIVESTIM. COATED GOLD

R

65 HRC

HSC

MINIFRESA IN M.D.I. MICROGRANO K09 (0.3 µm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K09 MICROGRAIN HM MINIMILLS (0,3 µm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SM3423.030.S015	3	6	8	60	1,5	3
SM3423.040.S020	4	6	8	70	2,0	3
SM3423.050.S025	5	6	10	80	2,5	3
SM3423.060.S030	6	6	12	90	3,0	3
SM3423.080.S040	8	8	14	100	4,0	3
SM3423.100.S050	10	10	18	100	5,0	3
SM3423.120.S060	12	12	22	110	6,0	3
SM3423.160.S080	16	16	30	140	8,0	3
SM3423.200.S100	20	20	38	160	10,0	3

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5-6	Ø8	Ø10-12	Ø16-20
P	ACCIAIO - STEEL	O	160-180	0,025	0,085	0,16	0,18	0,20
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	80-150	0,015	0,05	0,09	0,13	0,15

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

NOTE :

FRESE A 4 TAGLI

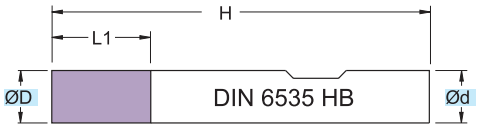
MILLING 4 CUTTINGS / VIERSCHNEIDER / FRAISES A 4 COUPES /
FRESAS DE 4 FILOS

SAU
QUALITY TOOLS ENGINEERING

SMW4300

ØD = 2 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 MEDIUM TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW4300.020.N00	2	3	7	38	4
SMW4300.030.N00	3	3	8	38	4
SMW4300.040.N00	4	6	11	57	4
SMW4300.050.N00	5	6	13	57	4
SMW4300.060.N00	6	6	13	57	4
SMW4300.080.N00	8	8	19	63	4
SMW4300.100.N00	10	10	22	72	4
SMW4300.120.N00	12	12	26	83	4
SMW4300.140.N00	14	14	26	83	4
SMW4300.160.N00	16	16	32	92	4
SMW4300.180.N00	18	18	32	92	4
SMW4300.200.N00	20	20	38	104	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3	Ø4-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

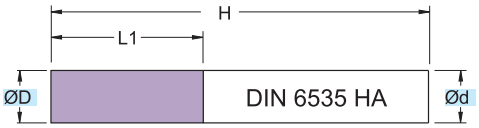
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM4300

ØD = 1 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
CILINDRICAL SHANK HA - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SM4300.010.N00	1,0	3	3	38	4
SM4300.015.N00	1,5	3	5	38	4
SM4300.020.N00	2,0	3	7	38	4
SM4300.025.N00	2,5	3	7	38	4
SM4300.030.N00	3,0	3	8	38	4
SM4300.035.N00	3,5	4	11	50	4
SM4300.040.N00	4,0	4	11	50	4
SM4300.045.N00	4,5	5	11	50	4
SM4300.050.N00	5,0	5	10	50	4
SM4300.055.N00	5,5	6	10	57	4
SM4300.060.N00	6,0	6	10	57	4
SM4300.070.N00	7,0	8	13	63	4
SM4300.080.N00	8,0	8	16	63	4
SM4300.090.N00	9,0	10	16	72	4
SM4300.100.N00	10,0	10	19	72	4
SM4300.110.N00	11,0	12	19	72	4
SM4300.120.N00	12,0	12	22	83	4
SM4300.140.N00	14,0	14	22	83	4
SM4300.160.N00	16,0	16	26	83	4
SM4300.180.N00	18,0	18	26	92	4
SM4300.200.N00	20,0	20	32	104	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø1-3,5	Ø4-6	Ø7-10	Ø11-14	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

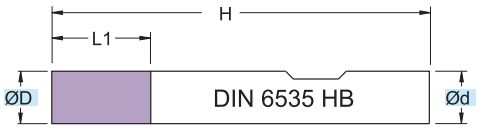
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW4400

ØD = 3 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SMW4400.030.N00	3	3	20	60	4
SMW4400.040.N00	4	4	25	60	4
SMW4400.050.N00	5	5	25	75	4
SMW4400.060.N00	6	6	30	75	4
SMW4400.080.N00	8	8	45	100	4
SMW4400.100.N00	10	10	45	100	4
SMW4400.120.N00	12	12	45	100	4
SMW4400.120.NL00	12	12	65	150	4
SMW4400.140.N00	14	14	45	100	4
SMW4400.160.N00	16	16	45	100	4
SMW4400.160.NL00	16	16	65	150	4
SMW4400.180.N00	18	18	45	100	4
SMW4400.200.N00	20	20	45	100	4
SMW4400.200.NL00	20	20	65	150	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3	Ø4-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

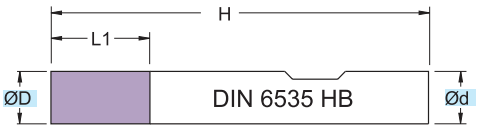
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SMW4401..

ØD = 4 - 25

RIVESTIM. COATED **BLACK**



90°

52 HRC

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø4	Ø5-6	Ø7-10	Ø11-14	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	O	55-65	0,02	0,03	0,045	0,06	0,1
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	30-50	0,01	0,02	0,03	0,04	0,05

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

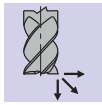
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

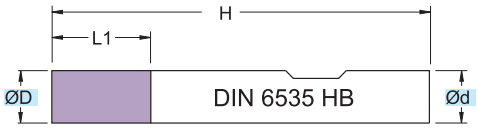
PAG. A 57

SMW4402

ØD = 2 - 20

RIVESTIM. COATED **BLACK**





90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2-3	Ø4-5	Ø6-8	Ø10-12	Ø16-20
P	ACCIAIO - STEEL	●	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,015	0,03	0,04	0,05	0,07
K	GHISA - CAST IRON	●	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

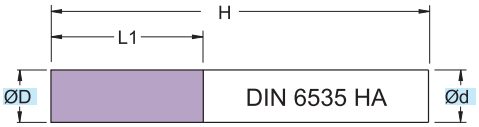
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM4330

ØD = 4 - 20



RIVESTIM. COATED **GRAY**

90°

58 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE MEDIA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	L1	H	Fase	z
SM4330.040.N00	4	6	11	57	0,10	4
SM4330.050.N00	5	6	13	57	0,10	4
SM4330.060.N00	6	6	13	57	0,10	4
SM4330.080.N00	8	8	19	63	1,15	4
SM4330.100.N00	10	10	22	72	1,15	4
SM4330.120.N00	12	12	26	83	0,20	4
SM4330.140.N00	14	14	26	83	0,20	4
SM4330.160.N00	16	16	32	92	0,20	4
SM4330.180.N00	18	18	32	92	0,30	4
SM4330.200.N00	20	20	38	104	0,30	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø4-5	Ø6-8	Ø10-12	Ø14-16	Ø18-20
P	ACCIAIO - STEEL	●	100-250	0,04	0,05	0,06	0,07	0,1
M	ACCIAIO INOX - STAINLESS STEEL	O	100-120	0,03	0,04	0,045	0,055	0,07
K	GHISA - CAST IRON	O	100-200	0,045	0,065	0,08	0,095	1,2
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	O	140-160	0,04	0,06	0,08	0,01	0,015
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	150-200	0,02	0,035	0,045	0,05	0,07

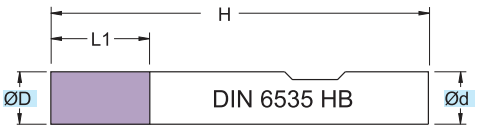
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW4304

ØD = 3 - 20

RIVESTIM. COATED **BLACK**



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 MEDIUM TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3	Ø4-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	●	70-140	0,02	0,04	0,06	0,1	0,15
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON	●	100-200	0,02	0,04	0,06	0,1	0,15
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

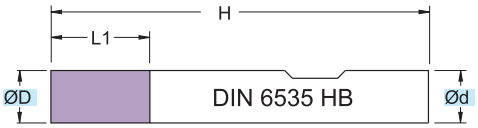
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SMW3304

ØD = 4 - 25

RIVESTIM. COATED
GRAY



90°

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 MEDIUM TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø4	Ø5-6	Ø7-10	Ø12-14	Ø16-25
P	ACCIAIO - STEEL	●	100-200	0,2	0,03	0,05	0,09	0,14
M	ACCIAIO INOX - STAINLESS STEEL	●	140-160	0,2	0,04	0,06	0,09	0,15
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	●	80-100	0,04	0,05	0,07	0,11	0,18
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	O	50-120	0,01	0,02	0,04	0,05	0,08

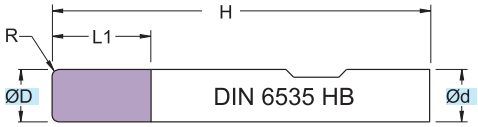
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW4305

ØD = 4 - 20

RIVESTIM. COATED **BLACK**



R

52 HRC

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE MEDIA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 MEDIUM TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø4	Ø5-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL	●	85-160	0,02	0,03	0,045	0,07	0,09
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON	●	80-90	0,02	0,03	0,045	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	50-100	0,008	0,012	0,02	0,04	0,06

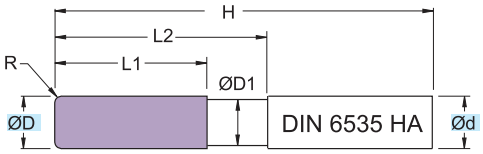
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM4120

ØD = 1 - 20



RIVESTIM. COATED GOLD

R

68 HRC

HSC

FRESA IN M.D.I. MICROGRANO K09 (0.3 µm)
GAMBO CILINDRICO HA - SERIE CORTA SEC. DIN 6527

K09 MICROGRAIN HM MILLS (0,3 µm)
CILINDRICAL SHANK HA - DIN 6527 SHORT TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

(mm)

ART.	ØD	Ød	ØD1	L1	L2	H	R	z
SM4120.010.R010	1,0	3	/	1,5	/	40	0,1	4
SM4120.015.R010	1,5	3	/	2,2	/	40	0,1	4
SM4120.020.R010	2,0	3	1,9	3,0	6	40	0,1	4
SM4120.025.R010	2,5	3	2,4	4,0	6	40	0,1	4
SM4120.030.R010	3,0	6	2,9	4,0	7	45	0,1	4
SM4120.035.R010	3,5	6	3,3	5,0	9	45	0,1	4
SM4120.040.R010	4,0	6	3,8	5,0	9	45	0,1	4
SM4120.045.R010	4,5	6	4,3	6,0	10	45	0,1	4
SM4120.050.R020	5,0	6	4,8	6,0	11	50	0,2	4
SM4120.060.R020	6,0	6	5,8	7,0	14	50	0,2	4
SM4120.080.R020	8,0	8	7,8	9,0	18	60	0,2	4
SM4120.100.R020	10,0	10	9,7	12,0	25	75	0,2	4
SM4120.120.R030	12,0	12	11,7	15,0	30	75	0,3	4
SM4120.160.R030	16,0	16	15,7	18,0	38	90	0,3	4
SM4120.200.R030	20,0	20	19,7	24,0	45	100	0,3	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth)				
				Ø1-3,5	Ø4-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	O	160-180	0,025	0,085	0,16	0,2	0,25
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	80-150	0,015	0,05	0,12	0,13	0,15

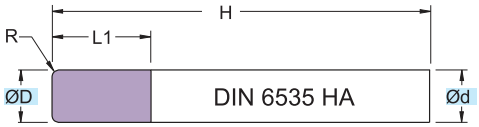
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM4325

ØD = 3 - 20

RIVESTIM. COATED **BLACK**



R

62 HRC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE CORTA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 SHORT TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

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

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL	O	100-250	0,3	0,4	0,5	0,6	0,8
M	ACCIAIO INOX - STAINLESS STEEL	O	90-230	0,3	0,4	0,45	0,55	0,7
K	GHISA - CAST IRON	O	150-230	0,4	0,65	0,8	0,95	1,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,02	0,03	0,04	0,05	0,06

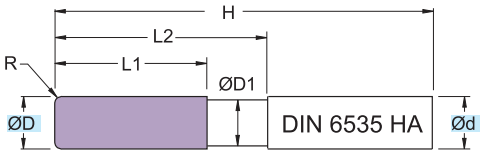
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

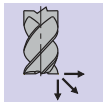
PAG. A 57

SM4205

ØD = 2 - 16



RIVESTIM. COATED **BLACK**



R

62 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE MEDIA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART. (mm)	ØD	Ød	ØD1	L1	L2	H	R	z
SM4205.020.R010	2	6	1,8	4	21	57	0,1	4
SM4205.020.R020	2	6	1,8	4	21	57	0,2	4
SM4205.020.R030	2	6	1,8	4	21	57	0,3	4
SM4205.020.R040	2	6	1,8	4	21	57	0,4	4
SM4205.040.R010	4	6	3,6	6	21	57	0,1	4
SM4205.040.R020	4	6	3,6	6	21	57	0,2	4
SM4205.040.R030	4	6	3,6	6	21	57	0,3	4
SM4205.040.R040	4	6	3,6	6	21	57	0,4	4
SM4205.040.R050	4	6	3,6	6	21	57	0,5	4
SM4205.040.R060	4	6	3,6	6	21	57	0,6	4
SM4205.040.R070	4	6	3,6	6	21	57	0,7	4
SM4205.040.R080	4	6	3,6	6	21	57	0,8	4
SM4205.040.R090	4	6	3,6	6	21	57	0,9	4
SM4205.040.R100	4	6	3,6	6	21	57	1,0	4
SM4205.040.R110	4	6	3,6	6	21	57	1,1	4
SM4205.040.R120	4	6	3,6	6	21	57	1,2	4
SM4205.040.R130	4	6	3,6	6	21	57	1,3	4
SM4205.040.R140	4	6	3,6	6	21	57	1,4	4
SM4205.040.R150	4	6	3,6	6	21	57	1,5	4
SM4205.060.R010	6	6	5,5	7	21	57	0,1	4
SM4205.060.R020	6	6	5,5	7	21	57	0,2	4
SM4205.060.R030	6	6	5,5	7	21	57	0,3	4
SM4205.060.R040	6	6	5,5	7	21	57	0,4	4
SM4205.060.R050	6	6	5,5	7	21	57	0,5	4
SM4205.060.R060	6	6	5,5	7	21	57	0,6	4
SM4205.060.R070	6	6	5,5	7	21	57	0,7	4
SM4205.060.R080	6	6	5,5	7	21	57	0,8	4
SM4205.060.R090	6	6	5,5	7	21	57	0,9	4
SM4205.060.R100	6	6	5,5	7	21	57	1,0	4
SM4205.060.R110	6	6	5,5	7	21	57	1,1	4
SM4205.060.R120	6	6	5,5	7	21	57	1,2	4

ART. (mm)	ØD	Ød	ØD1	L1	L2	H	R	z
SM4205.060.R130	6	6	5,5	7	21	57	1,3	4
SM4205.060.R140	6	6	5,5	7	21	57	1,4	4
SM4205.060.R150	6	6	5,5	7	21	57	1,5	4
SM4205.060.R160	6	6	5,5	7	21	57	1,6	4
SM4205.060.R170	6	6	5,5	7	21	57	1,7	4
SM4205.060.R180	6	6	5,5	7	21	57	1,8	4
SM4205.060.R190	6	6	5,5	7	21	57	1,9	4
SM4205.060.R200	6	6	5,5	7	21	57	2,0	4
SM4205.060.R210	6	6	5,5	7	21	57	2,1	4
SM4205.060.R220	6	6	5,5	7	21	57	2,2	4
SM4205.060.R230	6	6	5,5	7	21	57	2,3	4
SM4205.060.R240	6	6	5,5	7	21	57	2,4	4
SM4205.060.R250	6	6	5,5	7	21	57	2,5	4
SM4205.080.R050	8	8	7,4	9	27	63	0,5	4
SM4205.080.R100	8	8	7,4	9	27	63	1,0	4
SM4205.080.R150	8	8	7,4	9	27	63	1,5	4
SM4205.080.R200	8	8	7,4	9	27	63	2,0	4
SM4205.100.R050	10	10	9,2	11	32	72	0,5	4
SM4205.100.R100	10	10	9,2	11	32	72	1,0	4
SM4205.100.R150	10	10	9,2	11	32	72	1,5	4
SM4205.100.R200	10	10	9,2	11	32	72	2,0	4
SM4205.120.R050	12	12	11,0	12	38	83	0,5	4
SM4205.120.R100	12	12	11,0	12	38	83	1,0	4
SM4205.120.R150	12	12	11,0	12	38	83	1,5	4
SM4205.120.R200	12	12	11,0	12	38	83	2,0	4
SM4205.160.R050	16	16	15,0	16	44	92	0,5	4
SM4205.160.R100	16	16	15,0	16	44	92	1,0	4
SM4205.160.R150	16	16	15,0	16	44	92	1,5	4
SM4205.160.R200	16	16	15,0	16	44	92	2,0	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø2	Ø4	Ø6	Ø8-10	Ø12-16
P	ACCIAIO - STEEL	●	100-250	0,3	0,4	0,5	0,6	0,8
M	ACCIAIO INOX - STAINLESS STEEL	●	90-230	0,3	0,4	0,45	0,55	0,7
K	GHISA - CAST IRON	●	150-230	0,4	0,65	0,8	0,95	1,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,02	0,03	0,04	0,05	0,06

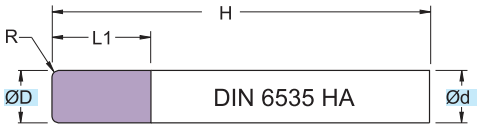
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM4525

ØD = 3 - 20

RIVESTIM. COATED **BLACK**



R

62 HRC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE MEDIA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 MEDIUM TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

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

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3-4	Ø5-6	Ø8-10	Ø12-14	Ø16-20
P	ACCIAIO - STEEL	O	100-250	0,3	0,4	0,5	0,6	0,8
M	ACCIAIO INOX - STAINLESS STEEL	O	90-230	0,3	0,4	0,45	0,55	0,7
K	GHISA - CAST IRON	O	150-230	0,4	0,65	0,8	0,95	1,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,02	0,03	0,04	0,05	0,06

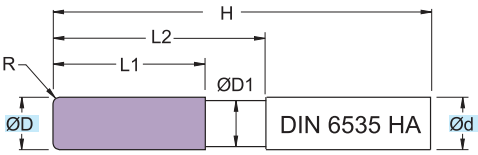
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM4425

ØD = 6 - 16



RIVESTIM. COATED **BLACK**

R

62 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 μm)
GAMBO CILINDRICO HA - SERIE EXTRA LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 μm)
CILINDRICAL SHANK HA - DIN 6527 EXTRA LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
SM4425.060.R010	6	6	5,5	7	44	80	0,1	4
SM4425.060.R020	6	6	5,5	7	44	80	0,2	4
SM4425.060.R030	6	6	5,5	7	44	80	0,3	4
SM4425.060.R040	6	6	5,5	7	44	80	0,4	4
SM4425.060.R050	6	6	5,5	7	44	80	0,5	4
SM4425.060.R060	6	6	5,5	7	44	80	0,6	4
SM4425.060.R070	6	6	5,5	7	44	80	0,7	4
SM4425.060.R080	6	6	5,5	7	44	80	0,8	4
SM4425.060.R090	6	6	5,5	7	44	80	0,9	4
SM4425.060.R100	6	6	5,5	7	44	80	1,0	4
SM4425.060.R110	6	6	5,5	7	44	80	1,1	4
SM4425.060.R120	6	6	5,5	7	44	80	1,2	4
SM4425.060.R130	6	6	5,5	7	44	80	1,3	4
SM4425.060.R140	6	6	5,5	7	44	80	1,4	4
SM4425.060.R150	6	6	5,5	7	44	80	1,5	4
SM4425.060.R160	6	6	5,5	7	44	80	1,6	4
SM4425.060.R170	6	6	5,5	7	44	80	1,7	4
SM4425.060.R180	6	6	5,5	7	44	80	1,8	4
SM4425.060.R190	6	6	5,5	7	44	80	1,9	4
SM4425.060.R200	6	6	5,5	7	44	80	2,0	4
SM4425.060.R210	6	6	5,5	7	44	80	2,1	4
SM4425.060.R220	6	6	5,5	7	44	80	2,2	4
SM4425.060.R230	6	6	5,5	7	44	80	2,3	4
SM4425.060.R240	6	6	5,5	7	44	80	2,4	4
SM4425.060.R250	6	6	5,5	7	44	80	2,5	4

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
SM4425.080.R100	8	8	7,4	9	54	100	1,0	4
SM4425.080.R150	8	8	7,4	9	54	100	1,5	4
SM4425.080.R200	8	8	7,4	9	54	100	2,0	4
SM4425.100.R100	10	10	9,2	11	60	100	1,0	4
SM4425.100.R150	10	10	9,2	11	60	100	1,5	4
SM4425.100.R200	10	10	9,2	11	60	100	2,0	4
SM4425.120.R100	12	12	11,0	12	75	120	1,0	4
SM4425.120.R150	12	12	11,0	12	75	120	1,5	4
SM4425.120.R200	12	12	11,0	12	75	120	2,0	4
SM4425.160.R200	16	16	15,0	16	92	150	2,0	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø6	Ø8	Ø10	Ø12	Ø16
P	ACCIAIO - STEEL	●	100-250	0,3	0,4	0,5	0,6	0,8
M	ACCIAIO INOX - STAINLESS STEEL	●	90-230	0,3	0,4	0,45	0,55	0,7
K	GHISA - CAST IRON	●	150-230	0,4	0,65	0,8	0,95	1,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	180-230	0,02	0,03	0,04	0,05	0,06

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

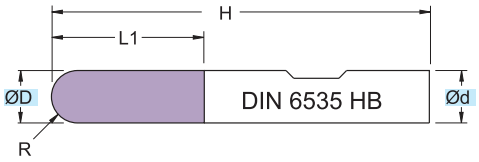
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SMW4403

ØD = 3 - 20

RIVESTIM. COATED **BLACK**



R

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

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

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3	Ø4-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	●	50-150	0,3	0,4	0,6	0,8	1
M	ACCIAIO INOX - STAINLESS STEEL	●	180-220	0,2	0,3	0,5	0,6	0,7
K	GHISA - CAST IRON	●	150-250	0,5	0,6	0,8	1	1,2
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,6	0,7	1	1,2	1,5
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

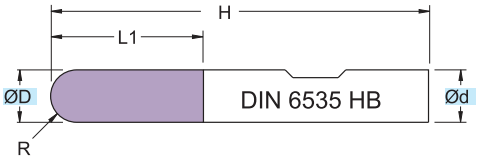
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SMW4503

ØD = 3 - 20

RIVESTIM. COATED
BLACK



R

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SMW4503.030.S020	3	3	20	60	2,0	4
SMW4503.040.S025	4	4	25	60	2,5	4
SMW4503.050.S030	5	5	25	75	3,0	4
SMW4503.060.S040	6	6	30	75	4,0	4
SMW4503.080.S045	8	8	45	100	4,5	4
SMW4503.100.S050	10	10	45	100	5,0	4
SMW4503.120.S060	12	12	45	100	6,0	4
SMW4503.120.SL060	12	12	65	150	6,0	4
SMW4503.160.S080	16	16	45	100	8,0	4
SMW4503.160.SL080	16	16	65	150	8,0	4
SMW4503.200.S100	20	20	45	100	10,0	4
SMW4503.200.SL100	20	20	65	150	10,0	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø3	Ø4-6	Ø8-10	Ø12-16	Ø20
P	ACCIAIO - STEEL	●	50-150	0,3	0,4	0,6	0,8	1
M	ACCIAIO INOX - STAINLESS STEEL	●	180-220	0,2	0,3	0,5	0,6	0,7
K	GHISA - CAST IRON	●	150-250	0,5	0,6	0,8	1	1,2
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,6	0,7	1	1,2	1,5
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL							

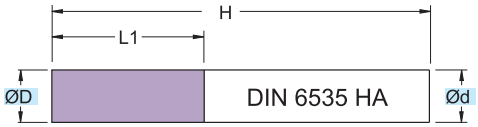
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SM6431

ØD = 6 - 20

RIVESTIM. COATED **GRAY**



90°

52 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	z
SM6431.060.N00	6	6	18	57	6
SM6431.080.N00	8	8	24	63	6
SM6431.100.N00	10	10	30	75	6
SM6431.120.N00	12	12	36	83	6
SM6431.120.NL00	12	12	36	150	6
SM6431.160.N00	16	16	48	104	8
SM6431.160.NL00	16	16	65	150	8
SM6431.200.N00	20	20	55	110	8
SM6431.200.NL00	20	20	65	150	8

PARAMETRI - PARAMETERS

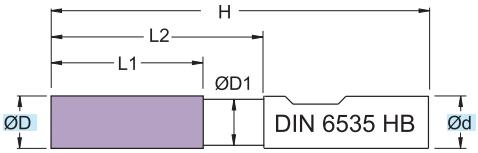
MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø6-8	Ø10	Ø12	Ø16	Ø20
P	ACCIAIO - STEEL	●	100-130	0,03	0,04	0,05	0,06	0,1
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	60-100	0,03	0,04	0,045	0,06	0,08

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

SMW6401

ØD = 5 - 20



RIVESTIM. COATED **GRAY**

90°

52 HRC

HSC

FRESA IN M.D.I. MICROGRANO K12 (0.5 µm)
GAMBO SEC. DIN 6535 HB - SERIE LUNGA SEC. DIN 6527

K12 MICROGRAIN HM MILLS (0,5 µm)
DIN 6535 HB SHANK - DIN 6527 LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	z
SMW6401.050.N00	5	6	4,5	13	18	57	6
SMW6401.060.N00	6	6	5,5	13	18	57	6
SMW6401.080.N00	8	8	7,5	19	24	63	6
SMW6401.100.N00	10	10	9,5	22	32	72	6
SMW6401.120.N00	12	12	11,5	26	36	83	6
SMW6401.140.N00	14	14	13,5	26	36	83	6
SMW6401.160.N00	16	16	15,5	32	42	92	6
SMW6401.180.N00	18	18	17,5	32	42	92	8
SMW6401.200.N00	20	20	19,5	38	48	104	8

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø5	Ø6-8	Ø10-12	Ø14-16	Ø18-20
P	ACCIAIO - STEEL	●	100-130	0,03	0,04	0,05	0,06	0,1
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON	●	150-230	0,04	0,05	0,06	0,08	0,1
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	60-100	0,03	0,04	0,045	0,06	0,08

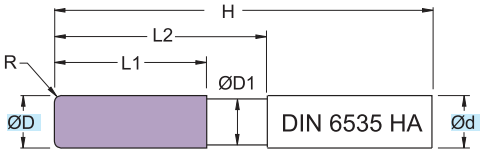
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM6525

ØD = 6 - 20



RIVESTIM. COATED **GOLD**

R

62 HRC

HSC

FRESA IN M.D.I. MICROGRANO K09 (0.3 µm)
GAMBO CILINDRICO HA - SERIE EXTRA LUNGA SEC. DIN 6527

K09 MICROGRAIN HM MILLS (0,3 µm)
CILINDRICAL SHANK HA - DIN 6527 EXTRA LONG TYPE

TOLLERANZE / TOLLERANCE RANGE	D	d
	h10	h6

ART.	(mm) ØD	Ød	ØD1	L1	L2	H	R	z
SM6525.060.R050	6	6	5,70	6	14	50	0,5	6
SM6525.080.R050	8	8	7,65	8	24	60	0,5	6
SM6525.100.R100	10	10	9,65	10	30	70	1,0	6
SM6525.120.R100	12	12	11,6	12	30	75	1,0	6
SM6525.061.R050	6	6	/	13	/	70	0,5	6
SM6525.062.R050	6	6	/	26	/	70	0,5	6
SM6525.081.R050	8	8	/	19	/	90	0,5	6
SM6525.082.R050	8	8	/	36	/	90	0,5	6
SM6525.101.R050	10	10	/	22	/	100	0,5	6
SM6525.102.R100	10	10	/	22	/	100	1,0	6
SM6525.103.R100	10	10	/	46	/	100	1,0	6
SM6525.121.R050	12	12	/	26	/	110	0,5	6
SM6525.122.R100	12	12	/	26	/	110	1,0	6
SM6525.123.R100	12	12	/	56	/	110	1,0	6
SM6525.161.R100	16	16	/	32	/	130	1,0	6
SM6525.162.R150	16	16	/	32	/	130	1,5	6
SM6525.163.R150	16	16	/	66	/	130	1,5	6
SM6525.201.R100	20	20	/	38	/	140	1,0	6
SM6525.202.R150	20	20	/	38	/	140	1,5	6
SM6525.203.R200	20	20	/	38	/	140	2,0	6
SM6525.204.R200	20	20	/	76	/	140	2,0	6

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø6	Ø8-10	Ø12	Ø16	Ø20
P	ACCIAIO - STEEL	O	160-180	0,025	0,085	0,16	0,2	0,25
M	ACCIAIO INOX - STAINLESS STEEL							
K	GHISA - CAST IRON							
N	ALLUMINIO E SUE LEGHE - ALUMINIUM							
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY							
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	●	80-150	0,015	0,05	0,06	0,07	0,08

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

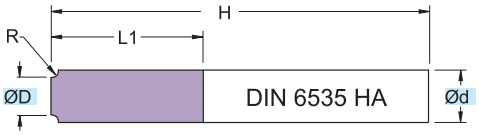
O APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

SM4400

ØD = 8 - 10

RIVESTIM. COATED
BLACK



R

300 HB

FRESA IN M.D.I. MICROGRANO K20
GAMBO CILINDRICO HA - SERIE LUNGA SEC. DIN 6527

K20 MICROGRAIN HM MILLS
CILINDRICAL SHANK HA - DIN 6527 LONG TYPE

TOLLERANZE	D	d
TOLLERANCE RANGE	h10	h6

ART.	(mm) ØD	Ød	L1	H	R	z
SM4400.080.R050	7	8	0,5	70	0,5	4
SM4400.080.R100	6	8	1,0	70	1,0	4
SM4400.100.R150	7	10	1,5	75	1,5	4
SM4400.100.R200	6	10	2,0	75	2,0	4
SM4400.120.R250	7	12	2,5	75	2,5	4
SM4400.120.R300	6	12	3,0	75	3,0	4
SM4400.160.R350	9	16	3,5	80	3,5	4
SM4400.160.R400	8	16	4,0	80	4,0	4
SM4400.160.R450	7	16	4,5	80	4,5	4
SM4400.200.R500	10	20	5,0	80	5,0	4
SM4400.200.R600	8	20	6,0	80	6,0	4

PARAMETRI - PARAMETERS

MATERIALI - MATERIALS pag. B 56			Vc m/min	fz mm/dente (mm/ tooth) Ø8	Ø10	Ø12	Ø16	Ø20
P	ACCIAIO - STEEL	O	50-100	0,015	0,03	0,04	0,05	0,07
M	ACCIAIO INOX - STAINLESS STEEL	O	20-40	0,005	0,008	0,01	0,012	0,015
K	GHISA - CAST IRON	O	70-110	0,02	0,035	0,05	0,07	0,09
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	O	150-300	0,025	0,04	0,06	0,095	0,13
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	O	20-60	0,01	0,02	0,03	0,04	0,05
H	MAT. DURI E TEMPRATI - HARD AND HARDENED MATERIAL	O	20-40	0,005	0,008	0,01	0,012	0,015

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PAG. A 57

NOTE :

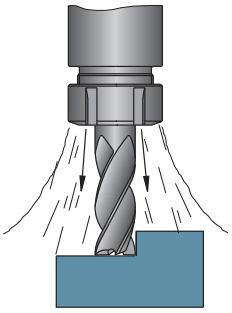
DATI TECNICI
FRESATURA

MILLING TECHICAL DATA
TECHNISCHE DATEN ZUM FRÄSEN
DONNÉES TECHNIQUES FRAISAGE
DATOS TECNICOS FRESADO

SAU
QUALITY TOOLS ENGINEERING

INDICAZIONI E CONSIGLI PER LA LAVORAZIONE
MACHINING INSTRUCTIONS AND SUGGESTIONS

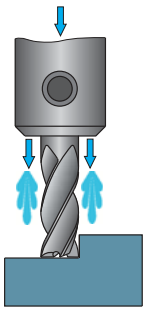
ARIA COMPRESSA
COMPRESSED AIR



- Per avere un buon rendimento del tagliente si devono evitare le variazioni termiche
- La scelta prioritaria nella lavorazione di acciaio é costituita dalla fresatura a secco, preferibilmente con aria compressa attraverso il mandrino per rimuovere i trucioli

- For good cutting edge efficiency it is necessary to avoid heat variations
- The highest-priority choice when processing steel is dry milling, preferably with compressed air through the chuck to remove chips

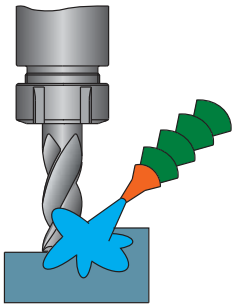
REFRIGERANTE INTERNO
INTERNAL COOLANT

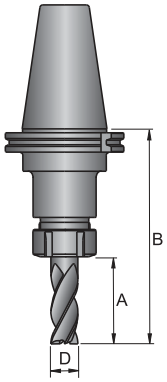


- Nella lavorazione delle leghe resistenti al calore è consigliabile usare il refrigerante per raffreddare il materiale e per migliorare l'evacuazione del truciolo.
- Nella lavorazione di acciai inox e di alluminio è consigliabile usare il refrigerante per evitare incollamenti di materiale e per agevolare l'evacuazione del truciolo.
- Nella lavorazione delle ghise è consigliabile usare il refrigerante per abbattere la polvere che si produce durante la lavorazione.

- When processing heat resistant alloys, it is advisable to use cutting fluid for cooling the material and for improving the removal of chips
- When machining stainless steel and aluminum it is advisable to use coolant to prevent material from sticking and to facilitate the removal of chips
- When machining cast irons it is advisable to use coolant to cut down the amount of dust produced during processing

REFRIGERANTE ESTERNO
EXTERNAL COOLANT

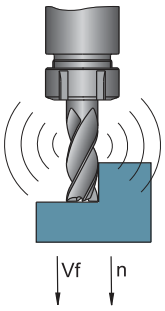




- Per avere una maggiore stabilità dell'utensile ed una maggiore precisione della lavorazione si consiglia di contenere più possibile la sporgenza A e B, si consiglia anche di lavorare con un diametro di fresa più grande possibile. Una sporgenza ridotta del 20% riduce la flessione dell'utensile del 50%.
Un diametro superiore del 20% può ridurre del 50% la flessione dell'utensile.

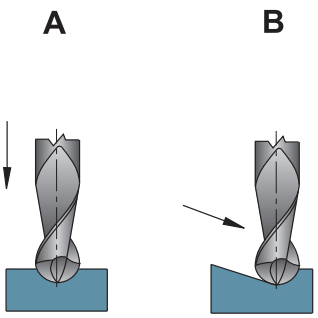
- For increased stability of the tool and greater processing precision, it is advisable to keep the protrusions A and B as small as possible; it is also advisable to use a milling cutter with a diameter that is as large as possible. A protrusion that is reduced by 20% reduces tool flexure by 50%
A diameter that is 20% larger can reduce tool flexure by 50%.

INDICAZIONI E CONSIGLI PER LA LAVORAZIONE
MACHINING INSTRUCTIONS AND SUGGESTIONS



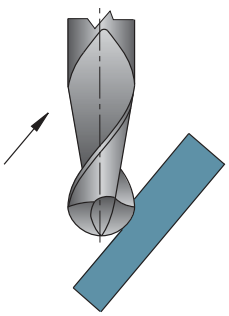
- Se le condizioni di lavoro non sono rigide, vi sono vibrazioni o rumori si consiglia di ridurre il numero di giri e l'avanzamento proporzionalmente.

- If the machining conditions are not rigid, or if there are vibrations or sounds, it is advisable to proportionally reduce the rpm and feed rate



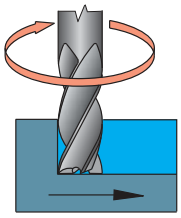
- Se le condizioni lo permettono, si consiglia di penetrare come in figura B. Quando si penetra assialmente, figura A, diminuire l'avanzamento del 50%

- If the machining conditions allow it, it is suggested to penetrate as shown in Figure B. When penetrating axially, as shown in Figure A, reduce the feed rate by 50%.



- Quando le condizioni lo permettono, lavorare le pareti inclinate in tiro, come indicato in figura

- When the machining conditions allow it, back-machine the raking walls as shown in the figure



- Per ottenere una migliore rugosità ed una maggiore durata del tagliente si consiglia di lavorare in concordanza

- To obtain increased roughness and a longer life of the cutting edge, accordance machining is suggested

LAVORAZIONE AD ALTA VELOCITA DI TAGLIO
HIGH CUTTING SPEED MACHINING

HIGH
SPEED
CUTTING

VANTAGGI:
- diminuzione dei tempi macchina, aumento della produttività
- negli stampi : riduzione di aggiustaggio manuale e di lavorazioni EDM (elettroerosione) a filo o a tuffo
- finiture superficiali migliori paragonabili alla rettifica, profili 3D più costanti
- possibilità di lavorare materiali temprati con durezze fino a 70 HRC
- riduzione degli sforzi in lavorazione, lavorazione di sezioni sottili senza deformazioni
- smaltimento del calore sul truciolo, nessuna deformazione

FATTORI INDISPENSABILI PER LA LAVORAZIONE HSC:
- i profili devono essere calcolati a CAD
- i percorsi utensile devono prevedere un'entrata fluida dell'utensile in lavorazione, movimenti semicircolari con entrate in tangenza nelle riprese dei profili, sovrametallo costante su tutto il profilo da eseguire
- la macchina deve essere predisposta per la lavorazione HSC : grande memoria di dati, velocità di lettura dei blocchi programma, velocità di rotazione mandrino, rigidità, dinamica e precisione degli assi
- usare mandrini di precisione, bilanciati e stabili; consigliati gli attacchi HSK o ISO40
- utilizzare utensili studiati per questo utilizzo, con molti denti; consigliate le frese in metallo duro integrale

ADVANTAGES:
- reduction of machine times, increase in productivity.
- In the dies: reduction of manual adjustments and long or deep EDM machining (electron discharge machining).
- Improved surface finishes that are comparable to grinding, more constant 3D profiles
- Possibility of machining tempered materials with hardness up to 70 HRC.
- Reduction of machining strain, machining of thin sections without deformations.
- Dispersion of the heat onto the chip, no deformation.

INDISPENSABLE FACTORS FOR HSC MACHINING:
- the profiles must be calculated with CAD
- the tool paths must include a fluid inlet for the tool being used for machining, semicircular movements with inlets that are tangent to the profile intakes, and constant machining allowance on the entire profile to be executed.
- the machine must be designed for HSC machining: a large amount of data storage, fast reading of program blocks, fast chuck rotation, rigidity, dynamic, and precision of the axes.
- use precise, balanced, and stable chucks; HSK or ISO40 attachments are recommended.
- use multi-toothed tools that were designed for this use; solid carbide milling cutters are recommended.

FORATURA
LAVORAZIONE FORI

DRILLING - MACHINING OF BORES / BOHREN - BEARBEITUNG VON BOHRUNGEN /
PERÇAGE - USINAGE DES TROUS / TALADRAR - TRABAJO DE LOS AGUJEROS

SAU
QUALITY TOOLS ENGINEERING

SIMBOLOGIA
SYMBOL
SYMBOLE
SYMBOLES

RIVESTIMENTI - COATED - BESCHICHTUNG - RECOUVREMENT

RIVESTIM. COATED **TIALN**

TiAlN : ELEVATA DUREZZA E RESISTENZA AL CALORE, BASSO COEFFICIENTE DI ATTRITO, SI PUÓ USARE CON REFRIGERANTE OPPURE A SECCO CON ARIA

HIGH DEGREE OF HARDNESS AND HEAT RESISTANCE, LOW FRICTION COEFFICIENT; IT CAN BE USED WITH COOLANT OR WITH AIR AND NO COOLANT

RIVESTIM. COATED **TIALCN**

TiAlCN : ELEVATA RESISTENZA ALL'USURA, MIGLIORE FINITURA, BASSO COEFFICENTE DI ATTRITO, ELEVATA TENACITA' ED ADERENZA AL SUBSTRATO.

HIGH RESISTANCE TO WEAR, BETTER FINISHING, LOW FRICTION COEFFICIENT, HIGH DEGREE OF TOUGHNESS AND SUBSTRATUM ADHESION

RIVESTIM. COATED **TICN**

TiCN : ELEVATA DUREZZA E RESISTENZA, SI USA CON REFRIGERANTE

HIGH RESISTANCE AND HARDNESS, TO BE USED WITH COOLANT

RIVESTIM. COATED **TIN**

TiN : BASSO COEFFICIENTE DI ATTRITO, ELEVATA TENACITÁ

LOW FRICTION COEFFICIENT, HIGH TOUGHNESS

AFFILATURA TESTA - HEAD SHARPENING - KOPFSCHLIFF - AFFUTAGE TETE

- AUTOCENTRANTE - REFRIGERATA
- SELF CENTERING - WITH COOLANT
- SELBSTZENTRIEREND - GEKÜHLT
- A CENTRAGE AUTOMATIQUE-REFRIGERE

- INOX E ALLUMINIO
- INOX AND ALUMINIUM
- EDELSTAHL UND ALUMINIUM
- INOX ET ALUMINIUM

- AUTOCENTRANTE
- SELF CENTERING
- SELBSTZENTRIEREND
- A CENTRAGE AUTOMATIQUE

- INOX E ALLUMINIO - REFRIGERATA
- INOX AND ALUMINIUM - WITH COOLANT
- EDELSTAHL UND ALUMINIUM - GEKÜHLT
- INOX ET ALUMINIUM-REFRIGERE

- 3 ELICHE - REFRIGERATA
- 3 FLUTES - WITH COOLANT
- 3 SPIRALBOHRER - GEKÜHLT
- 3 HELICES-REFRIGERE

- GENERICA NON AUTOCENTRANTE
- GENERIC NO SELF CENTERING
- NORMAL NICHT SELBSTZENTRIEREND
- GENERIQUE NON A CENTRAGE AUTOMATIQUE

ANGOLO ELICA - FLUTES DEGREES - SPIRALWINKEL - ANGLE HELICE

■ *0°*

■ *0°*

■ *30°*

■ *6°*

■ *10°*

ANGOLO DI TESTA - HEAD ANGLE - KOPFKEGELWINKEL - ANGLE DE TETE

■ *60°*

■ *118°*

■ *90°*

■ *140°*

NORME - STANDARDS - NORMEN - NORMES

DIN 338 ■ *DIN 338*

DIN 6537 ■ *DIN 6537*

DIN 1897 ■ *DIN 1897*

DIN 6539 ■ *DIN 6539*

LUNGHEZZA PUNTA - DRILL LENGHT - BOHRERLÄNGE - LONGUEUR POINTE

3xD

- 3 VOLTE IL DIAMETRO
- THREE TIMES THE DIAMETER
- DREIMAL DEN DURCHMESSER
- 3 FOIS LE DIAMETRE

9xD

- 9 VOLTE IL DIAMETRO
- NINE TIMES THE DIAMETER
- NÜNMAL DEN DURCHMESSER
- 9 FOIS LE DIAMETRE

5xD

- 5 VOLTE IL DIAMETRO
- FIVE TIMES THE DIAMETER
- FÜNFMAL DEN DURCHMESSER
- 5 FOIS LE DIAMETRE

12xD

- 12 VOLTE IL DIAMETRO
- TWELVE TIMES THE DIAMETER
- ZWÖLFMAL DEN DURCHMESSER
- 12 FOIS LE DIAMETRE

8xD

- 8 VOLTE IL DIAMETRO
- EIGHT TIMES THE DIAMETER
- ACHTMAL DEN DURCHMESSER
- 8 FOIS LE DIAMETRE

SIMBOLI GENERALI - GENERAL SYMBOLS - ALLGEMEINE SYMBOLE - SYMBOLES GÉNÉRAUX

- PUNTA AUTOCENTRANTE
- SELF-CENTERING DRILL
- SELBSTZENTRIERENDER BOHRER
- POINTE A CENTRAGE AUTOMATIQUE

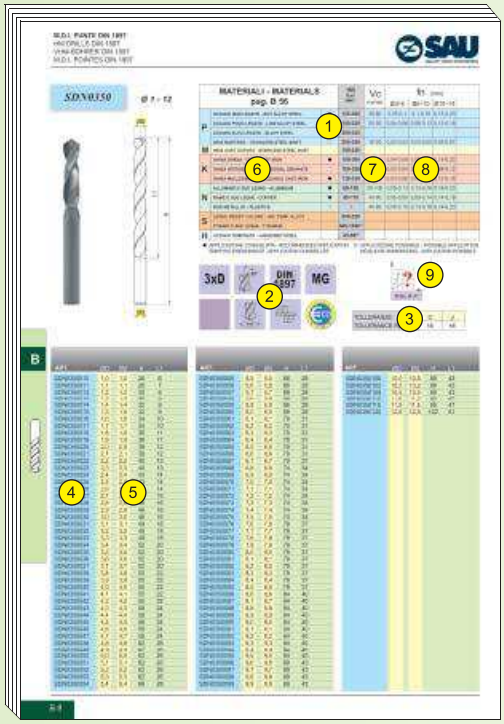
- ECO-LINE

MG

- MICROGRANO 0,7 µm (K 20)
- MICROGRAIN
- FEINSTKORN 0,7 µm (K 20)
- MICROGRENU 0,7 µm (K 20)

UMG

- ULTRAMICROGRANO 0,5 µm (K 12)
- ULTRA-MICRO-GRAIN 0,5 µm (K 12)
- ULTRA-FEIN-KORN 0,5 µm (K 12)
- ULTRAMICROGRAIN 0,5 µm (K 12)



1 = MATERIALI LAVORABILI
2 = CARATTERISTICHE TECNICHE (PAG. B 2)
3 = TOLLERANZE COSTRUTTIVE
4 = ELENCO ARTICOLI
5 = MISURE E DATI
6 = GRUPPI MATERIALI
7 = VELOCITÀ DI TAGLIO Vc
8 = AVANZAMENTI AL GIRO fn, SECONDO I GRUPPI DI MATERIALE
9 = ULTERIORI DATI TECNICI E CONSIGLIO D'USO

1 = MACHINING MATERIALS
2 = TECHNICAL FEATURES (PAG. B 2)
3 = CONSTRUCTIVE TOLERANCE
4 = ITEMS
5 = MEASURES AND DATA
6 = MATERIAL GROUPS
7 = CUTTING SPEED VC
8 = fn FEED/REVOLUTION , ACCORDING TO MATERIAL GROUPS
9 = FURTHER TECHNICAL DATA AND SUGGESTIONS

1 = MATERIALGRUPPEN ANWENDUNG
2 = TECHNISCHE HAUPTMERKMALE (PAG. B 2)
3 = KONSTRUKTIONSTOLERANZEN
4 = ARTIKEL
5 = ABMESSUNGEN UND DATEN
6 = MATERIALGRUPPEN
7 = SCHNITTGESCHWINDIGKEIT Vc
8 = VORSCHUB/UMDREHUNG, JE NACH MATERIALGRUPPE
9 = WEITERE TECHNISCHE DATEN UND TIPPS

1 = MATERIAUX USINABLE
2 = CARACTERISTIQUES TECHNIQUES (PAG. B 2)
3 = TOLÉRANCE CONSTRUCTIVE
4 = ARTICLES
5 = DIMENSIONES ET DONNÉES
6 = GROUPES DE MATERIAUX
7 = VITESSE DE COUPE Vc
8 = DÉPLACEMENT PAR TOUR FN, SELÓN LE GROUPES DE MATERIAUX
9 = ULTÉRIEURES DONNÉES TECHNIQUE ET CONSEILLE D'USAGE

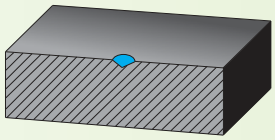
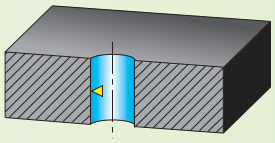
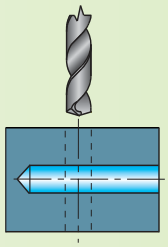
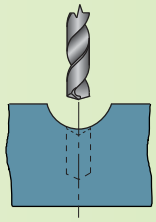
SAU
QUALITY TOOLS ENGINEERING

FORATURA - LAVORAZIONE FORI
DRILLING - MACHINING OF BORES
BOHREN - BEARBEITUNG VON BOHRUNGEN
PERÇAGE - USINAGE DES TROUS
TALADRAR - TRABAJO DE LOS AGUJEROS

	ART.	LUNGHEZZA ELICA / LENGHT FLUTES	Z	MATERIALE / MATERIAL	RIVESTITO / COATED	Materiali - Materials Pag. B 56 P	M	K	N	S	H	G	Pag.
				PUNTE INTEGRALI IN HM - SOLID CARBIDEDRILLS									
	SDN0350	3xD	2	MG		●		●	●				B 8
	SDR0340	3xD	2	MG	TiALN	●	○	●	○	○			B 9
	SDR0300	3xD	2	UMG	TiALCN	●	○	●	○	○			B 10
	SDR0330	3xD	2	UMG	TiALN	●		●	●			●	B 12
	SDF0300	3xD	2	UMG	TiALCN	●	○	●	○	○			B 13
	SDN0560	5xD	2	MG		●		●	●				B 14
	SDR0500	5xD	2	UMG	TiALCN	●	○	●	○	○			B 15
	SDF0500	5xD	2	UMG	TiALCN	●	○	●	○	○			B 16
	SDF0550	5xD	2	UMG	TiALN		●		○	○			B 18
	SDF0510	5xD	2	UMG	TiALN	●		○	●	○			B 19
	SDF0590	5xD	3	UMG	TiALCN			●	○				B 20
	SDF0800	8xD	2	UMG	TiALN	●	○	●	○	○			B 21
	SDF0930	9xD	2	UMG	TiALCN	●		●	●			●	B 22
	SDF1200	12xD	2	UMG	TiALN	●	○	●	○	○			B 23

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

	ART.	ANGOLO ELICA ANGLE FLUTES	Z	MATERIALE MATERIAL	RIVESTITO COATED	Materiali - Materials Pag. **B 56** P	M	K	N	S	H	G	Pag.
				PUNTE A GRADINO - STEP DRILLS									
	SDN0101	30°	2	MG		○	○	○	○	○	○	○	B 26
	SDR0102	30°	2	MG	TiALN	○	○	○	○	○	○	○	B 27
				PUNTE A CENTRARE - CENTER DRILLS									
	SCR0184	30°	2	MG	TiALN	○	○	○	○	○	○	○	B 30
	SCR0183	0°	4/6	MG	TiALN	○	○	○	○	○	○	○	B 31
	SCR0187	0°	4	MG	TiALN	○	○	○	○	○	○	○	B 32
				SMUSSATORI - CHAMFERING TOOLS									
	SMR0100	0°	4	UMG	TiALN	○	○	○	○	○	○	○	B 34
				ALESATORI - REAMERS									
	SAN0309	10°	4/6	UMG		●	●	●	●	●		○	B 36
	SAN0308	10°	4/6	UMG		●	●	●	●	●		○	B 37
				DISTRUGGI MASCHI - TAP DESTROYING TOOL									
	SKR	0°	3	UMG	TiN	○	○	○	○	○	○	○	B 40
				FRESE A FILETTARE - THREADING MILLS									
	UNR	6°	3/5	UMG	TiCN	●							B 42
	GASR	6°	3/5	UMG	TiCN	●							B 43
	MMR	6°	3/5	UMG	TiCN	●							B 44
	NPR	6°	3/5	UMG	TiCN	●							B 45
	GCR	6°	3/5	UMG	TiCN	●							B 46

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

NOTE :

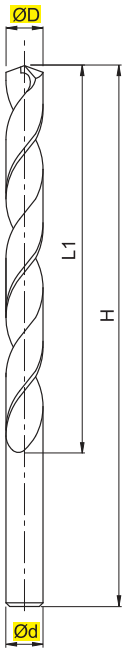
PUNTE INTEGRALI IN HM

SOLID CARBIDE DRILLS / HM VOLLBOHRER /
FORETS EN CARBURE MONOBLOC / PUNTAS INTEGRALES EN METAL DURO

SAU
QUALITY TOOLS ENGINEERING

SDN0350

Ø 1 - 12



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	30-60	0,05-0,1	0,1-0,15	0,15-0,20
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	25-50	0,04-0,08	0,08-0,13	0,13-0,18
	ACCIAIO ALTO LEGATO - ALLOY STEEL		200-325				
	INOX MARTENS. - STAINLESS STEEL MART	○	200-240	10-20	0,02-0,03	0,03-0,05	0,05-0,07
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		180-230				
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	40-80	0,04-0,08	0,08-0,15	0,15-0,22
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	○	160-250	25-50	0,02-0,04	0,04-0,08	0,08-0,12
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	35-70	0,03-0,06	0,06-0,12	0,12-0,18
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	50-100	0,05-0,13	0,13-0,18	0,18-0,23
	RAME E SUE LEGHE - COPPER	●	90-110	45-90	0,05-0,09	0,09-0,14	0,14-0,19
	NON METALLICI - PLASTICS	○	/	40-80	0,05-0,13	0,13-0,18	0,18-0,23
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY		200-320				
	TITANIO E SUE LEGHE - TITANIUM		400-1050[1]				
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]				

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 60%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 30%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 60%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 30%

3xD | 30° | DIN 1897 | MG | 118° | ECO LINE

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	h6	h6

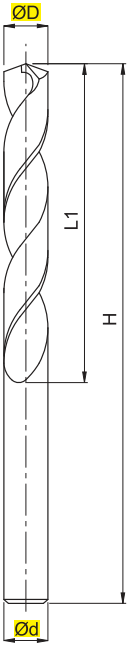
ART.	ØD	Ød	H	L1
SDN0350010	1,0	1,0	26	6
SDN0350011	1,1	1,1	28	7
SDN0350012	1,2	1,2	30	8
SDN0350013	1,3	1,3	30	8
SDN0350014	1,4	1,4	32	9
SDN0350015	1,5	1,5	32	9
SDN0350016	1,6	1,6	34	10
SDN0350017	1,7	1,7	34	10
SDN0350018	1,8	1,8	36	11
SDN0350019	1,9	1,9	36	11
SDN0350020	2,0	2,0	38	12
SDN0350021	2,1	2,1	38	12
SDN0350022	2,2	2,2	40	13
SDN0350023	2,3	2,3	40	13
SDN0350024	2,4	2,4	43	14
SDN0350025	2,5	2,5	43	14
SDN0350026	2,6	2,6	43	14
SDN0350027	2,7	2,7	46	16
SDN0350028	2,8	2,8	46	16
SDN0350029	2,9	2,9	46	16
SDN0350030	3,0	3,0	46	16
SDN0350031	3,1	3,1	49	18
SDN0350032	3,2	3,2	49	18
SDN0350033	3,3	3,3	49	18
SDN0350034	3,4	3,4	52	20
SDN0350035	3,5	3,5	52	20
SDN0350036	3,6	3,6	52	20
SDN0350037	3,7	3,7	52	20
SDN0350038	3,8	3,8	55	22
SDN0350039	3,9	3,9	55	22
SDN0350040	4,0	4,0	55	22
SDN0350041	4,1	4,1	55	22
SDN0350042	4,2	4,2	55	22
SDN0350043	4,3	4,3	58	24
SDN0350044	4,4	4,4	58	24
SDN0350045	4,5	4,5	58	24
SDN0350046	4,6	4,6	58	24
SDN0350047	4,7	4,7	58	24
SDN0350048	4,8	4,8	62	26
SDN0350049	4,9	4,9	62	26
SDN0350050	5,0	5,0	62	26
SDN0350051	5,1	5,1	62	26
SDN0350052	5,2	5,2	62	26
SDN0350053	5,3	5,3	62	26
SDN0350054	5,4	5,4	66	28

ART.	ØD	Ød	H	L1
SDN0350055	5,5	5,5	66	28
SDN0350056	5,6	5,6	66	28
SDN0350057	5,7	5,7	66	28
SDN0350058	5,8	5,8	66	28
SDN0350059	5,9	5,9	66	28
SDN0350060	6,0	6,0	66	28
SDN0350061	6,1	6,1	70	31
SDN0350062	6,2	6,2	70	31
SDN0350063	6,3	6,3	70	31
SDN0350064	6,4	6,4	70	31
SDN0350065	6,5	6,5	70	31
SDN0350066	6,6	6,6	70	31
SDN0350067	6,7	6,7	70	31
SDN0350068	6,8	6,8	74	34
SDN0350069	6,9	6,9	74	34
SDN0350070	7,0	7,0	74	34
SDN0350071	7,1	7,1	74	34
SDN0350072	7,2	7,2	74	34
SDN0350073	7,3	7,3	74	34
SDN0350074	7,4	7,4	74	34
SDN0350075	7,5	7,5	74	34
SDN0350076	7,6	7,6	79	37
SDN0350077	7,7	7,7	79	37
SDN0350078	7,8	7,8	79	37
SDN0350079	7,9	7,9	79	37
SDN0350080	8,0	8,0	79	37
SDN0350081	8,1	8,1	79	37
SDN0350082	8,2	8,2	79	37
SDN0350083	8,3	8,3	79	37
SDN0350084	8,4	8,4	79	37
SDN0350085	8,5	8,5	79	37
SDN0350086	8,6	8,6	84	40
SDN0350087	8,7	8,7	84	40
SDN0350088	8,8	8,8	84	40
SDN0350089	8,9	8,9	84	40
SDN0350090	9,0	9,0	84	40
SDN0350091	9,1	9,1	84	40
SDN0350092	9,2	9,2	84	40
SDN0350093	9,3	9,3	84	40
SDN0350094	9,4	9,4	84	40
SDN0350095	9,5	9,5	84	40
SDN0350096	9,6	9,6	89	43
SDN0350097	9,7	9,7	89	43
SDN0350098	9,8	9,8	89	43
SDN0350099	9,9	9,9	89	43

ART.	ØD	Ød	H	L1
SDN0350100	10,0	10,0	89	43
SDN0350102	10,2	10,2	89	43
SDN0350105	10,5	10,5	89	43
SDN0350110	11,0	11,0	95	47
SDN0350115	11,5	11,5	95	47
SDN0350120	12,0	12,0	102	51

SDR0340

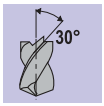
Ø 3 - 20



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

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

3xD



DIN 6539

MG

RIVESTIM. COATED
TIALN

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	h7	h6

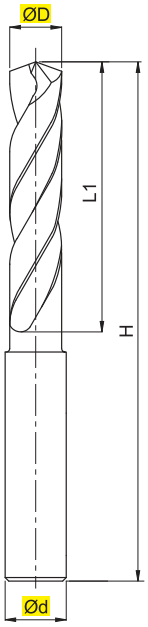
ART.	ØD	Ød	H	L1
SDR0340030	3,0	3,0	46	16
SDR0340031	3,1	3,1	49	18
SDR0340032	3,2	3,2	49	18
SDR0340033	3,3	3,3	49	18
SDR0340034	3,4	3,4	49	18
SDR0340035	3,5	3,5	49	18
SDR0340036	3,6	3,6	49	18
SDR0340037	3,7	3,7	49	18
SDR0340038	3,8	3,8	55	22
SDR0340039	3,9	3,9	55	22
SDR0340040	4,0	4,0	55	22
SDR0340041	4,1	4,1	55	22
SDR0340042	4,2	4,2	55	22
SDR0340043	4,3	4,3	58	24
SDR0340044	4,4	4,4	58	24
SDR0340045	4,5	4,5	58	24
SDR0340046	4,6	4,6	58	24
SDR0340047	4,7	4,7	58	24
SDR0340048	4,8	4,8	62	26
SDR0340049	4,9	4,9	62	26
SDR0340050	5,0	5,0	62	26
SDR0340051	5,1	5,1	62	26
SDR0340052	5,2	5,2	62	26
SDR0340053	5,3	5,3	62	26
SDR0340054	5,4	5,4	66	28
SDR0340055	5,5	5,5	66	28
SDR0340056	5,6	5,6	66	28
SDR0340057	5,7	5,7	66	28
SDR0340058	5,8	5,8	66	28
SDR0340059	5,9	5,9	66	28
SDR0340060	6,0	6,0	66	28
SDR0340061	6,1	6,1	66	31
SDR0340062	6,2	6,2	70	31
SDR0340063	6,3	6,3	70	31
SDR0340064	6,4	6,4	70	31
SDR0340065	6,5	6,5	70	31
SDR0340066	6,6	6,6	70	31
SDR0340067	6,7	6,7	70	31
SDR0340068	6,8	6,8	70	34
SDR0340069	6,9	6,9	74	34
SDR0340070	7,0	7,0	74	34
SDR0340071	7,1	7,1	74	34
SDR0340072	7,2	7,2	74	34
SDR0340073	7,3	7,3	74	34
SDR0340074	7,4	7,4	74	34

ART.	ØD	Ød	H	L1
SDR0340075	7,5	7,5	74	34
SDR0340076	7,6	7,6	79	37
SDR0340077	7,7	7,7	79	37
SDR0340078	7,8	7,8	79	37
SDR0340079	7,9	7,9	79	37
SDR0340080	8,0	8,0	79	37
SDR0340081	8,1	8,1	79	37
SDR0340082	8,2	8,2	79	37
SDR0340083	8,3	8,3	79	37
SDR0340084	8,4	8,4	79	37
SDR0340085	8,5	8,5	79	37
SDR0340086	8,6	8,6	84	40
SDR0340087	8,7	8,7	84	40
SDR0340088	8,8	8,8	84	40
SDR0340089	8,9	8,9	84	40
SDR0340090	9,0	9,0	84	40
SDR0340091	9,1	9,1	84	40
SDR0340092	9,2	9,2	84	40
SDR0340093	9,3	9,3	84	40
SDR0340094	9,4	9,4	84	40
SDR0340095	9,5	9,5	84	40
SDR0340096	9,6	9,6	89	43
SDR0340097	9,7	9,7	89	43
SDR0340098	9,8	9,8	89	43
SDR0340099	9,9	9,9	89	43
SDR0340100	10,0	10,0	89	43
SDR0340102	10,2	10,2	89	43
SDR0340105	10,5	10,5	89	43
SDR0340110	11,0	11,0	95	47
SDR0340115	11,5	11,5	95	47
SDR0340120	12,0	12,0	102	51
SDR0340125	12,5	12,5	102	51
SDR0340130	13,0	13,0	102	51
SDR0340135	13,5	13,5	107	54
SDR0340140	14,0	14,0	107	54
SDR0340145	14,5	14,5	111	56
SDR0340150	15,0	15,0	111	56
SDR0340155	15,5	15,5	115	58
SDR0340160	16,0	16,0	115	58
SDR0340165	16,5	16,5	119	60
SDR0340170	17,0	17,0	119	60
SDR0340175	17,5	17,5	123	62
SDR0340180	18,0	18,0	123	62
SDR0340185	18,5	18,5	127	64
SDR0340190	19,0	19,0	127	64

ART.	ØD	Ød	H	L1
SDR0340195	19,5	19,5	131	66
SDR0340200	20,0	20,0	131	66

SDR0300

Ø 0,5 - 20



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

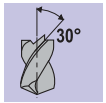
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø0,5÷1 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 70%
PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 50%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 30%

FOR DIAMETERS Ø0,5÷1 REFER TO PARAMETERS FN (Ø3÷6) REDUCED BY 70%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS FN (Ø3÷6) REDUCED BY 50%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS FN (Ø3÷6) REDUCED BY 30%

3xD



DIN 6537

UMG

RIVESTIM. COATED
TIALCN

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	m7	h6

ART.	ØD	Ød	H	L1
SDR0300005	0,5	3	38	6
SDR0300006	0,6	3	38	6
SDR0300007	0,7	3	38	6
SDR0300008	0,8	3	38	6
SDR0300009	0,9	3	38	6
SDR0300010	1,0	3	38	6
SDR0300011	1,1	3	38	12
SDR0300012	1,2	3	38	12
SDR0300013	1,3	3	38	12
SDR0300014	1,4	3	38	12
SDR0300015	1,5	3	50	12
SDR0300016	1,6	3	50	12
SDR0300017	1,7	3	50	12
SDR03000175	1,75	3	50	12
SDR0300018	1,8	3	50	12
SDR0300019	1,9	3	50	12
SDR03000195	1,95	3	50	12
SDR0300020	2,0	3	50	12
SDR03000205	2,05	3	60	18
SDR0300021	2,1	3	60	18
SDR03000215	2,15	3	60	18
SDR0300022	2,2	3	60	18
SDR0300023	2,3	3	60	18
SDR0300024	2,4	3	60	18
SDR0300025	2,5	3	60	18
SDR0300026	2,6	3	60	18
SDR03000265	2,65	3	60	18
SDR0300027	2,7	3	60	18
SDR03000275	2,75	3	60	18
SDR0300028	2,8	3	60	18
SDR0300029	2,9	3	60	18
SDR0300030	3,0	6	60	22
SDR0300031	3,1	6	60	22
SDR03000315	3,15	6	60	22
SDR0300032	3,2	6	60	22
SDR0300033	3,3	6	60	22
SDR0300034	3,4	6	60	22
SDR0300035	3,5	6	60	22
SDR0300036	3,6	6	60	22
SDR03000365	3,65	6	60	22
SDR0300037	3,7	6	60	22
SDR03000375	3,75	6	60	22
SDR0300038	3,8	6	60	22
SDR0300039	3,9	6	60	22
SDR0300040	4,0	6	60	22

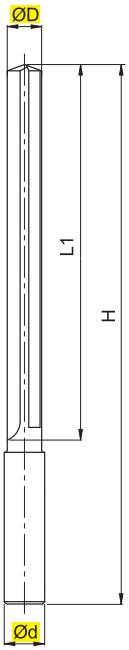
ART.	ØD	Ød	H	L1
SDR0300041	4,1	6	66	28
SDR0300042	4,2	6	66	28
SDR0300043	4,3	6	66	28
SDR03000435	4,35	6	66	28
SDR0300044	4,4	6	66	28
SDR03000445	4,45	6	66	28
SDR0300045	4,5	6	66	28
SDR0300046	4,6	6	66	28
SDR0300047	4,7	6	66	28
SDR03000475	4,75	6	66	28
SDR0300048	4,8	6	66	28
SDR0300049	4,9	6	66	28
SDR0300050	5,0	6	66	28
SDR0300051	5,1	6	66	28
SDR0300052	5,2	6	66	28
SDR0300053	5,3	6	66	28
SDR0300054	5,4	6	66	28
SDR0300055	5,5	6	66	28
SDR03000555	5,55	6	66	28
SDR0300056	5,6	6	66	28
SDR03000565	5,65	6	66	28
SDR0300057	5,7	6	66	28
SDR03000575	5,75	6	66	28
SDR0300058	5,8	6	66	28
SDR0300059	5,9	6	66	28
SDR0300060	6,0	6	66	28
SDR0300061	6,1	8	75	37
SDR0300062	6,2	8	75	37
SDR0300063	6,3	8	75	37
SDR0300064	6,4	8	75	37
SDR0300065	6,5	8	75	37
SDR0300066	6,6	8	75	37
SDR0300067	6,7	8	75	37
SDR0300068	6,8	8	75	37
SDR0300069	6,9	8	75	37
SDR0300070	7,0	8	75	37
SDR0300071	7,1	8	75	37
SDR0300072	7,2	8	75	37
SDR0300073	7,3	8	75	37
SDR0300074	7,4	8	75	37
SDR03000745	7,45	8	75	37
SDR0300075	7,5	8	75	37
SDR03000755	7,55	8	75	37
SDR0300076	7,6	8	75	37
SDR0300077	7,7	8	75	37

ART.	ØD	Ød	H	L1
SDR0300078	7,8	8	75	37
SDR0300079	7,9	8	75	37
SDR0300080	8,0	8	75	37
SDR0300081	8,1	10	89	45
SDR0300082	8,2	10	89	45
SDR0300083	8,3	10	89	45
SDR0300084	8,4	10	89	45
SDR0300085	8,5	10	89	45
SDR0300086	8,6	10	89	45
SDR0300087	8,7	10	89	45
SDR0300088	8,8	10	89	45
SDR0300089	8,9	10	89	45
SDR0300090	9,0	10	89	45
SDR0300091	9,1	10	89	45
SDR0300092	9,2	10	89	45
SDR0300093	9,3	10	89	45
SDR0300094	9,4	10	89	45
SDR0300095	9,5	10	89	45
SDR03000955	9,55	10	89	45
SDR0300096	9,6	10	89	45
SDR0300097	9,7	10	89	45
SDR0300098	9,8	10	89	45
SDR0300099	9,9	10	89	45
SDR0300100	10,0	10	89	45
SDR0300101	10,1	12	102	54
SDR0300102	10,2	12	102	54
SDR0300103	10,3	12	102	54
SDR0300104	10,4	12	102	54
SDR0300105	10,5	12	102	54
SDR03001055	10,55	12	102	54
SDR0300106	10,6	12	102	54
SDR0300107	10,7	12	102	54
SDR0300108	10,8	12	102	54
SDR0300109	10,9	12	102	54
SDR0300110	11,0	12	102	54
SDR0300111	11,1	12	102	54
SDR0300112	11,2	12	102	54
SDR0300113	11,3	12	102	54
SDR0300114	11,4	12	102	54
SDR0300115	11,5	12	102	54
SDR03001155	11,55	12	102	54
SDR0300116	11,6	12	102	54
SDR0300117	11,7	12	102	54
SDR0300118	11,8	12	102	54
SDR0300119	11,9	12	102	54

ART.	ØD	Ød	H	L1
SDR0300120	12,0	12	102	54
SDR0300121	12,1	14	105	58
SDR0300122	12,2	14	105	58
SDR0300125	12,5	14	105	58
SDR0300128	12,8	14	105	58
SDR0300129	12,9	14	105	58
SDR0300130	13,0	14	105	58
SDR0300131	13,1	14	105	58
SDR0300134	13,4	14	105	58
SDR0300135	13,5	14	105	58
SDR03001355	13,55	14	105	58
SDR0300136	13,6	14	105	58
SDR0300138	13,8	14	105	58
SDR0300140	14,0	14	105	58
SDR0300143	14,3	16	115	65
SDR0300145	14,5	16	115	65
SDR03001485	14,85	16	115	65
SDR0300150	15,0	16	115	65
SDR0300151	15,1	16	115	65
SDR03001525	15,25	16	115	65
SDR0300154	15,4	16	115	65
SDR0300155	15,5	16	115	65
SDR03001555	15,55	16	115	65
SDR0300158	15,8	16	115	65
SDR0300160	16,0	16	115	65
SDR0300163	16,3	18	123	73
SDR0300165	16,5	18	123	73
SDR0300168	16,8	18	123	73
SDR0300169	16,9	18	123	73
SDR0300170	17,0	18	123	73
SDR0300173	17,3	18	123	73
SDR0300175	17,5	18	123	73
SDR0300178	17,8	18	123	73
SDR0300179	17,9	18	123	73
SDR0300180	18,0	18	123	73
SDR03001835	18,35	20	131	79
SDR0300185	18,5	20	131	79
SDR0300188	18,8	20	131	79
SDR0300189	18,9	20	131	79
SDR0300190	19,0	20	131	79
SDR0300191	19,1	20	131	79
SDR0300193	19,3	20	131	79
SDR0300195	19,5	20	131	79
SDR0300198	19,8	20	131	79
SDR0300200	20,0	20	131	79

SDR0330

Ø 1 - 14



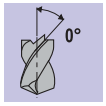
MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	○	125-300	70-140	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL		180-350					
	ACCIAIO ALTO LEGATO - ALLOY STEEL		200-325					
	INOX MARTENS. - STAINLESS STEEL MART		200-240					
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		180-230					
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	90-180	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	50-160	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	70-140	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	100-200	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,6
	RAME E SUE LEGHE - COPPER	○	90-110	90-180	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS	●	/	100-200	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,6
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY		200-320					
	TITANIO E SUE LEGHE - TITANIUM		400-1050[1]					
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]					
G	GRAFITE - GRAPHITE	●	_	40-70	0,04-0,09	0,1-0,14	0,14-0,25	0,25-0,35

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 70%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 40%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 70%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 40%

3xD



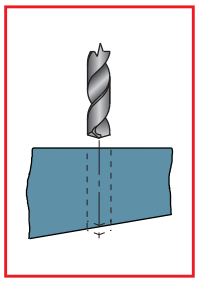
UMG

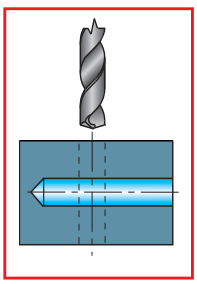
RIVESTIM. COATED
TIALN

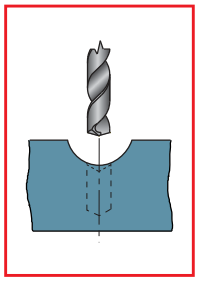
PAG. B 47

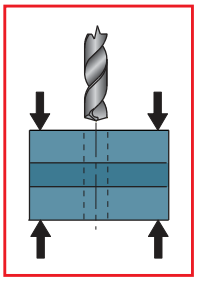
TOLLERANZE	D	d
TOLLERANCE RANGE	h6	h6

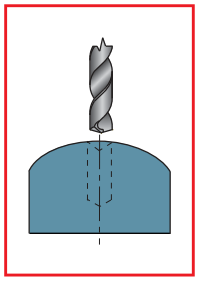
ART.	ØD	Ød	H	L1
SDR0330010	1,0	1,0	38	6
SDR0330015	1,5	1,5	38	8
SDR0330020	2,0	2,0	38	9
SDR0330025	2,5	2,5	38	13
SDR0330027	2,7	2,7	38	16
SDR0330030	3,0	3,0	38	16
SDR0330033	3,3	3,3	38	16
SDR0330035	3,5	3,5	50	16
SDR0330040	4,0	4,0	50	16
SDR0330042	4,2	4,2	50	16
SDR0330045	4,5	4,5	50	16
SDR0330050	5,0	5,0	50	19
SDR0330055	5,5	5,5	50	19
SDR0330060	6,0	6,0	50	19
SDR0330065	6,5	6,5	50	19
SDR0330068	6,8	6,8	63	19
SDR0330070	7,0	7,0	63	19
SDR0330080	8,0	8,0	63	19
SDR0330085	8,5	8,5	63	25
SDR0330100	10,0	10,0	70	25
SDR0330102	10,2	10,2	70	25
SDR0330120	12,0	12,0	75	25
SDR0330140	14,0	14,0	89	28

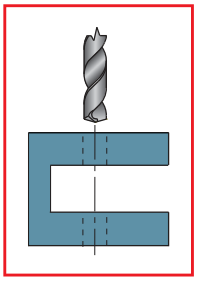






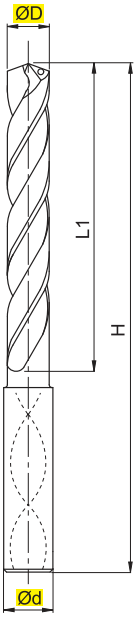






SDF0300

Ø 3 - 20



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

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

3xD | 30° | **DIN 6537** | **UMG**

RIVESTIM. COATED **TIALCN** | 140°

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	m7	h6

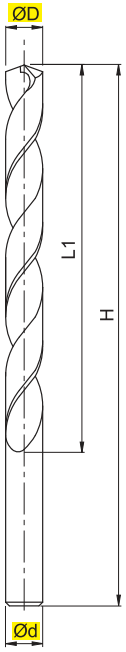
ART.	ØD	Ød	H	L1
SDF0300030	3,0	6	62	20
SDF0300031	3,1	6	62	20
SDF0300032	3,2	6	62	20
SDF0300033	3,3	6	62	20
SDF0300034	3,4	6	62	20
SDF0300035	3,5	6	62	20
SDF0300036	3,6	6	62	20
SDF0300037	3,7	6	62	20
SDF0300038	3,8	6	66	24
SDF0300039	3,9	6	66	24
SDF0300040	4,0	6	66	24
SDF0300041	4,1	6	66	24
SDF0300042	4,2	6	66	24
SDF0300043	4,3	6	66	24
SDF0300044	4,4	6	66	24
SDF0300045	4,5	6	66	24
SDF0300046	4,6	6	66	24
SDF0300047	4,7	6	66	24
SDF0300048	4,8	6	66	28
SDF0300049	4,9	6	66	28
SDF0300050	5,0	6	66	28
SDF0300051	5,1	6	66	28
SDF0300052	5,2	6	66	28
SDF0300053	5,3	6	66	28
SDF0300054	5,4	6	66	28
SDF0300055	5,5	6	66	28
SDF0300056	5,6	6	66	28
SDF0300057	5,7	6	66	28
SDF0300058	5,8	6	66	28
SDF0300059	5,9	6	66	28
SDF0300060	6,0	6	66	28
SDF0300061	6,1	8	79	34
SDF0300062	6,2	8	79	34
SDF0300063	6,3	8	79	34
SDF0300064	6,4	8	79	34
SDF0300065	6,5	8	79	34
SDF0300066	6,6	8	79	34
SDF0300067	6,7	8	79	34
SDF0300068	6,8	8	79	34
SDF0300069	6,9	8	79	34
SDF0300070	7,0	8	79	34
SDF0300071	7,1	8	79	41
SDF0300072	7,2	8	79	41
SDF0300073	7,3	8	79	41
SDF0300074	7,4	8	79	41

ART.	ØD	Ød	H	L1
SDF0300075	7,5	8	79	41
SDF0300076	7,6	8	79	41
SDF0300077	7,7	8	79	41
SDF0300078	7,8	8	79	41
SDF0300079	7,9	8	79	41
SDF0300080	8,0	8	79	41
SDF0300081	8,1	10	89	47
SDF0300082	8,2	10	89	47
SDF0300083	8,3	10	89	47
SDF0300084	8,4	10	89	47
SDF0300085	8,5	10	89	47
SDF0300086	8,6	10	89	47
SDF0300087	8,7	10	89	47
SDF0300088	8,8	10	89	47
SDF0300089	8,9	10	89	47
SDF0300090	9,0	10	89	47
SDF0300091	9,1	10	89	47
SDF0300092	9,2	10	89	47
SDF0300093	9,3	10	89	47
SDF0300094	9,4	10	89	47
SDF0300095	9,5	10	89	47
SDF0300096	9,6	10	89	47
SDF0300097	9,7	10	89	47
SDF0300098	9,8	10	89	47
SDF0300099	9,9	10	89	47
SDF0300100	10,0	10	89	47
SDF0300101	10,1	12	102	55
SDF0300102	10,2	12	102	55
SDF0300103	10,3	12	102	55
SDF0300104	10,4	12	102	55
SDF0300105	10,5	12	102	55
SDF0300106	10,6	12	102	55
SDF0300107	10,7	12	102	55
SDF0300108	10,8	12	102	55
SDF0300109	10,9	12	102	55
SDF0300110	11,0	12	102	55
SDF0300111	11,1	12	102	55
SDF0300112	11,2	12	102	55
SDF0300113	11,3	12	102	55
SDF0300114	11,4	12	102	55
SDF0300115	11,5	12	102	55
SDF0300116	11,6	12	102	55
SDF0300117	11,7	12	102	55
SDF0300118	11,8	12	102	55
SDF0300119	11,9	12	102	55

ART.	ØD	Ød	H	L1
SDF0300120	12,0	12	102	55
SDF0300125	12,5	14	107	60
SDF0300130	13,0	14	107	60
SDF0300135	13,5	14	107	60
SDF0300140	14,0	14	107	60
SDF0300145	14,5	16	115	65
SDF0300150	15,0	16	115	65
SDF0300155	15,5	16	115	65
SDF0300160	16,0	16	115	65
SDF0300165	16,5	18	123	73
SDF0300170	17,0	18	123	73
SDF0300175	17,5	18	123	73
SDF0300180	18,0	18	123	73
SDF0300185	18,5	20	131	79
SDF0300190	19,0	20	131	79
SDF0300195	19,5	20	131	79
SDF0300200	20,0	20	131	79

SDN0560

Ø 1 - 12



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	30-60	0,05-0,1	0,1-0,15	0,15-0,20
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	25-50	0,04-0,08	0,08-0,13	0,13-0,18
	ACCIAIO ALTO LEGATO - ALLOY STEEL		200-325				
	INOX MARTENS. - STAINLESS STEEL MART	○	200-240	10-20	0,02-0,03	0,03-0,05	0,05-0,07
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		180-230				
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	40-80	0,04-0,08	0,08-0,15	0,15-0,22
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	○	160-250	25-50	0,02-0,04	0,04-0,08	0,08-0,12
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	35-70	0,03-0,06	0,06-0,12	0,12-0,18
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	50-100	0,05-0,13	0,13-0,18	0,18-0,23
	RAME E SUE LEGHE - COPPER	●	90-110	45-90	0,05-0,09	0,09-0,14	0,14-0,19
	NON METALLICI - PLASTICS	○	/	40-80	0,05-0,13	0,13-0,18	0,18-0,23
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY		200-320				
	TITANIO E SUE LEGHE - TITANIUM		400-1050[1]				
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]				

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 60%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 30%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 60%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 30%

5xD | 30° | DIN 338 | MG | 118° | ECO LINE

PAG. B 47

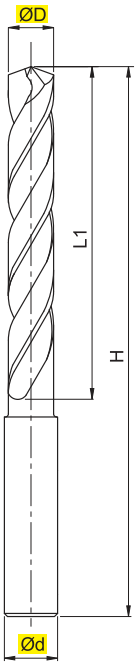
TOLLERANZE / TOLLERANCE RANGE	D	d
	h6	h6

ART.	ØD	Ød	H	L1
SDN0560010	1,0	1,0	34	12
SDN0560011	1,1	1,1	36	14
SDN0560012	1,2	1,2	38	16
SDN0560013	1,3	1,3	38	16
SDN0560014	1,4	1,4	40	18
SDN0560015	1,5	1,5	40	18
SDN0560016	1,6	1,6	43	20
SDN0560017	1,7	1,7	43	20
SDN0560018	1,8	1,8	46	22
SDN0560019	1,9	1,9	46	22
SDN0560020	2,0	2,0	49	24
SDN0560021	2,1	2,1	49	24
SDN0560022	2,2	2,2	53	27
SDN0560023	2,3	2,3	53	27
SDN0560024	2,4	2,4	57	30
SDN0560025	2,5	2,5	57	30
SDN0560026	2,6	2,6	57	30
SDN0560027	2,7	2,7	61	33
SDN0560028	2,8	2,8	61	33
SDN0560029	2,9	2,9	61	33
SDN0560030	3,0	3,0	61	33
SDN0560031	3,1	3,1	65	36
SDN0560032	3,2	3,2	65	36
SDN0560033	3,3	3,3	65	36
SDN0560034	3,4	3,4	70	39
SDN0560035	3,5	3,5	70	39
SDN0560036	3,6	3,6	70	39
SDN0560037	3,7	3,7	70	39
SDN0560038	3,8	3,8	75	43
SDN0560039	3,9	3,9	75	43
SDN0560040	4,0	4,0	75	43
SDN0560041	4,1	4,1	75	43
SDN0560042	4,2	4,2	75	43
SDN0560043	4,3	4,3	80	47
SDN0560044	4,4	4,4	80	47
SDN0560045	4,5	4,5	80	47
SDN0560046	4,6	4,6	80	47
SDN0560047	4,7	4,7	80	47
SDN0560048	4,8	4,8	86	52
SDN0560049	4,9	4,9	86	52
SDN0560050	5,0	5,0	86	52
SDN0560051	5,1	5,1	86	52
SDN0560052	5,2	5,2	86	52
SDN0560053	5,3	5,3	86	52
SDN0560054	5,4	5,4	93	57

ART.	ØD	Ød	H	L1
SDN0560055	5,5	5,5	93	57
SDN0560056	5,6	5,6	93	57
SDN0560057	5,7	5,7	93	57
SDN0560058	5,8	5,8	93	57
SDN0560059	5,9	5,9	93	57
SDN0560060	6,0	6,0	93	57
SDN0560061	6,1	6,1	101	63
SDN0560062	6,2	6,2	101	63
SDN0560063	6,3	6,3	101	63
SDN0560064	6,4	6,4	101	63
SDN0560065	6,5	6,5	101	63
SDN0560066	6,6	6,6	101	63
SDN0560067	6,7	6,7	101	63
SDN0560068	6,8	6,8	109	69
SDN0560069	6,9	6,9	109	69
SDN0560070	7,0	7,0	109	69
SDN0560071	7,1	7,1	109	69
SDN0560072	7,2	7,2	109	69
SDN0560073	7,3	7,3	109	69
SDN0560074	7,4	7,4	109	69
SDN0560075	7,5	7,5	109	69
SDN0560076	7,6	7,6	117	75
SDN0560077	7,7	7,7	117	75
SDN0560078	7,8	7,8	117	75
SDN0560079	7,9	7,9	117	75
SDN0560080	8,0	8,0	117	75
SDN0560081	8,1	8,1	117	75
SDN0560082	8,2	8,2	117	75
SDN0560083	8,3	8,3	117	75
SDN0560084	8,4	8,4	117	75
SDN0560085	8,5	8,5	117	75
SDN0560086	8,6	8,6	125	81
SDN0560087	8,7	8,7	125	81
SDN0560088	8,8	8,8	125	81
SDN0560089	8,9	8,9	125	81
SDN0560090	9,0	9,0	125	81
SDN0560092	9,2	9,2	125	81
SDN0560094	9,4	9,4	125	81
SDN0560096	9,6	9,6	133	87
SDN0560098	9,8	9,8	133	87
SDN0560100	10,0	10,0	133	87
SDN0560102	10,2	10,2	133	87
SDN0560105	10,5	10,5	133	87
SDN0560110	11,0	11,0	142	94
SDN0560120	12,0	12,0	151	101

SDR0500

Ø 0,5 - 20



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

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

PER I DIAMETRI COMPRESI DA Ø0,5÷1 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 70%
PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 50%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 30%
FOR DIAMETERS Ø0,5÷1 REFER TO PARAMETERS FN (Ø3÷6) REDUCED BY 70%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS FN (Ø3÷6) REDUCED BY 50%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS FN (Ø3÷6) REDUCED BY 30%

5xD | 30° | DIN 6539 | UMG

RIVESTIM. COATED TIALCN | 140°

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	m7	h6

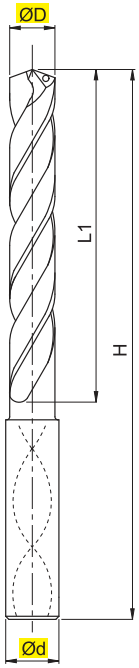
ART.	ØD	Ød	H	L1
SDR0500005	0,5	3	50	10
SDR0500006	0,6	3	50	10
SDR0500007	0,7	3	50	10
SDR0500008	0,8	3	50	10
SDR0500009	0,9	3	50	10
SDR0500010	1,0	3	50	10
SDR0500011	1,1	3	60	20
SDR0500012	1,2	3	60	20
SDR0500013	1,3	3	60	20
SDR0500014	1,4	3	60	20
SDR0500015	1,5	3	60	20
SDR0500016	1,6	3	60	20
SDR0500017	1,7	3	60	20
SDR05000175	1,75	3	60	20
SDR0500018	1,8	3	60	20
SDR0500019	1,9	3	60	20
SDR05000195	1,95	3	60	20
SDR0500020	2,0	3	60	20
SDR05000205	2,05	3	66	28
SDR0500021	2,1	3	66	28
SDR05000215	2,15	3	66	28
SDR0500022	2,2	3	66	28
SDR0500023	2,3	3	66	28
SDR0500024	2,4	3	66	28
SDR0500025	2,5	3	66	28
SDR0500026	2,6	3	66	28
SDR05000265	2,65	3	66	28
SDR0500027	2,7	3	66	28
SDR05000275	2,75	3	66	28
SDR0500028	2,8	3	66	28
SDR0500029	2,9	3	66	28
SDR0500030	3,0	6	66	29
SDR0500032	3,2	6	66	29
SDR0500033	3,3	6	66	29
SDR0500035	3,5	6	66	29
SDR0500038	3,8	6	66	29
SDR0500040	4,0	6	66	29
SDR0500042	4,2	6	77	39
SDR0500045	4,5	6	77	39
SDR0500048	4,8	6	77	39
SDR0500050	5,0	6	77	39
SDR0500051	5,1	6	77	39
SDR0500052	5,2	6	77	39
SDR0500055	5,5	6	77	39
SDR0500058	5,8	6	77	39

ART.	ØD	Ød	H	L1
SDR0500060	6,0	6	77	39
SDR0500062	6,2	8	90	52
SDR0500065	6,5	8	90	52
SDR0500068	6,8	8	90	52
SDR0500070	7,0	8	90	52
SDR0500072	7,2	8	90	52
SDR0500075	7,5	8	90	52
SDR0500078	7,8	8	90	52
SDR0500080	8,0	8	90	52
SDR0500082	8,2	10	102	60
SDR0500085	8,5	10	102	60
SDR0500088	8,8	10	102	60
SDR0500090	9,0	10	102	60
SDR0500092	9,2	10	102	60
SDR0500095	9,5	10	102	60
SDR0500098	9,8	10	102	60
SDR0500100	10,0	10	102	60
SDR0500102	10,2	12	120	72
SDR0500105	10,5	12	120	72
SDR0500108	10,8	12	120	72
SDR0500110	11,0	12	120	72
SDR0500112	11,2	12	120	72
SDR0500115	11,5	12	120	72
SDR0500118	11,8	12	120	72
SDR0500120	12,0	12	120	72
SDR0500125	12,5	14	130	82
SDR0500130	13,0	14	130	82
SDR0500135	13,5	14	130	82
SDR0500138	13,8	14	130	82
SDR0500140	14,0	14	130	82
SDR0500145	14,5	16	135	85
SDR0500148	14,8	16	135	85
SDR0500150	15,0	16	135	85
SDR0500155	15,5	16	135	85
SDR0500158	15,8	16	135	85
SDR0500160	16,0	16	135	85
SDR0500165	16,5	18	146	96
SDR0500168	16,8	18	146	96
SDR0500170	17,0	18	146	96
SDR0500175	17,5	18	146	96
SDR0500178	17,8	18	146	96
SDR0500180	18,0	18	146	96
SDR0500185	18,5	20	153	101
SDR0500188	18,8	20	153	101
SDR0500190	19,0	20	153	101

ART.	ØD	Ød	H	L1
SDR0500195	19,5	20	153	101
SDR0500198	19,8	20	153	101
SDR0500200	20,0	20	153	101

SDF0500

Ø 1 - 20



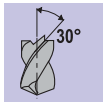
MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 60%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 30%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 60%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 30%

5xD



DIN 6537

UMG

RIVESTIM. COATED
TIALCN

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	m7	h6

ART.	ØD	Ød	H	L1
SDF0500010	1,0	3	55	8
SDF0500011	1,1	3	55	12
SDF0500012	1,2	3	55	12
SDF0500013	1,3	3	55	12
SDF0500014	1,4	3	55	12
SDF0500015	1,5	3	55	12
SDF0500016	1,6	3	65	16
SDF0500017	1,7	3	65	16
SDF0500018	1,8	3	65	16
SDF0500019	1,9	3	65	16
SDF0500020	2,0	3	65	16
SDF0500021	2,1	3	74	20
SDF0500022	2,2	3	74	20
SDF0500023	2,3	3	74	20
SDF0500024	2,4	3	74	20
SDF0500025	2,5	3	74	20
SDF0500026	2,6	3	81	23
SDF0500027	2,7	3	81	23
SDF0500028	2,8	3	81	23
SDF0500029	2,9	3	81	23
SDF0500030	3,0	6	66	29
SDF0500031	3,1	6	66	29
SDF05000315	3,15	6	66	29
SDF0500032	3,2	6	66	29
SDF0500033	3,3	6	66	29
SDF0500034	3,4	6	66	29
SDF0500035	3,5	6	66	29
SDF0500036	3,6	6	66	29
SDF05000365	3,65	6	66	29
SDF0500037	3,7	6	66	29
SDF0500038	3,8	6	66	29
SDF0500039	3,9	6	66	29
SDF0500040	4,0	6	66	29
SDF0500041	4,1	6	77	30
SDF0500042	4,2	6	77	30
SDF0500043	4,3	6	77	30
SDF05000435	4,35	6	77	30
SDF0500044	4,4	6	77	30
SDF05000445	4,45	6	77	30
SDF0500045	4,5	6	77	30
SDF0500046	4,6	6	77	30
SDF0500047	4,7	6	77	30
SDF05000475	4,75	6	77	39
SDF0500048	4,8	6	77	39
SDF0500049	4,9	6	77	39

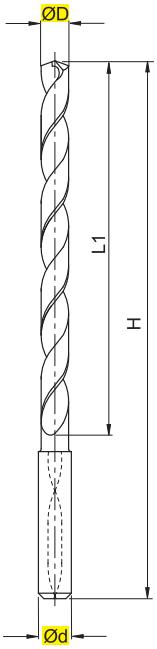
ART.	ØD	Ød	H	L1
SDF0500050	5,0	6	77	39
SDF0500051	5,1	6	77	39
SDF0500052	5,2	6	77	39
SDF0500053	5,3	6	77	39
SDF0500054	5,4	6	77	39
SDF0500055	5,5	6	77	39
SDF05000555	5,55	6	77	39
SDF0500056	5,6	6	77	39
SDF05000565	5,65	6	77	39
SDF0500057	5,7	6	77	39
SDF05000575	5,75	6	77	39
SDF0500058	5,8	6	77	39
SDF0500059	5,9	6	77	39
SDF0500060	6,0	6	77	39
SDF0500061	6,1	8	90	52
SDF0500062	6,2	8	90	52
SDF0500063	6,3	8	90	52
SDF0500064	6,4	8	90	52
SDF0500065	6,5	8	90	52
SDF0500066	6,6	8	90	52
SDF0500067	6,7	8	90	52
SDF0500068	6,8	8	90	52
SDF0500069	6,9	8	90	52
SDF0500070	7,0	8	90	52
SDF0500071	7,1	8	90	52
SDF0500072	7,2	8	90	52
SDF0500073	7,3	8	90	52
SDF0500074	7,4	8	90	52
SDF05000745	7,45	8	90	52
SDF0500075	7,5	8	90	52
SDF05000755	7,55	8	90	52
SDF0500076	7,6	8	90	52
SDF0500077	7,7	8	90	52
SDF0500078	7,8	8	90	52
SDF0500079	7,9	8	90	52
SDF0500080	8,0	8	90	52
SDF0500081	8,1	10	102	60
SDF0500082	8,2	10	102	60
SDF0500083	8,3	10	102	60
SDF0500084	8,4	10	102	60
SDF0500085	8,5	10	102	60
SDF0500086	8,6	10	102	60
SDF0500087	8,7	10	102	60
SDF0500088	8,8	10	102	60
SDF0500089	8,9	10	102	60

ART.	ØD	Ød	H	L1
SDF0500090	9,0	10	102	60
SDF0500091	9,1	10	102	60
SDF0500092	9,2	10	102	60
SDF0500093	9,3	10	102	60
SDF0500094	9,4	10	102	60
SDF0500095	9,5	10	102	60
SDF05000955	9,55	10	102	60
SDF0500096	9,6	10	102	60
SDF0500097	9,7	10	102	60
SDF0500098	9,8	10	102	60
SDF0500099	9,9	10	102	60
SDF0500100	10,0	10	102	60
SDF0500101	10,1	12	120	72
SDF0500102	10,2	12	120	72
SDF0500103	10,3	12	120	72
SDF0500104	10,4	12	120	72
SDF0500105	10,5	12	120	72
SDF05001055	10,55	12	120	72
SDF0500106	10,6	12	120	72
SDF0500107	10,7	12	120	72
SDF0500108	10,8	12	120	72
SDF0500109	10,9	12	120	72
SDF0500110	11,0	12	120	72
SDF0500111	11,1	12	120	72
SDF0500112	11,2	12	120	72
SDF0500113	11,3	12	120	72
SDF0500114	11,4	12	120	72
SDF0500115	11,5	12	120	72
SDF05001155	11,55	12	120	72
SDF0500116	11,6	12	120	72
SDF0500117	11,7	12	120	72
SDF0500118	11,8	12	120	72
SDF0500119	11,9	12	120	72
SDF0500120	12,0	12	120	72
SDF0500125	12,5	14	130	82
SDF0500128	12,8	14	130	82
SDF0500129	12,9	14	130	82
SDF0500130	13,0	14	130	82
SDF0500131	13,1	14	130	82
SDF0500134	13,4	14	130	82
SDF0500135	13,5	14	130	82
SDF05001355	13,55	14	130	82
SDF0500136	13,6	14	130	82
SDF0500138	13,8	14	130	82
SDF0500140	14,0	14	130	82

ART.	ØD	Ød	H	L1
SDF0500143	14,3	16	135	85
SDF0500145	14,5	16	135	85
SDF05001485	14,85	16	135	85
SDF0500150	15,0	16	135	85
SDF0500151	15,1	16	135	85
SDF05001525	15,25	16	135	85
SDF0500154	15,4	16	135	85
SDF0500155	15,5	16	135	85
SDF05001555	15,55	16	135	85
SDF0500158	15,8	16	135	85
SDF0500160	16,0	16	135	85
SDF0500163	16,3	18	146	96
SDF0500165	16,5	18	146	96
SDF0500168	16,8	18	146	96
SDF0500169	16,9	18	146	96
SDF0500170	17,0	18	146	96
SDF0500173	17,3	18	146	96
SDF0500175	17,5	18	146	96
SDF0500178	17,8	18	146	96
SDF0500179	17,9	18	146	96
SDF0500180	18,0	18	146	96
SDF05001835	18,35	20	153	101
SDF0500185	18,5	20	153	101
SDF0500188	18,8	20	153	101
SDF0500189	18,9	20	153	101
SDF0500190	19,0	20	153	101
SDF0500191	19,1	20	153	101
SDF0500193	19,3	20	153	101
SDF0500195	19,5	20	153	101
SDF0500198	19,8	20	153	101
SDF0500200	20,0	20	153	101

SDF0550

Ø 3 - 16

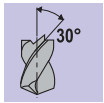


MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL		125-300					
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL		180-350					
	ACCIAIO ALTO LEGATO - ALLOY STEEL	○	200-325	45-90	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	30-60	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	●	180-230	20-40	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON		180-260					
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE		160-250					
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	40-80	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM		60-130					
	RAME E SUE LEGHE - COPPER		90-110					
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	20-40	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]					

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

5xD



UMG

RIVESTIM. COATED
TIALN

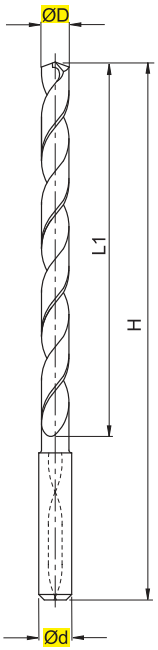
PAG. B 47

TOLLERANZE	D	d
TOLLERANCE RANGE	h7	h6

ART.	ØD	Ød	H	L1
SDF0550030	3,0	6	66	28
SDF0550033	3,3	6	66	28
SDF0550035	3,5	6	66	28
SDF0550038	3,8	6	74	36
SDF0550040	4,0	6	74	36
SDF0550042	4,2	6	74	36
SDF0550045	4,5	6	74	36
SDF0550048	4,8	6	82	44
SDF0550050	5,0	6	82	44
SDF0550055	5,5	6	82	44
SDF0550058	5,8	6	82	44
SDF0550060	6,0	6	82	44
SDF0550065	6,5	8	91	53
SDF0550068	6,8	8	91	53
SDF0550070	7,0	8	91	53
SDF0550075	7,5	8	91	53
SDF0550078	7,8	8	91	53
SDF0550080	8,0	8	91	53
SDF0550085	8,5	10	103	61
SDF0550088	8,8	10	103	61
SDF0550090	9,0	10	103	61
SDF0550095	9,5	10	103	61
SDF0550098	9,8	10	103	61
SDF0550100	10,0	10	103	61
SDF0550102	10,2	12	118	71
SDF0550105	10,5	12	118	71
SDF0550108	10,8	12	118	71
SDF0550110	11,0	12	118	71
SDF0550115	11,5	12	118	71
SDF0550118	11,8	12	118	71
SDF0550120	12,0	12	118	71
SDF0550125	12,5	14	124	77
SDF0550128	12,8	14	124	77
SDF0550130	13,0	14	124	77
SDF0550135	13,5	14	124	77
SDF0550140	14,0	14	124	77
SDF0550145	14,5	16	133	83
SDF0550150	15,0	16	133	83
SDF0550155	15,5	16	133	83
SDF0550160	16,0	16	133	83

SDF0510

Ø 3 - 20

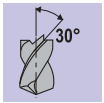


MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	70-140	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	○	180-350	40-80	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	○	200-325	35-70	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	○	200-240	35-70	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		180-230					
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE		160-250					
	GHISA MALLEABILE - MALLEABLE CAST IRON		130-230					
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	100-200	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	●	90-110	90-180	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS	●	/	100-200	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY		200-320					
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	35-80	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]					

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

5xD



UMG

RIVESTIM. COATED
TIALN

PAG. B 47

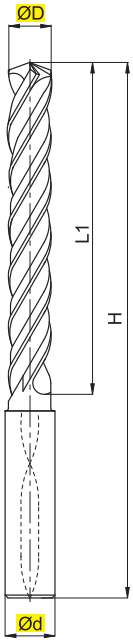
TOLLERANZE / TOLLERANCE RANGE	D	d
	h7	h6

ART.	ØD	Ød	H	L1
SDF0510030	3,0	6	66	28
SDF0510033	3,3	6	66	28
SDF0510035	3,5	6	66	28
SDF0510038	3,8	6	74	36
SDF0510040	4,0	6	74	36
SDF0510042	4,2	6	74	36
SDF0510045	4,5	6	74	36
SDF0510048	4,8	6	82	44
SDF0510050	5,0	6	82	44
SDF0510055	5,5	6	82	44
SDF0510058	5,8	6	82	44
SDF0510060	6,0	6	82	44
SDF0510065	6,5	8	91	53
SDF0510068	6,8	8	91	53
SDF0510070	7,0	8	91	53
SDF0510075	7,5	8	91	53
SDF0510078	7,8	8	91	53
SDF0510080	8,0	8	91	53
SDF0510085	8,5	10	103	61
SDF0510088	8,8	10	103	61
SDF0510090	9,0	10	103	61
SDF0510095	9,5	10	103	61
SDF0510098	9,8	10	103	61
SDF0510100	10,0	10	103	61
SDF0510102	10,2	12	118	71
SDF0510105	10,5	12	118	71
SDF0510108	10,8	12	118	71
SDF0510110	11,0	12	118	71
SDF0510115	11,5	12	118	71
SDF0510118	11,8	12	118	71
SDF0510120	12,0	12	118	71
SDF0510125	12,5	14	124	77
SDF0510128	12,8	14	124	77
SDF0510130	13,0	14	124	77
SDF0510135	13,5	14	124	77
SDF0510140	14,0	14	124	77
SDF0510145	14,5	16	133	83
SDF0510150	15,0	16	133	83
SDF0510155	15,5	16	133	83
SDF0510160	16,0	16	133	83
SDF0510165	16,5	18	146	72
SDF0510170	17,0	18	146	72
SDF0510175	17,5	18	146	72
SDF0510180	18,0	18	146	72
SDF0510185	18,5	20	153	75

ART.	ØD	Ød	H	L1
SDF0510190	19,0	20	153	75
SDF0510195	19,5	20	153	75
SDF0510200	20,0	20	153	75

SDF0590

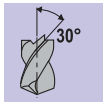
Ø 4 - 20



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø4÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	○	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	○	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,5
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,4
	INOX MARTENS. - STAINLESS STEEL MART	○	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,2
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		180-230					
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	90-180	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	50-100	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	70-140	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM		60-130					
	RAME E SUE LEGHE - COPPER		90-110					
	NON METALLICI - PLASTICS	○	/	50-100	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,6
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	35-80	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

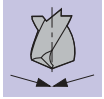
● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION - EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE
○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION - MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

5xD



UMG

RIVESTIM. COATED
TIALCN

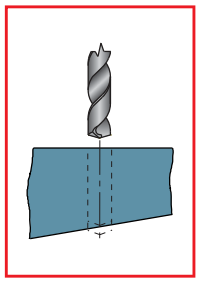


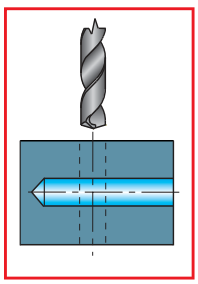
PAG. B 47

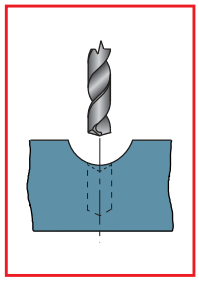
TOLLERANZE / TOLLERANCE RANGE	D	d
	h7	h6

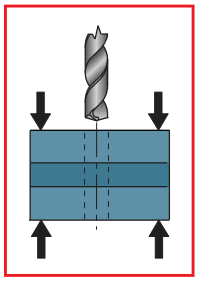
ART.	ØD	Ød	H	L1
SDF0590040	4,0	6	66	29
SDF0590042	4,2	6	77	39
SDF0590045	4,5	6	77	39
SDF0590048	4,8	6	77	39
SDF0590050	5,0	6	77	39
SDF0590051	5,1	6	77	39
SDF0590052	5,2	6	77	39
SDF0590055	5,5	6	77	39
SDF0590058	5,8	6	77	39
SDF0590060	6,0	6	77	39
SDF0590062	6,2	8	90	52
SDF0590065	6,5	8	90	52
SDF0590068	6,8	8	90	52
SDF0590070	7,0	8	90	52
SDF0590072	7,2	8	90	52
SDF0590075	7,5	8	90	52
SDF0590078	7,8	8	90	52
SDF0590080	8,0	8	90	52
SDF0590082	8,2	10	102	60
SDF0590085	8,5	10	102	60
SDF0590088	8,8	10	102	60
SDF0590090	9,0	10	102	60
SDF0590092	9,2	10	102	60
SDF0590095	9,5	10	102	60
SDF0590098	9,8	10	102	60
SDF0590100	10,0	10	102	60
SDF0590102	10,2	12	120	72
SDF0590105	10,5	12	120	72
SDF0590108	10,8	12	120	72
SDF0590110	11,0	12	120	72
SDF0590112	11,2	12	120	72
SDF0590115	11,5	12	120	72
SDF0590118	11,8	12	120	72
SDF0590120	12,0	12	120	72
SDF0590125	12,5	14	130	82
SDF0590128	12,8	14	130	82
SDF0590130	13,0	14	130	82
SDF0590135	13,5	14	130	82
SDF0590138	13,8	14	130	82
SDF0590140	14,0	14	130	82
SDF0590145	14,5	16	135	85
SDF0590148	14,8	16	135	85
SDF0590150	15,0	16	135	85
SDF0590155	15,5	16	135	85
SDF0590158	15,8	16	135	85

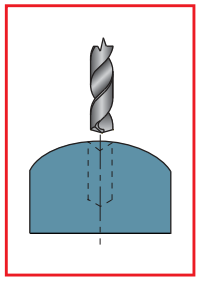
ART.	ØD	Ød	H	L1
SDF0590160	16,0	16	135	85
SDF0590165	16,5	18	146	96
SDF0590168	16,8	18	146	96
SDF0590170	17,0	18	146	96
SDF0590175	17,5	18	146	96
SDF0590178	17,8	18	146	96
SDF0590180	18,0	18	146	96
SDF0590185	18,5	20	153	101
SDF0590188	18,8	20	153	101
SDF0590190	19,0	20	153	101
SDF0590195	19,5	20	153	101
SDF0590198	19,8	20	153	101
SDF0590200	20,0	20	153	101

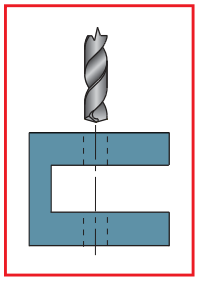






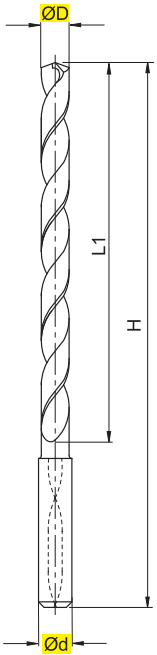






SDF0800

Ø 1 - 12



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 70%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 40%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 70%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 40%

8xD | 30° | **DIN 6537** | **UMG**

RIVESTIM. COATED **TIALN** | 140°

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	m7	h6

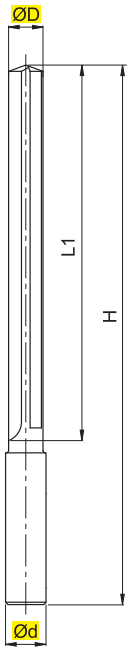
ART.	ØD	Ød	H	L1
SDF0800010	1,0	3	55	11
SDF0800011	1,1	3	55	17
SDF0800012	1,2	3	55	17
SDF0800013	1,3	3	55	17
SDF0800014	1,4	3	55	17
SDF0800015	1,5	3	55	17
SDF0800016	1,6	3	65	22
SDF0800017	1,7	3	65	22
SDF0800018	1,8	3	65	22
SDF0800019	1,9	3	65	22
SDF0800020	2,0	3	65	22
SDF0800021	2,1	3	74	28
SDF0800022	2,2	3	74	28
SDF0800023	2,3	3	74	28
SDF0800024	2,4	3	74	28
SDF0800025	2,5	3	74	28
SDF0800026	2,6	3	81	32
SDF0800027	2,7	3	81	32
SDF0800028	2,8	3	81	32
SDF0800029	2,9	3	81	32
SDF0800030	3,0	6	72	34
SDF0800031	3,1	6	72	34
SDF0800032	3,2	6	72	34
SDF0800033	3,3	6	72	34
SDF0800034	3,4	6	72	34
SDF0800035	3,5	6	72	34
SDF0800036	3,6	6	72	34
SDF0800037	3,7	6	72	34
SDF0800038	3,8	6	81	43
SDF0800039	3,9	6	81	43
SDF0800040	4,0	6	81	43
SDF0800041	4,1	6	81	43
SDF0800042	4,2	6	81	43
SDF0800043	4,3	6	81	43
SDF0800044	4,4	6	81	43
SDF0800045	4,5	6	81	43
SDF0800046	4,6	6	81	43
SDF0800047	4,7	6	81	43
SDF0800048	4,8	6	95	57
SDF0800049	4,9	6	95	57
SDF0800050	5,0	6	95	57
SDF0800051	5,1	6	95	57
SDF0800052	5,2	6	95	57
SDF0800053	5,3	6	95	57
SDF0800054	5,4	6	95	57

ART.	ØD	Ød	H	L1
SDF0800055	5,5	6	95	57
SDF0800056	5,6	6	95	57
SDF0800057	5,7	6	95	57
SDF0800058	5,8	6	95	57
SDF0800059	5,9	6	95	57
SDF0800060	6,0	6	95	57
SDF0800061	6,1	8	114	76
SDF0800062	6,2	8	114	76
SDF0800063	6,3	8	114	76
SDF0800064	6,4	8	114	76
SDF0800065	6,5	8	114	76
SDF0800066	6,6	8	114	76
SDF0800067	6,7	8	114	76
SDF0800068	6,8	8	114	76
SDF0800069	6,9	8	114	76
SDF0800070	7,0	8	114	76
SDF0800071	7,1	8	114	76
SDF0800072	7,2	8	114	76
SDF0800073	7,3	8	114	76
SDF0800074	7,4	8	114	76
SDF0800075	7,5	8	114	76
SDF0800076	7,6	8	114	76
SDF0800077	7,7	8	114	76
SDF0800078	7,8	8	114	76
SDF0800079	7,9	8	114	76
SDF0800080	8,0	8	114	76
SDF0800081	8,1	10	142	95
SDF0800082	8,2	10	142	95
SDF0800083	8,3	10	142	95
SDF0800084	8,4	10	142	95
SDF0800085	8,5	10	142	95
SDF0800086	8,6	10	142	95
SDF0800087	8,7	10	142	95
SDF0800088	8,8	10	142	95
SDF0800089	8,9	10	142	95
SDF0800090	9,0	10	142	95
SDF0800091	9,1	10	142	95
SDF0800092	9,2	10	142	95
SDF0800093	9,3	10	142	95
SDF0800094	9,4	10	142	95
SDF0800095	9,5	10	142	95
SDF0800096	9,6	10	142	95
SDF0800097	9,7	10	142	95
SDF0800098	9,8	10	142	95
SDF0800099	9,9	10	142	95

ART.	ØD	Ød	H	L1
SDF0800100	10,0	10	142	95
SDF0800101	10,1	12	162	114
SDF0800102	10,2	12	162	114
SDF0800103	10,3	12	162	114
SDF0800104	10,4	12	162	114
SDF0800105	10,5	12	162	114
SDF0800106	10,6	12	162	114
SDF0800107	10,7	12	162	114
SDF0800108	10,8	12	162	114
SDF0800109	10,9	12	162	114
SDF0800110	11,0	12	162	114
SDF0800111	11,1	12	162	114
SDF0800112	11,2	12	162	114
SDF0800113	11,3	12	162	114
SDF0800114	11,4	12	162	114
SDF0800115	11,5	12	162	114
SDF0800116	11,6	12	162	114
SDF0800117	11,7	12	162	114
SDF0800118	11,8	12	162	114
SDF0800119	11,9	12	162	114
SDF0800120	12,0	12	162	114

SDF0930

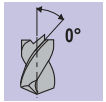
Ø 4 - 20



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø4÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	○	125-300	70-140	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL		180-350					
	ACCIAIO ALTO LEGATO - ALLOY STEEL		200-325					
	INOX MARTENS. - STAINLESS STEEL MART		200-240					
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST		180-230					
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	100-200	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	90-180	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS	●	/	100-200	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY		200-320					
	TITANIO E SUE LEGHE - TITANIUM		400-1050[1]					
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]					
G	GRAFITE - GRAPHITE	●	_	30-60	0,04-0,08	0,08-0,12	0,12-0,16	0,16-0,25

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

9xD



UMG

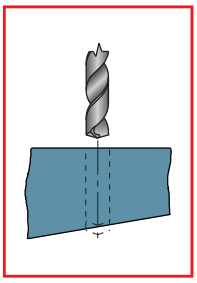
RIVESTIM. COATED
TIALCN

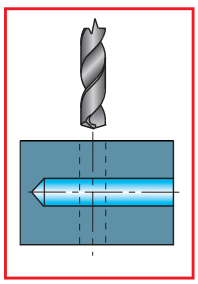
PAG. B 47

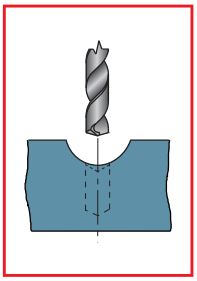
TOLLERANZE	D	d
TOLLERANCE RANGE	m7	h6

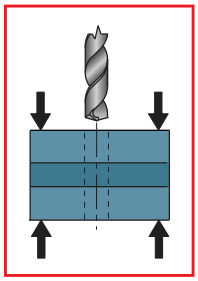
ART.	ØD	Ød	H	L1
SDF0930040	4,0	6	90	50
SDF0930042	4,2	6	90	50
SDF0930045	4,5	6	90	50
SDF0930048	4,8	6	90	50
SDF0930050	5,0	6	100	60
SDF0930052	5,2	6	100	60
SDF0930055	5,5	6	100	60
SDF0930058	5,8	6	100	60
SDF0930060	6,0	6	100	60
SDF0930062	6,2	8	120	80
SDF0930065	6,5	8	120	80
SDF0930068	6,8	8	120	80
SDF0930070	7,0	8	120	80
SDF0930072	7,2	8	120	80
SDF0930075	7,5	8	120	80
SDF0930078	7,8	8	120	80
SDF0930080	8,0	8	120	80
SDF0930082	8,2	10	150	105
SDF0930085	8,5	10	150	105
SDF0930088	8,8	10	150	105
SDF0930090	9,0	10	150	105
SDF0930092	9,2	10	150	105
SDF0930095	9,5	10	150	105
SDF0930098	9,8	10	150	105
SDF0930100	10,0	10	150	105
SDF0930102	10,2	12	180	125
SDF0930105	10,5	12	180	125
SDF0930108	10,8	12	180	125
SDF0930110	11,0	12	180	125
SDF0930112	11,2	12	180	125
SDF0930115	11,5	12	180	125
SDF0930118	11,8	12	180	125
SDF0930120	12,0	12	180	125
SDF0930125	12,5	14	200	150
SDF0930128	12,8	14	200	150
SDF0930130	13,0	14	200	150
SDF0930135	13,5	14	200	150
SDF0930138	13,8	14	200	150
SDF0930140	14,0	14	200	150
SDF0930145	14,5	16	220	170
SDF0930148	14,8	16	220	170
SDF0930150	15,0	16	220	170
SDF0930155	15,5	16	220	170
SDF0930158	15,8	16	220	170
SDF0930160	16,0	16	220	170

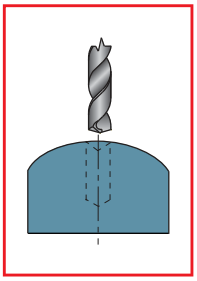
ART.	ØD	Ød	H	L1
SDR0300165	16,5	18	240	190
SDF0930168	16,8	18	240	190
SDF0930170	17,0	18	240	190
SDF0930175	17,5	18	240	190
SDF0930178	17,8	18	240	190
SDF0930180	18,0	18	240	190
SDF0930185	18,5	20	250	197
SDF0930188	18,8	20	250	197
SDF0930190	19,0	20	250	197
SDF0930195	19,5	20	250	197
SDF0930198	19,8	20	250	197
SDF0930200	20,0	20	250	197

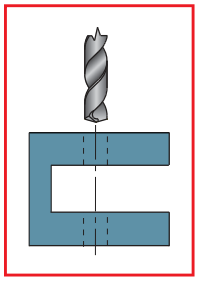






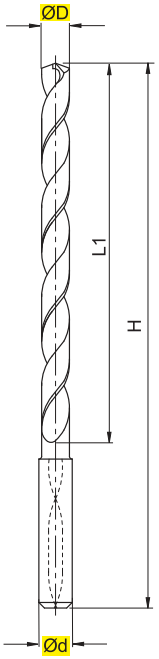






SDF1200

Ø 1 - 16



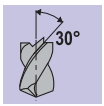
MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø3÷6	Ø6÷10	Ø10÷14	Ø14÷20
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	60-120	0,1-0,2	0,2-0,3	0,3-0,4	0,4-0,55
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	50-100	0,08-0,15	0,15-0,25	0,25-0,35	0,35-0,50
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	40-80	0,06-0,12	0,12-0,2	0,2-0,28	0,28-0,40
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	20-40	0,03-0,06	0,06-0,1	0,1-0,14	0,14-0,20
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	○	180-230	15-30	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
K	GHISA GRIGIA - GREY CAST IRON	○	180-260	80-160	0,08-0,15	0,15-0,29	0,29-0,43	0,43-0,64
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	40-80	0,04-0,08	0,08-0,16	0,16-0,24	0,24-0,36
	GHISA MALLEABILE - MALLEABLE CAST IRON	○	130-230	50-100	0,06-0,12	0,12-0,24	0,24-0,36	0,36-0,54
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	○	60-130	90-180	0,13-0,25	0,25-0,35	0,35-0,45	0,45-0,60
	RAME E SUE LEGHE - COPPER	○	90-110	80-160	0,09-0,18	0,18-0,28	0,28-0,38	0,38-0,52
	NON METALLICI - PLASTICS		/					
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	30-60	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	30-60	0,04-0,08	0,08-0,13	0,13-0,18	0,18-0,24
H	ACCIAIO TEMPRATO - HARDENED STEEL	○	45-60[2]	20-50	0,02-0,05	0,05-0,09	0,09-0,13	0,13-0,19

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 70%
PER I DIAMETRI COMPRESI DA Ø2÷3 UTILIZZARE I PARAMETRI fn (Ø3÷6) RIDOTTI DEL 40%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 70%
FOR DIAMETERS Ø2÷3 REFER TO PARAMETERS fn (Ø3÷6) REDUCED BY 40%

12xD



UMG

RIVESTIM. COATED
TIALN

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	m7	h6

ART.	ØD	Ød	H	L1
SDF1200010	1,0	3	55	15
SDF1200011	1,1	3	55	23
SDF1200012	1,2	3	55	23
SDF1200013	1,3	3	55	23
SDF1200014	1,4	3	55	23
SDF1200015	1,5	3	55	23
SDF1200016	1,6	3	65	30
SDF1200017	1,7	3	65	30
SDF1200018	1,8	3	65	30
SDF1200019	1,9	3	65	30
SDF1200020	2,0	3	65	30
SDF1200021	2,1	3	74	38
SDF1200022	2,2	3	74	38
SDF1200023	2,3	3	74	38
SDF1200024	2,4	3	74	38
SDF1200025	2,5	3	74	38
SDF1200026	2,6	3	81	44
SDF1200027	2,7	3	81	44
SDF1200028	2,8	3	81	44
SDF1200029	2,9	3	81	44
SDF1200030	3,0	6	92	54
SDF1200033	3,3	6	92	54
SDF1200035	3,5	6	92	54
SDF1200038	3,8	6	102	64
SDF1200040	4,0	6	102	64
SDF1200042	4,2	6	102	64
SDF1200045	4,5	6	102	64
SDF1200048	4,8	6	116	78
SDF1200050	5,0	6	116	78
SDF1200055	5,5	6	116	78
SDF1200058	5,8	6	116	78
SDF1200060	6,0	6	116	78
SDF1200065	6,5	8	146	108
SDF1200068	6,8	8	146	108
SDF1200070	7,0	8	146	108
SDF1200075	7,5	8	146	108
SDF1200078	7,8	8	146	108
SDF1200080	8,0	8	146	108
SDF1200085	8,5	10	162	120
SDF1200088	8,8	10	162	120
SDF1200090	9,0	10	162	120
SDF1200095	9,5	10	162	120
SDF1200098	9,8	10	162	120
SDF1200100	10,0	10	162	120
SDF1200102	10,2	12	204	156

ART.	ØD	Ød	H	L1
SDF1200105	10,5	12	204	156
SDF1200108	10,8	12	204	156
SDF1200110	11,0	12	204	156
SDF1200115	11,5	12	204	156
SDF1200118	11,8	12	204	156
SDF1200120	12,0	12	204	156
SDF1200125	12,5	14	230	182
SDF1200128	12,8	14	230	182
SDF1200130	13,0	14	230	182
SDF1200135	13,5	14	230	182
SDF1200140	14,0	14	230	182
SDF1200145	14,5	16	260	208
SDF1200150	15,0	16	260	208
SDF1200155	15,5	16	260	208
SDF1200160	16,0	16	260	208

NOTE :

PUNTE A GRADINO

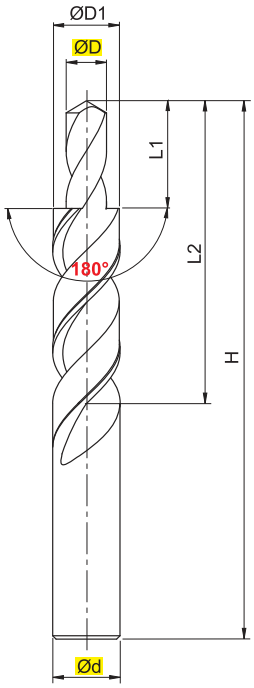
STEP DRILLS / STUFENBOHRER / POINTES A GRADIN /
PUNTAS ESCALÓN

SAU
QUALITY TOOLS ENGINEERING

SDN0101

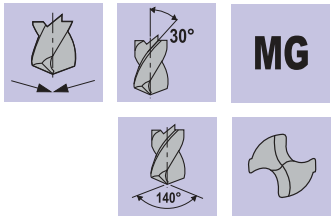
Ø 3,4 - 11

GENERICO / *ALL PURPOSE*



> PUNTA A GRADINO
> ANGOLO DI SVASATURA 180°
> PER ALLOGGIAMENTI TESTE VITI SECONDO DIN 84-912-6912-7513-7984

> STEP DRILL
> COUNTER SINK 180°
> SFOR HEAD SCREW DIN 84-912-6912-7513-7984



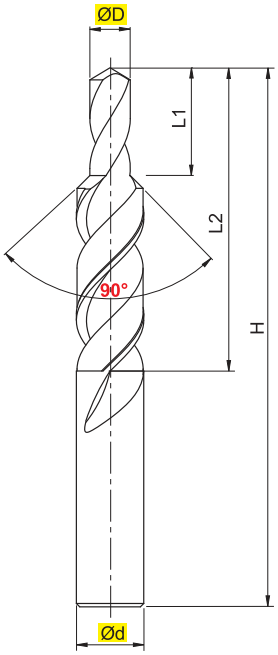
PAG. B 47

ART.	ØD	Ød	ØD1	H	L1	L2
SDN0101030	3,4	6	6	66	9	28
SDN0101040	4,5	8	8	80	11	37
SDN0101050	5,5	10	10	89	13	43
SDN0101060	6,6	12	11	95	15	47
SDN0101080	9,0	16	15	110	19	56
SDN0101100	11,0	18	18	123	23	62

SDR0102

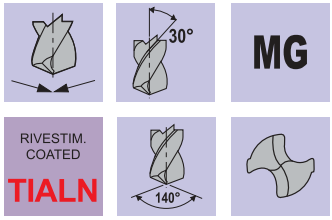
Ø 2,5 - 14

GENERICO / *ALL PURPOSE*



> PUNTA A GRADINO
> ANGOLO DI SVASATURA 90°
> RIVESTIMENTO TIALN

> STEP DRILL
> CHAMFER 90°
> TIALN COATED



PAG. B 47

ART.	ØD	Ød	H	L1	L2
SDR0102030	2,5	6	66	8,8	20
SDR0102040	3,3	6	66	11,4	24
SDR0102050	4,2	6	66	13,6	28
SDR0102060	5,0	8	79	16,5	34
SDR0102080	6,8	10	89	21,0	47
SDR0102100	8,5	12	102	25,5	55
SDR0102120	10,2	14	107	30,0	60
SDR0102140	12,0	16	115	34,5	65
SDR0102160	14,0	18	123	38,5	73

NOTE :

PUNTE A CENTRARE

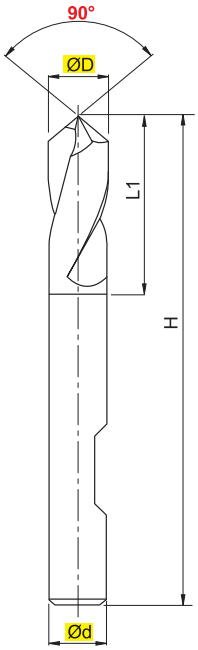
CENTER DRILLS / ZENTRIERBOHRER / POINTES A CENTRER /
BROCAS CENTRADORAS

SAU
QUALITY TOOLS ENGINEERING

SCR0184

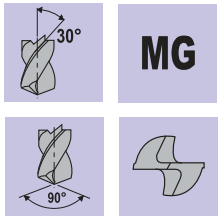
Ø 3 - 20

GENERICO / *ALL PURPOSE*



> PUNTA A CENTRARE PER MACCHINE A CONTROLLO NUMERICO
> ANGOLO DI TESTA 90°
> ATTACCO DIN 6535 HB
> RIVESTIMENTO TIALN

> CENTER DRILL ON NC-AND DRILLING MACHINES
> HEAD ANGLE 90°
> SHANK DIN 6535 HB
> TIALN COATED



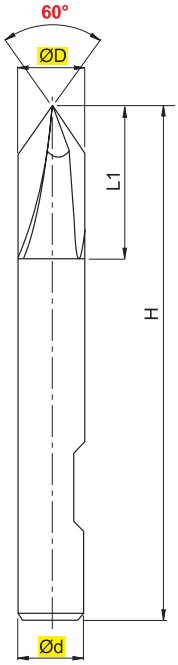
PAG. B 47

ART.	ØD	Ød	H	L1	Z
SCR0184030	3	3	38	8	2
SCR0184040	4	4	50	10	2
SCR0184050	5	5	50	13	2
SCR0184060	6	6	57	13	2
SCR0184080	8	8	63	19	2
SCR0184100	10	10	66	20	2
SCR0184120	12	12	73	22	2
SCR0184160	16	16	82	24	2
SCR0184200	20	20	92	30	2

SCR0183

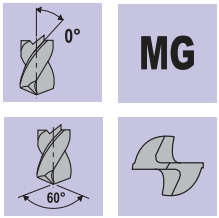
Ø 4 - 20

GENERICO / *ALL PURPOSE*



> PUNTA A CENTRARE IN M.D.I. DIN 6527
> ANGOLO DI TESTA 60°
> ELICA A 4/6 TAGLI - ATTACCO DIN 6535 HB
> RIVESTIMENTO TIALN

> HM CENTER DRILL DIN 6527
> HEAD ANGLE 60°
> 4/6 CUTTING EDGES FLUTE - SHANK DIN 6535 HB
> TIALN COATED



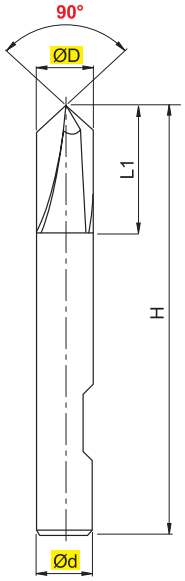
PAG. B 47

ART.	ØD	Ød	H	L1	L2
SCR0183040	4	4	54	4	4
SCR0183060	6	6	57	6	4
SCR0183080	8	8	63	8	5
SCR0183100	10	10	72	10	6
SCR0183120	12	12	83	12	6
SCR0183160	16	16	92	16	6
SCR0183200	20	20	104	20	6

SCR0187

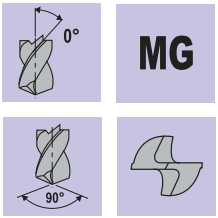
Ø 4 - 20

GENERICO / *ALL PURPOSE*



> PUNTA A CENTRARE IN M.D.I.
> ANGOLO DI TESTA 90°
> ELICA A 4 TAGLI - ATTACCO DIN 6535 HB
> RIVESTIMENTO TIALN

> HM CENTER DRILL
> HEAD ANGLE 90°
> 4 CUTTING EDGES FLUTE - SHANK DIN 6535 HB
> TIALN COATED



PAG. B 47

ART.	ØD	Ød	H	L1	Z
SCR0187040	4	4	54	4	4
SCR0187060	6	6	57	6	4
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

SMUSSATORI

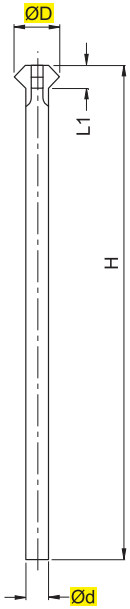
CHAMFERING TOOLS / KANTENFRÄSER / DISPOSITIFS DE BISEAUTAGE / BISELADORES

SAU
QUALITY TOOLS ENGINEERING

SMR0100

Ø 4 - 16

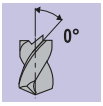
GENERICO / *ALL PURPOSE*



> FRESA A SMUSSARE E A SVASARE
> ELICA A 4 TAGLI
> RIVESTIMENTO TIALN

> CHAMFER AND COUNTERSINK MILLING CUTTER
> 4 CUTTING EDGES FLUTE
> TIALN COATED

RIVESTIM. COATED
TIALN



UMG

PAG. B 47

TOLLERANZE	D	d
TOLLERANCE RANGE	h8	h6

ART.	ØD	Ød	H	L1	Z
SMR0100040	4	6	100	2	4
SMR0100060	6	6	100	2	4
SMR0100080	8	6	100	2	4
SMR0100100	10	6	100	4	4
SMR0100120	12	6	100	4	4
SMR0100160	16	10	100	5	4

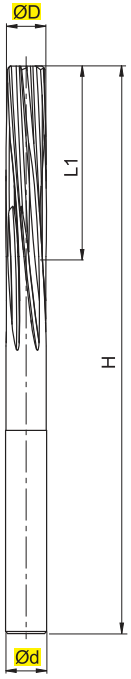
ALESATORI

REAMERS / REIBAHLEN / ALESOIRS /
ESCARIADORES

SAU
QUALITY TOOLS ENGINEERING

SAN0309

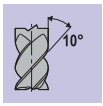
Ø 0,48 - 14



MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø2÷4	Ø4÷7,5	Ø7,5÷12	Ø12÷14
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	12-20	0,1-0,3	0,3-0,7	0,4-0,8	0,4-0,8
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	10-18	0,1-0,3	0,25-0,65	0,3-0,7	0,3-0,7
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	10-18	0,1-0,25	0,2-0,4	0,3-0,5	0,3-0,5
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	10-14	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,4
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	●	180-230	10-14	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,5
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	20-30	0,1-0,3	0,4-0,6	0,6-0,8	0,6-0,8
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	15-25	0,1-0,25	0,3-0,5	0,4-0,6	0,4-0,6
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	15-25	0,1-0,3	0,4-0,6	0,6-0,8	0,6-0,8
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	30-50	0,1-0,4	0,4-0,8	0,6-1	0,6-1
	RAME E SUE LEGHE - COPPER	●	90-110	20-30	0,1-0,3	0,3-0,5	0,4-0,6	0,4-0,6
	NON METALLICI - PLASTICS	●	/	20-50	0,1-0,4	0,3-0,5	0,4-0,6	0,4-0,6
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	8-12	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,5
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	10-15	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,5
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]					
G	GRAFITE - GRAPHITE	○	_	10-15	0,1-0,2	0,3-0,4	0,5-0,6	0,6-0,8

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

PER I DIAMETRI COMPRESI DA Ø0,48÷1 UTILIZZARE I PARAMETRI fn (Ø2÷4) RIDOTTI DEL 50%
PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø2÷4) RIDOTTI DEL 30%
FOR DIAMETERS Ø0,48÷1 REFER TO PARAMETERS fn (Ø2÷4) REDUCED BY 50%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø2÷4) REDUCED BY 30%



UMG

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	0/+0,005	h6

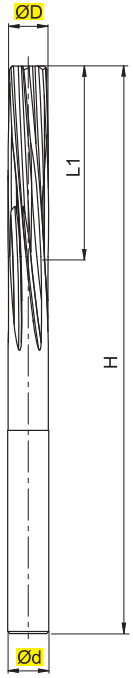
B

ART.	ØD	Ød	H	L1	NL	Z
SAN0309 ...	0,48-0,53	1,5	35	5	10	4
SAN0309 ...	0,54-0,59	1,5	35	5	10	4
SAN0309 ...	0,60-0,69	1,5	35	6	12	4
SAN0309 ...	0,70-0,79	1,5	35	6	12	4
SAN0309 ...	0,80-0,90	1,5	35	6	24	4
SAN0309 ...	0,91-1,00	1,5	35	8	24	4
SAN0309 ...	1,01-1,20	1,5	35	10	24	4
SAN0309 ...	1,21-1,50	1,5	40	14	25	4
SAN0309 ...	1,51-2,00	2,0	45	16	28	4
SAN0309 ...	2,01-2,40	2,0	50	18	29	4
SAN0309 ...	2,41-2,70	2,0-2,5	55	20	34	4
SAN0309 ...	2,71-3,10	2,5-3,0	60	20	39	4-6
SAN0309 ...	3,11-3,70	3,0-3,5	60	22	37	6
SAN0309 ...	3,71-4,10	3,5-4,0	65	24	40	6
SAN0309 ...	4,11-4,60	4,0-4,5	65	24	40	6
SAN0309 ...	4,61-4,90	4,5-5,0	65	26	38	6
SAN0309 ...	4,91-5,20	5,0	75	28	46	6
SAN0309 ...	5,21-5,70	5,0	75	28	46	6
SAN0309 ...	5,71-6,20	5,0-6,0	75	28	46	6
SAN0309 ...	6,21-6,60	6,0	80	30	49	6
SAN0309 ...	6,61-6,90	6,0-7,0	80	30	49	6
SAN0309 ...	6,91-7,20	7,0	90	35	54	6
SAN0309 ...	7,21-7,70	7,0	90	35	54	6
SAN0309 ...	7,71-8,20	7,0-8,0	95	35	59	6
SAN0309 ...	8,21-8,70	8,0	95	35	59	6
SAN0309 ...	8,71-8,90	8,0-9,0	100	35	64	6
SAN0309 ...	8,91-9,20	9,0	100	35	64	6
SAN0309 ...	9,21-9,70	9,0	100	35	64	6
SAN0309 ...	9,71-10,2	9,0-10,0	100	35	64	6
SAN0309 ...	10,21-10,7	10,0	100	35	64	6
SAN0309 ...	10,71-10,9	10,0-11,0	100	35	64	6
SAN0309 ...	10,91-11,2	11,0	100	35	64	6
SAN0309 ...	11,21-11,7	11,0	100	35	64	6
SAN0309 ...	11,71-12,1	11,0-12,0	100	35	64	6
SAN0309 ...	12,11-12,6	12,0	100	35	64	6
SAN0309 ...	12,61-13,1	12,0-13,0	100	35	64	6
SAN0309 ...	13,11-14,0	13,0-14,0	100	35	64	6

ESEGUE FORI CON TOLLERANZA 0/+0,005
FOR BORES WITH 0/+0,005 TOLERANCE
FÜHRT BOHRUNGEN MIT 0/+0,005 TOLERANZ AUS
EXECUTE TROUS AVEC TOLERANCE 0/+0,005

SAN0308

Ø 1 - 16

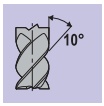


MATERIALI - MATERIALS pag. B 56			HB Rm[1] HRC[2]	Vc m/min	fn (mm) Ø2÷4	Ø4÷7,5	Ø7,5÷12	Ø12÷16
P	ACCIAIO NON LEGATO - NOT ALLOY STEEL	●	125-300	12-20	0,1-0,3	0,3-0,7	0,4-0,8	0,4-0,8
	ACCIAIO POCO LEGATO - LOW ALLOY STEEL	●	180-350	10-18	0,1-0,3	0,25-0,65	0,3-0,7	0,3-0,7
	ACCIAIO ALTO LEGATO - ALLOY STEEL	●	200-325	10-18	0,1-0,25	0,2-0,4	0,3-0,5	0,3-0,5
	INOX MARTENS. - STAINLESS STEEL MART	●	200-240	10-14	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,4
M	INOX AUST. DUPLEX - STAINLESS STEEL AUST	●	180-230	10-14	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,5
K	GHISA GRIGIA - GREY CAST IRON	●	180-260	20-30	0,1-0,3	0,4-0,6	0,6-0,8	0,6-0,8
	GHISA SFEROIDALE - SPHEROIDAL GRAPHITE	●	160-250	15-25	0,1-0,25	0,3-0,5	0,4-0,6	0,4-0,6
	GHISA MALLEABILE - MALLEABLE CAST IRON	●	130-230	15-25	0,1-0,3	0,4-0,6	0,6-0,8	0,6-0,8
N	ALLUMINIO E SUE LEGHE - ALUMINIUM	●	60-130	30-50	0,1-0,4	0,4-0,8	0,6-1	0,6-1
	RAME E SUE LEGHE - COPPER	●	90-110	20-30	0,1-0,3	0,3-0,5	0,4-0,6	0,4-0,6
	NON METALLICI - PLASTICS	●	/	20-50	0,1-0,4	0,3-0,5	0,4-0,6	0,4-0,6
S	LEGHE RESIST. CALORE - HIG. TEMP. ALLOY	○	200-320	8-12	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,5
	TITANIO E SUE LEGHE - TITANIUM	○	400-1050[1]	10-15	0,1-0,2	0,2-0,4	0,3-0,5	0,3-0,5
H	ACCIAIO TEMPRATO - HARDENED STEEL		45-60[2]					
G	GRAFITE - GRAPHITE	○	_	10-15	0,1-0,2	0,3-0,4	0,5-0,6	0,6-0,8

● APPLICAZIONE CONSIGLIATA - RECOMMENDED APPLICATION
EMPFOHLENEREINSATZ - APPLICATION CONSEILLÉE

○ APPLICAZIONE POSSIBILE - POSSIBLE APPLICATION
MÖGLICHE ANWENDUNG - APPLICATION POSSIBLE

PER I DIAMETRI COMPRESI DA Ø1÷2 UTILIZZARE I PARAMETRI fn (Ø2÷4) RIDOTTI DEL 30%
FOR DIAMETERS Ø1÷2 REFER TO PARAMETERS fn (Ø2÷4) REDUCED BY 30%



UMG

PAG. B 47

TOLLERANZE / TOLLERANCE RANGE	D	d
	H7	h6

ART.	ØD	Ød	H	L1
SAN0308010	1,0	1,0	40	5
SAN0308011	1,1	1,1	40	7
SAN0308012	1,2	1,2	40	7
SAN0308013	1,3	1,3	40	7
SAN0308014	1,4	1,4	40	8
SAN0308015	1,5	1,5	40	8
SAN0308016	1,6	1,6	43	9
SAN0308017	1,7	1,7	46	10
SAN0308018	1,8	1,8	45	10
SAN0308019	1,9	1,9	46	10
SAN0308020	2,0	2,0	49	11
SAN0308021	2,1	2,1	49	11
SAN0308022	2,2	2,2	53	12
SAN0308023	2,3	2,3	53	12
SAN0308024	2,4	2,4	54	14
SAN0308025	2,5	2,5	57	14
SAN0308026	2,6	2,6	57	14
SAN0308027	2,7	2,7	61	15
SAN0308028	2,8	2,8	61	15
SAN0308029	2,9	2,9	61	15
SAN0308030	3,0	3,0	61	15
SAN0308031	3,1	3,1	65	16
SAN0308032	3,2	3,2	65	16
SAN0308033	3,3	3,3	65	16
SAN0308034	3,4	3,4	70	18
SAN0308035	3,5	3,5	70	18
SAN0308036	3,6	3,6	70	18
SAN0308037	3,7	3,7	70	18
SAN0308038	3,8	3,8	75	19
SAN0308039	3,9	3,9	75	19
SAN0308040	4,0	4,0	75	19
SAN0308041	4,1	4,1	75	19
SAN0308042	4,2	4,2	75	19
SAN0308043	4,3	4,3	80	21
SAN0308044	4,4	4,4	80	21
SAN0308045	4,5	4,5	80	21
SAN0308046	4,6	4,6	80	21
SAN0308047	4,7	4,7	80	21
SAN0308048	4,8	4,8	86	23
SAN0308049	4,9	4,9	86	23
SAN0308050	5,0	5,0	86	23
SAN0308051	5,1	5,1	86	23
SAN0308052	5,2	5,2	86	23
SAN0308053	5,3	5,3	86	23
SAN0308054	5,4	5,4	93	26

ART.	ØD	Ød	H	L1
SAN0308055	5,5	5,5	92	26
SAN0308056	5,6	5,6	93	26
SAN0308057	5,7	5,7	93	26
SAN0308058	5,8	5,8	93	26
SAN0308059	5,9	5,9	93	26
SAN0308060	6,0	6,0	93	26
SAN0308065	6,5	6,5	101	28
SAN0308070	7,0	7,0	109	31
SAN0308075	7,5	7,5	109	31
SAN0308080	8,0	8,0	117	33
SAN0308081	8,1	8,0	117	33
SAN0308082	8,2	8,0	117	33
SAN0308085	8,5	8,5	117	33
SAN0308090	9,0	9,0	125	36
SAN0308095	9,5	9,5	125	36
SAN0308100	10,0	10,0	133	38
SAN0308102	10,2	10,0	133	38
SAN0308105	10,5	10,5	133	38
SAN0308110	11,0	11,0	142	41
SAN0308115	11,5	11,5	142	41
SAN0308120	12,0	12,0	151	44
SAN0308125	12,5	12,5	151	44
SAN0308130	13,0	13,0	151	44
SAN0308140	14,0	14,0	160	47
SAN0308150	15,0	16,0	162	47
SAN0308160	16,0	16,0	162	47

ESEGUE FORI CON TOLLERANZA H7
FOR BORES WITH H7 TOLERANCE
FÜHRT BOHRUNGEN MIT TOLERANZ H7 AUS
M.D.I. ALESOIR DECIMAL H7

NOTE :

DISTRUGGI MASCHI

TAP DESTROYING TOOL
WERKZEUGE ZUM ENTFERNEN VON ABGEBROCHENEN GEWINDEBOHRERN
DESTRUCTEUR DE MALES
EXTRACTOR DE TACOS

SAU
QUALITY TOOLS ENGINEERING

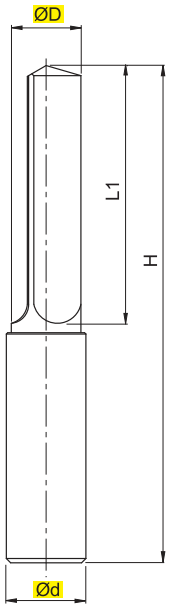
SKR

Ø 3,3 - 17,5

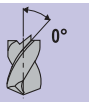
GENERICO / *ALL PURPOSE*

n = 3000 - 6000 giri/min - min^{-1}

fn = 0,02 - 0,04 mm/giro - mm/rev.



RIVESTIM. COATED **TIN**

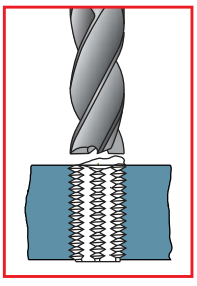


UMG

PAG. B 47

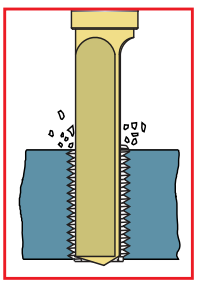
TOLLERANZE	D	d
TOLLERANCE RANGE	e9	h6

ART.	ØD	Ød	H	L1	Z	Filetto Threard
SKR01M04	3,3	6	50	15	3	M4
SKR01M05	4,2	6	50	15	3	M5
SKR01M06	5,0	6	50	15	3	M6
SKR01M08	6,8	8	60	20	3	M8
SKR01M10	8,5	10	70	25	3	M10
SKR01M12	10,2	12	75	30	3	M12
SKR01M14	12,0	12	75	30	3	M14
SKR01M16	14,0	14	100	40	3	M16
SKR01M18	15,5	16	100	40	3	M18
SKR01M20	17,5	18	100	50	3	M20



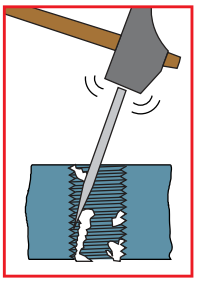
Fase 1. Con una fresa M.D.I. cercare di pareggiare il piano di rottura del maschio.

Step 1. *With an HM mill try to level off the tap breakage plane.*



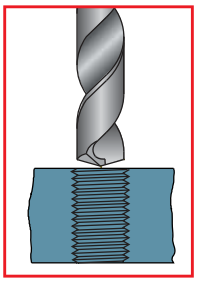
Fase 2. Cominciare la perforazione con il DGM.
La refrigerazione può anche essere ad acqua.

Step 2. *Begin the hole with the DGM. Water cooling can also be used.*



Fase 3. É importante eliminare le scaglie di acciaio rimanenti sulle pareti del filetto.
Utilizzare un qualsiasi utensile appuntito.

Step 3. *It is important to remove the steel flakes left on the sides of the thread.*
Use any pointed tool.



Fase 4. Si consiglia di ripassare il foro con una punta M.D.I. del diametro di pre-foro.

Step 4. *The hole should be re-machined with a HM bit with a diameter corresponding to the pre-hole.*

FRESE A FILETTARE

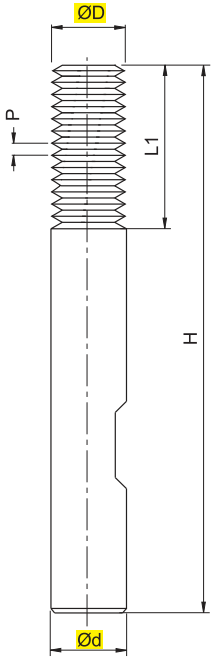
THREADING MILLS / GEWINDEFRÄSER / FRAISES A FILETER /
FRESAS PARA FILETEAR

SAU
QUALITY TOOLS ENGINEERING

UNR

Ø 4,5 - 20

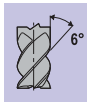
ACCIAIO / *STEEL*



> FRESA A FILETTARE IN METALLO DURO
> PER FILETTARE UN 60° (UNC-UNF) PER LA LAVORAZIONE DI ACCIAI
> ATTACCO DIN 6535 HB
> RIVESTIMENTO TICN

> SOLID CARBIDE THREADING MILL
> UN 60° (UNC-UNF) THREAD FOR STEEL MACHINING
> SHANK DIN 6535 HB
> TICN COATED

RIVESTIM. COATED **TICN**



UMG

PAG. B 47

TOLLERANZE	D	d
TOLLERANCE RANGE	e9	h6

ART.	ØD	Ød	H	L1	Z	Filetti utili Thread useful	P/tpi	Preforo d. Prebore	Filetto eseguibile Thread type
UNR 045020	4,5	6	50	12	3	9	20	5,2	UNC 1/4”
UNR 045028	4,5	6	50	12	3	13	28	5,5	UNF 1/4”
UNR 055016	5,5	6	50	15	3	9	16	8	UNC 3/8”
UNR 055018	5,5	6	50	15	3	10	18	6,6	UNC 5/16”
UNR 055024	5,5	6	50	15	3	14	24	6,9	UNF 5/16”
UNR 080014	8,0	8	60	20	3	11	14	9,4	UNC 7/16”
UNR 080020	8,0	8	60	20	3	15	20	9,9	UNC 7/16”
UNR 080024	8,0	8	60	20	3	18	24	8,5	UNF 3/8”
UNR 100012	10,0	10	70	25	4	11	12	12,2	UNC 9/16”
UNR 100013	10,0	10	70	25	4	12	13	10,8	UNC 1/2”
UNR 100020	10,0	10	70	25	4	19	20	11,5	UNF 1/2”
UNR 120011	12,0	12	75	30	4	13	11	13,6	UNC 5/8”
UNR 120018	12,0	12	75	30	4	21	18	12,9-14,5	UNF 9/16”-5/8”
UNR 155010	15,5	16	100	40	5	15	10	16,5	UNC 3/4”
UNR 155016	15,5	16	100	40	5	25	16	17,5	UNF 3/4”
UNR 180009	18,0	18	100	40	5	14	9	19,5	UNC 7/8”
UNR 180014	18,0	18	100	40	5	22	14	20,4	UNF 7/8”
UNR 200008	20,0	20	100	40	5	12	8	22,25	UNC 1”
UNR 200012	20,0	20	100	40	5	18	12	23,25	UNF 1”>

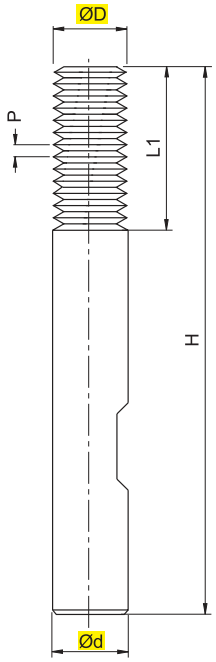
P/tpi = FILETTI PER POLLICE
P/tpi = THREADS FOR INCH-SIZES
P/tpi = GEWINDE FÜR ZOLLABMESSUNGEN
P/tpi = FILETS POUR POUCES

PARAMETRI DI TAGLIO A PAG. B 51
CUTTING DATA ON PAGE B 51
SCHNTTPARAMETER AUF SEITE B 51
PARAMETRES DE COUPE PAGE B 51

GASR

Ø 8 - 20

ACCIAIO / *STEEL*



> FRESA A FILETTARE IN METALLO DURO
> PER FILETTATURE WHITWORTH 55° GAS PER LA LAVORAZIONE DI ACCIAI
> ATTACCO DIN 6535 HB
> RIVESTIMENTO TICN

> SOLID CARBIDE THREADING MILL
> FOR WHITWORTH 55° GAS THREAD FOR STEEL MACHINING
> SHANK DIN 6535 HB
> TICN COATED

RIVESTIM. COATED **TICN**

UMG

PAG. B 47

TOLLERANZE	D	d
TOLLERANCE RANGE	e9	h6

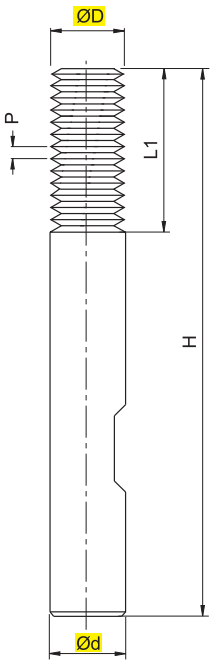
ART.	ØD	Ød	H	L1	Z	Filetti utili Thread useful	P/tpi	Preforo d. Prebore	Filetto eseguibile Thread type
GASR 080028	8	8	60	20	3	22	28	8,7	1/8”
GASR 100019	10	10	70	25	4	18	19	11,8	1/4”
GASR 140019	14	14	85	35	4	26	19	15,25	3/8”
GASR 160014	16	16	100	40	5	22	14	19	1/2”
GASR 200014	20	20	100	40	5	22	14	21-24,5-28,25	5/8”-3/4”-7/8”
GASR 200011	20	20	100	40	5	17	11	30,75	1”>

P/tpi = FILETTI PER POLLICE
P/tpi = THREADS FOR INCH-SIZES
P/tpi = GEWINDE FÜR ZOLLABMESSUNGEN
P/tpi = FILETS POUR POUCES

PARAMETRI DI TAGLIO A PAG. B 51
CUTTING DATA ON PAGE B 51
SCHNTTPARAMETER AUF SEITE B 51
PARAMETRES DE COUPE PAGE B 51

MMR — *Ø 4,5 - 20*

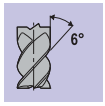
ACCIAIO / *STEEL*



> FRESA A FILETTARE IN METALLO DURO
> PER FILETTARE ISO 60° PER LA LAVORAZIONE DI ACCIAI
> ATTACCO DIN 6535 HB
> RIVESTIMENTO TICN

> SOLID CARBIDE THREADING MILL
> FOR ISO 60° THREAD FOR STEEL MACHINING
> SHANK DIN 6535 HB
> TICN COATED

RIVESTIM. COATED **TICN**



UMG

PAG. B 47

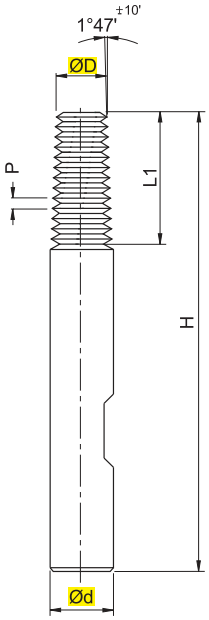
TOLLERANZE	D	d
TOLLERANCE RANGE	e9	h6

ART.	ØD	Ød	H	L1	Z	Filetti utili Thread useful	P/mm	Preforo d. Prebore	Filetto eseguibile Thread type
MMR 045075	4,5	6	50	12	3	16	0,75	5,2	MF6
MMR 045100	4,5	6	50	12	3	12	1,00	5-6	M6,M7
MMR 060075	6,0	6	50	15	3	20	0,75	7,2	MF8
MMR 060100	6,0	6	50	15	3	15	1,00	7	MF8
MMR 060125	6,0	6	50	15	3	12	1,25	6,8-7,8-8,8	M8,M9,MF10
MMR 080075	8,0	8	60	20	3	26	0,75	9,2-11,2	MF10,MF12
MMR 080100	8,0	8	60	20	3	20	1,00	9	MF10
MMR 080125	8,0	8	60	20	3	16	1,25	10,8	MF12
MMR 080150	8,0	8	60	20	3	13	1,50	8,5-9,5-10,5	M10,M11,MF12
MMR 080175	8,0	8	60	20	3	11	1,75	10,2	MF12
MMR 100100	10,0	10	70	25	4	25	1,00	11	MF12
MMR 100125	10,0	10	70	25	4	20	1,25	12,8	MF14
MMR 100150	10,0	10	70	25	4	16	1,50	12,5	MF14
MMR 100200	10,0	10	70	25	4	12	2,00	12	M14
MMR 120100	12,0	12	75	30	4	30	1,00	13	MF14
MMR 120150	12,0	12	75	30	4	20	1,50	14,5	MF16
MMR 120200	12,0	12	75	30	4	15	2,00	14	M16
MMR 140100	14,0	14	85	35	4	35	1,00	15	MF16
MMR 140150	14,0	14	85	35	4	23	1,50	16,5	MF18
MMR 140200	14,0	14	85	35	4	17	2,00	16	MF18
MMR 140250	14,0	14	85	35	4	14	2,50	15,5	M18
MMR 160100	16,0	16	100	40	5	40	1,00	17-19	MF18,MF20
MMR 160150	16,0	16	100	40	5	26	1,50	18,5-20,5	MF20,MF22
MMR 160200	16,0	16	100	40	5	20	2,00	18-20	MF20,MF22
MMR 160250	16,0	16	100	40	5	16	2,50	17,5-19,5	M20,M22
MMR 200100	20,0	20	100	40	5	40	1,00	21>	MF22>
MMR 200150	20,0	20	100	40	5	26	1,50	22,5>	MF24>
MMR 200200	20,0	20	100	40	5	20	2,00	22>	MF24>
MMR 200300	20,0	20	100	40	5	13	3,00	21>	MF24>

PARAMETRI DI TAGLIO A PAG. B 51
CUTTING DATA ON PAGE B 51
SCHNTTPARAMETER AUF SEITE B 51
PARAMETRES DE COUPE PAGE B 51

NPR — *Ø 5,03 - 13,6*

ACCIAIO / *STEEL*



> FRESA A FILETTARE IN METALLO DURO
> PER FILETTATURE NPT-NPTF CONICHE 60° PER LA LAVORAZIONE DI ACCIAI
> ATTACCO DIN 6535 HB
> RIVESTIMENTO TICN

> SOLID CARBIDE THREADING MILL
> FOR 60° TAPERED NPT-NPTF THREAD FOR STEEL MACHINING
> SHANK DIN 6535 HB
> TICN COATED

RIVESTIM. COATED **TICN**

UMG

PAG. B 47

TOLLERANZE		d
TOLLERANCE RANGE		h6

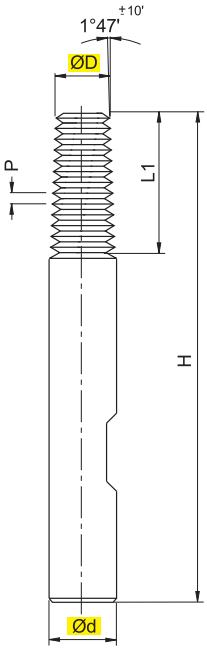
ART.	ØD	Ød	H	L1	Z	Filetti utili Thread useful	P	Preforo d. Prebore	Filetto eseguibile Thread type
NPR 050-27"NPT	5,03	6	50	9,4	3	10	27	6,3-8,5	1/16"-1/8"
NPR 067-18"NPT	6,74	8	60	14,1	3	10	18	11,1-14,5	1/4"-3/8"
NPR 101-14"NPT	10,16	12	75	19,9	4	11	14	18,23	1/2"-3/4"
NPR 136-115"NPT	13,6	16	100	26,5	5	12	11,5	29-38-44-56	1"-1"1/4-1"1/2-2"
NPR 050-27"NPTF	5,03	6	50	9,4	3	10	27	6,3-8,5	1/16"-1/8"
NPR 067-18"NPTF	6,74	8	60	14,1	3	10	18	11,1-14,5	1/4"-3/8"
NPR 101-14"NPTF	10,16	12	75	19,9	4	11	14	18-23	1/2"-3/4"
NPR 136-115"NPTF	13,6	16	100	26,5	5	12	11,5	29-38-44-56	1"-1"1/4-1"1/2-2"

PARAMETRI DI TAGLIO A PAG. B 51
CUTTING DATA ON PAGE B 51
SCHNTTPARAMETER AUF SEITE B 51
PARAMETRES DE COUPE PAGE B 51

GCR

Ø 5,03 - 13,59

ACCIAIO / *STEEL*



> FRESA A FILETTARE IN METALLO DURO
> PER FILETTATURE GAS CONICHE 55° PER LA LAVORAZIONE DI ACCIAI
> ATTACCO DIN 6535 HB
> RIVESTIMENTO TICN

> SOLID CARBIDE THREADING MILL
> FOR 55° TAPERED GAS THREAD FOR STEEL MACHINING
> SHANK DIN 6535 HB
> TICN COATED

RIVESTIM. COATED **TICN**

6°

UMG

PAG. B 47

TOLLERANZE		d
TOLLERANCE RANGE		h6

ART.	ØD	Ød	H	L1	Z	Filetti utili Thread useful	P	Preforo d. Prebore	Filetto eseguibile Thread type
GCR 050-28”	5,03	6	50	10	3	11	28	8,4	1/8”
GCR 067-19”	6,74	8	60	14,7	3	11	19	11,1-14,5	1/4”-3/8”
GCR 101-14”	10,16	12	75	29	4	11	14	18,1-23,5	1/2”-3/4”
GCR 135-11”	13,59	16	100	39	5	11	11	29,75-38,2-44-56	1”-1”1/4-1”1/2-2”

PARAMETRI DI TAGLIO A PAG. B 51
CUTTING DATA ON PAGE B 51
SCHNTTPARAMETER AUF SEITE B 51
PARAMETRES DE COUPE PAGE B 51

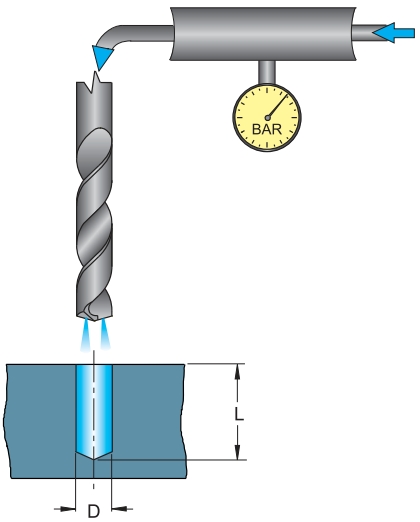
DATI TECNICI FORATURA E LAVORAZIONE FORI

DRILLING AND MACHINING OF BORES TECHNICAL DATA
BOHREN UND BEARBEITUNG VON BOHRUNGEN - SCHNITTDATEN
DONNEES TECHNIQUES PERÇAGE ET USINAGE TROUS
DATOS TECNICOS TALADRADO Y TRABAJO DE AGUJEROS

SAU
QUALITY TOOLS ENGINEERING

INDICAZIONI E CONSIGLI PER LA FORATURA CON PUNTE IN METALLO DURO
INSTRUCTIONS AND SUGGESTIONS FOR MACHINING WITH CARBIDE DRILLS

PRESSIONE E PORTATA REFRIGERANTE
COOLANT PRESSURE AND FLOW RATE

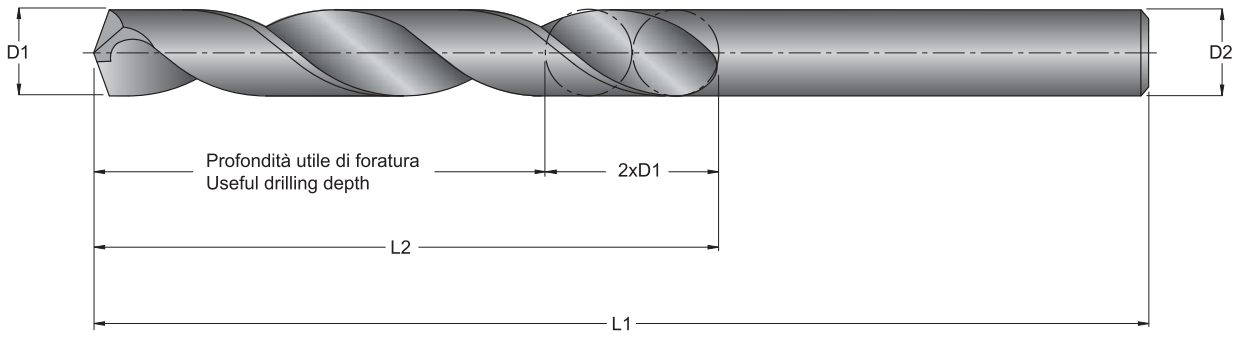


L	Pressione-Pressure		Portata-Flow rate	
	D<5	D>5	D=8	D=16
	BAR/PSI		L/min.	
< 3 X D	20÷30	10÷20	1,5÷3	8÷10
> 3 X D	30÷40	20÷30	2,5÷4	12÷15

- Per forature generiche usare una concentrazione del refrigerante minima del 6-8%.
- Per forature di acciai legati, acciai inox e leghe resistenti al calore , usare una concentrazione minima del refrigerante del 10%.

- For general drilling use a minimum coolant concentration of 6-8%.
- For drilling steel alloys, stainless steel, and heat resistant alloys, use a minimum coolant concentration of 10%

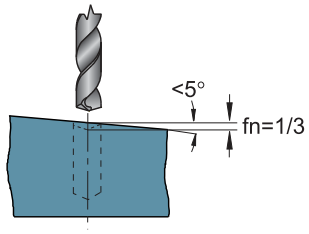
PROFONDITÁ UTILE DI FORATURA
USEFUL DRILLING DEPTH



- Per una buona evacuazione del truciolo, la profondità utile di foratura si ricava sottraendo alla lunghezza dell'elica (L2) , 2 volte la dimensione del diametro (D1)

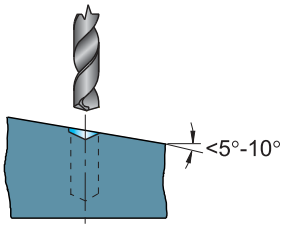
- For a good chip evacuation, the best useful drilling depth is calculated by subtracting twice the size of the diameter (D1) from the length of the drill flute (L2)

INDICAZIONI E CONSIGLI PER LA LAVORAZIONE CON PUNTE IN METALLO DURO
INSTRUCTIONS AND SUGGESTIONS FOR MACHINING WITH CARBIDE DRILLS



- Per la foratura di superfici inclinate fino a max 5°, diminuire l'avanzamento **fn** ad 1/3 finchè la punta lavora sulla superficie inclinata.

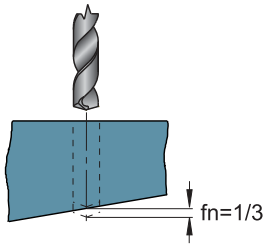
- For drilling surfaces that are tilted up to a maximum of 5°, reduce the feed rate **fn** to 1/3 as long as the drill is machining the tilted surface



- Per la foratura di superfici inclinate fino a 10° è necessario eseguire prima un'operazione di centrinatura.
- Superfici con angolo superiore a 10° devono essere prima fresate.

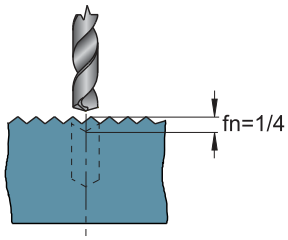
- For drilling surfaces that are tilted up to 10°, it is first necessary to perform a centering operation
- Surfaces tilted by more than 10° must first be milled

(*)



- Per i fori passanti su superfici inclinate diminuire l'avanzamento ad 1/3 nella fase di uscita.

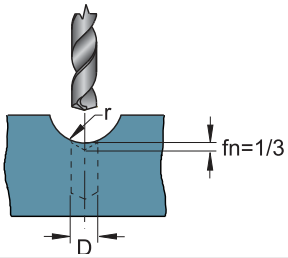
-For through bores on tilted surfaces, reduce the feed rate to 1/3 during the exit phase



- Per la foratura di superfici irregolari diminuire l'avanzamento ad 1/4 finchè la punta è in fase di entrata.

- For drilling irregular surfaces, reduce the feed rate to 1/4 as long as the drill is entering the material

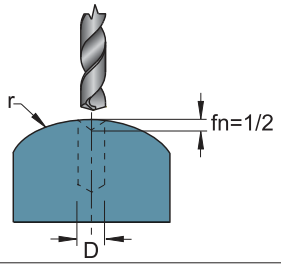
(*)



- La foratura di superfici concave è possibile solo se il raggio **r** è maggiore di 15 x D. Ridurre l'avanzamento ad 1/3 finchè la punta è in fase di entrata.

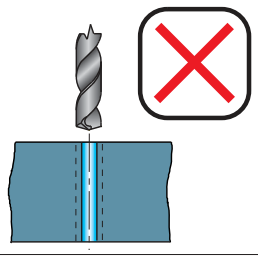
- Drilling concave surfaces is possible only if the radius **r** is greater than 15 x D. Reduce the feed rate to 1/3 as long as the drill is entering the material

(*)



- La foratura di superfici convesse è possibile solo se il raggio **r** è maggiore di 4 x D. Ridurre l'avanzamento ad 1/2 finchè la punta è in fase di entrata.

- Drilling convex surfaces is possible only if the radius **r** is greater than 4 x D. Reduce the feed rate to 1/2 as long as the drill is entering the material

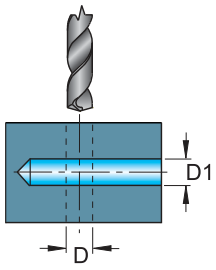


- Non è possibile eseguire l'allargatura di fori preesistenti

- It is not possible to enlarge existing bores

INDICAZIONI E CONSIGLI PER LA LAVORAZIONE CON PUNTE IN METALLO DURO
INSTRUCTIONS AND SUGGESTIONS FOR MACHINING WITH CARBIDE DRILLS

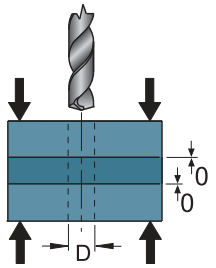
(*)



-L' esecuzione di fori trasversali è sconsigliabile, può comunque essere eseguita se il foro **D1** è in asse col foro **D**.
diminuire l'avanzamento a 1/4 durante l'entrata e l'uscita dal foro trasversale.

-It is advisable not to drill transverse bores; however, it is possible to drill these types of bores if bore **D1** is on the same axis as the bore **D**. Reduce the feed rate to 1/4 when entering and exiting the transverse bore

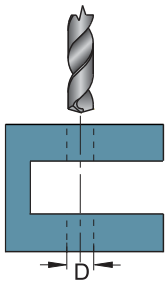
(*)



-La foratura di piastre sovrapposte è sconsigliabile, può comunque essere eseguita solo se vengono adottate le seguenti precauzioni:
1) assicurarsi che le piastre siano bloccate adeguatamente
2) assicurarsi che non ci siano spazi vuoti tra le piastre

-It is advisable not to drill overlapping plates; however, it is possible to perform this type of drilling only if the following precautions are adopted:
1) Make sure that the plates are adequately secured.
2) Make sure that there are no empty spaces between the plates

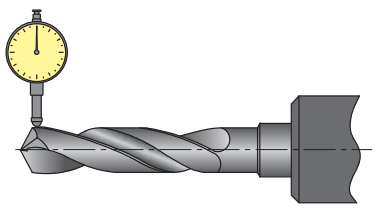
(*)



-La foratura di più elementi distanti tra loro è possibile solo con le seguenti punte: SDF0590 - SDR0330 - SDF0930

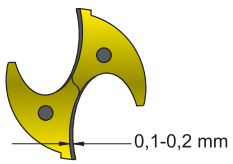
-Combinations of several elements distant from each other can only be drilled with the following drill bits: SDF0590 - SDR0330 - SDF0930

Max 0,03 mm



-L' eccentricità massima non deve mai superare 0,03 mm

-Maximum eccentricity must never exceed 0.03 mm



-Si consiglia di interrompere la foratura quando si raggiunge una usura massima sul tagliente di 0,2 mm

-It is recommended to stop boring when a maximum wear of 0.2 mm on the cutting edge is achieved

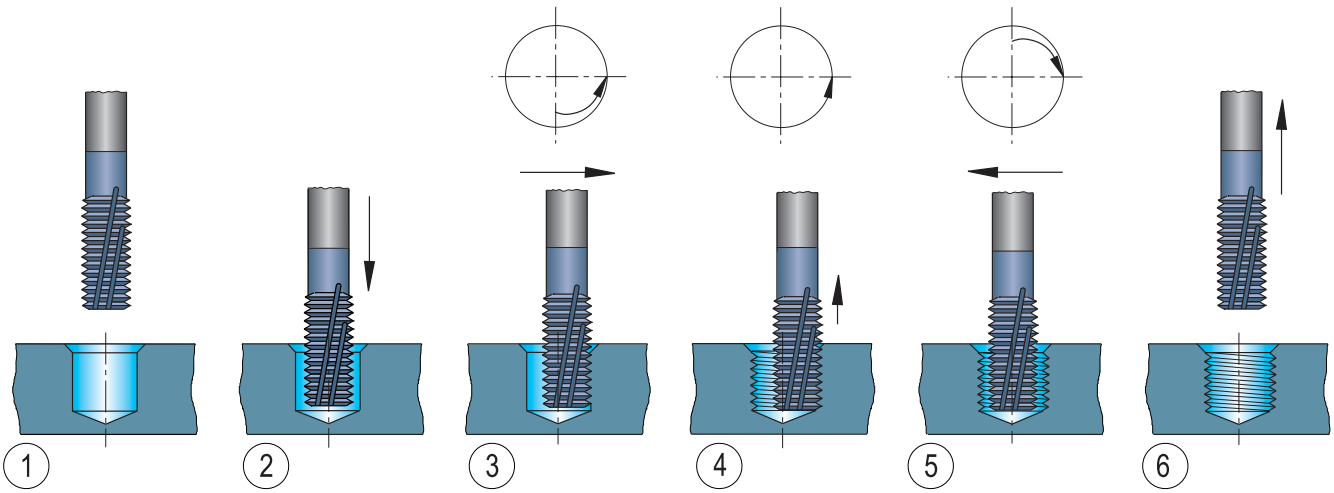
(*) IN QUESTE LAVORAZIONI SI CONSIGLIA DI USARE LE PUNTE: SDF0590 - SDR0330 - SDF0930
FOR THESE APPLICATIONS SDF0590 - SDR0330 - SDF0930 TYPES ARE RECOMMENDED

SAU QUALITY TOOLS ENGINEERING

PARAMETRI DI TAGLIO PER FRESE A FILETTARE
CUTTING PARAMETER FOR THREADING MILLS

DIN ISO 513	MATERIALE *MATERIAL*	VT mt/min	AV D6	AV D8	AV D10	AV D12	AV D14	AV D16	AV D18	AV D20
P	**ACCIAIO NON LEGATO, ACCIAIO FUSO** NOT-ALLOY STEEL, CAST STEEL	90-120	0.035/0.1	0.04/0.12	0.045/0.15	0.05/0.18	0.06/0.21	0.07/0.25	0.08/0.28	0.09/0.35
	ACCIAIO DEBOLMENTE LEGATO LOW-ALLOY STEEL	80-160	0.03//0.09	0.035/0.1	0.04/0.13	0.045/0.15	0.05/0.18	0.06/0.21	0.07/0.25	0.08/0.30
	ACCIAIO ALTO LEGATO, ACCIAIO DA UTENSILI HIGH ALLOY STEEL, TOOL STEEL	60-120	0.025/0.08	0.03/0.09	0.035/0.11	0.04/0.13	0.045/0.16	0.05/0.19	0.055/0.22	0.06/0.25
	ACCIAIO INOSSIDABILE STAINLESS STEEL **MARTENSITICO** MARTENSITICO	25-80	0.025/0.08	0.03/0.09	0.035/0.11	0.04/0.13	0.045/0.16	0.05/0.19	0.055/0.22	0.06/0.25
M	**ACCIAIO INOSSIDABILE** STAINLESS STEEL									
K	**GHISA GRIGIA** GRAY IRON									
	GHISA A GRAFITE SFEROIDALE, NODULARE NODULAR CAST IRON									
	GHISA MALLEABILE (DURA) MALLEABLE CAST IRON									
N	**LEGHE DI ALLUMINIO** ALUMINIUM ALLOYS									
	LEGHE COLATE DI ALLUMINIO CAST ALUMINIUM ALLOYS									
	RAME E LEGHE DI RAME COPPER, COPPER ALLOYS									
	MATERIALI NON METALLICI NONMETALLIC MATERIALS									
S	**LEGHE RESISTENTI AL CALORE** HIGH-TEMPERATURE ALLOYS									
	TITANIO, LEGHE DI TITANIO TITANIUM, TITANIUM ALLOYS									
H	**ACCIAIO TEMPRATO** HARDENED STEEL									
	GHISA FUSA, GETTI DI GHISA CHILL CAST IRON									
	GHISA TEMPRATA HARDENED CAST IRON									

CONSIGLI PER LA FRESATURA DI FILETTI
SUGGESTIONS FOR MILLING THE THREADS



1 Posizionamento X-Y in rapido
Quick X-Y positioning

2 Posizionamento fino alla profondità di fresatura
Placement to the depth of milling

3 Penetrazione nel materiale (vedi sezione sotto)
Penetration of the material (see section below)

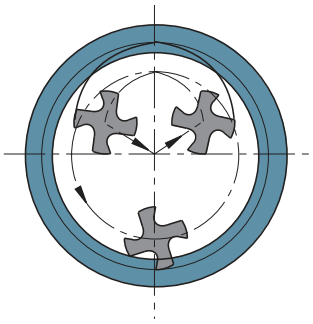
4 Esecuzione della filettatura mediante interpolazione elicoidale
Execution of thread by means of helical interpolation

5 Estrazione dal materiale (vedi sezione sotto)
Removal from the material (see section below)

6 Uscita in rapido
Quick exit

- Per filettature interne si consiglia di usare un diametro fresa non superiore ai 2/3 del diametro del filetto, per i filetti a passo fine 3/4. Per filettature esterne il diametro fresa non deve essere superiore al diametro del filetto.

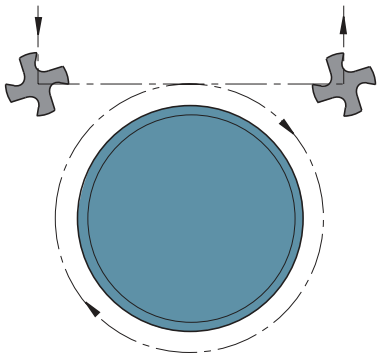
- For inner threading it is suggested to use a milling cutter diameter no greater than 2/3 of the diameter of the thread, for fine thread pitches use 3/4. For outer threading the milling cutter diameter must not be greater than the diameter of the thread.



FILETTATURA INTERNA - INTERNAL THREADING

- Per evitare tracce sul filetto, si consiglia di eseguire la penetrazione e l'estrazione con una traiettoria circolare, avanzando di un passo. Se si esegue la penetrazione diritta ridurre l'avanzamento del 70-75%

-To prevent marks in the thread, it is suggested to execute the penetration and the removal with a circular trajectory, advancing by a step. If straight penetration is executed, reduce the feed rate by 70-75%.

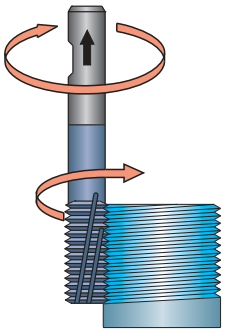


FILETTATURA ESTERNA - EXTERNAL THREADING

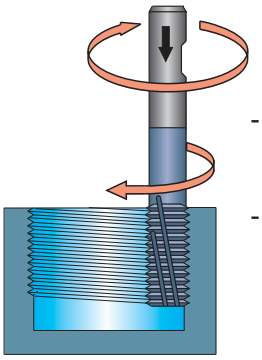
- Per evitare tracce nel filetto, si consiglia di eseguire la penetrazione e l'estrazione con una traiettoria tangenziale, avanzando di un passo. Se si esegue la penetrazione diritta ridurre l'avanzamento del 70-75%.

- To prevent marks in the thread, it is suggested to execute the penetration and the removal with a tangential trajectory, advancing by a step. If straight penetration is executed, reduce the feed rate by 70-75%.

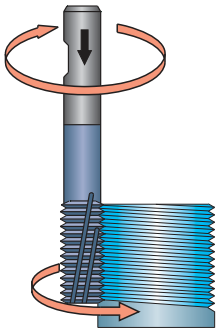
METODI DI FRESATURA DI FILETTI
METHODS OF MILLING THE THREADS



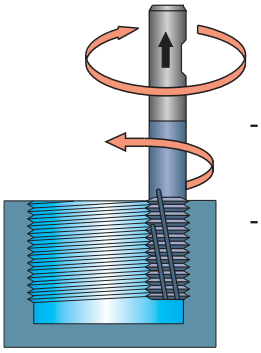
- Filetto destro
  fresatura in discordanza
- Right-hand thread, discor
  dance milling



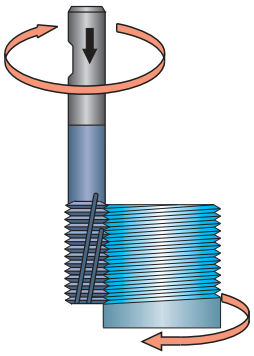
- Filetto destro
  fresatura in discordanza
- Right-hand thread, discor
  dance milling



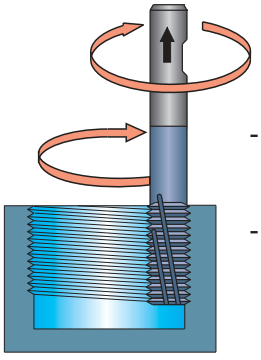
- Filetto sinistro
  fresatura in discordanza
- Left-hand thread, discor
  dance milling



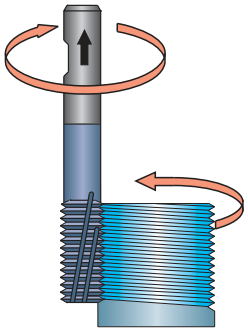
- Filetto sinistro
  fresatura in discordanza
- Left-hand thread, discor
  dance milling



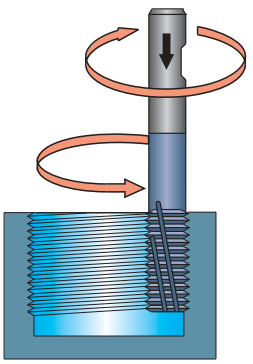
- Filetto destro
  fresatura in concordanza
- Right-hand thread, accor
  dance milling



- Filetto destro
  fresatura in concordanza
- Right-hand thread, accor
  dance milling



- Filetto sinistro
  fresatura in concordanza
- Left-hand thread, accor
  dance milling

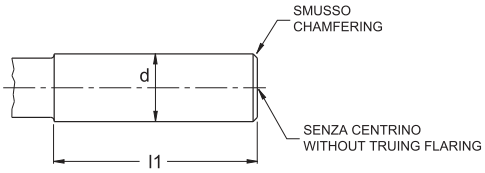


- Filetto sinistro
  fresatura in concordanza
- Left-hand thread, accor
  dance milling

SAU QUALITY TOOLS ENGINEERING

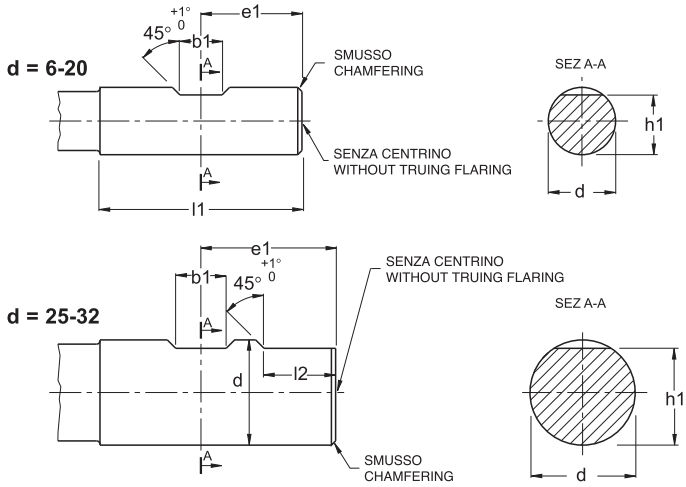
ATTACCO CILINDRICO CYLINDRICAL SHANK — DIN 6535

METALLO DURO - CARBIDE



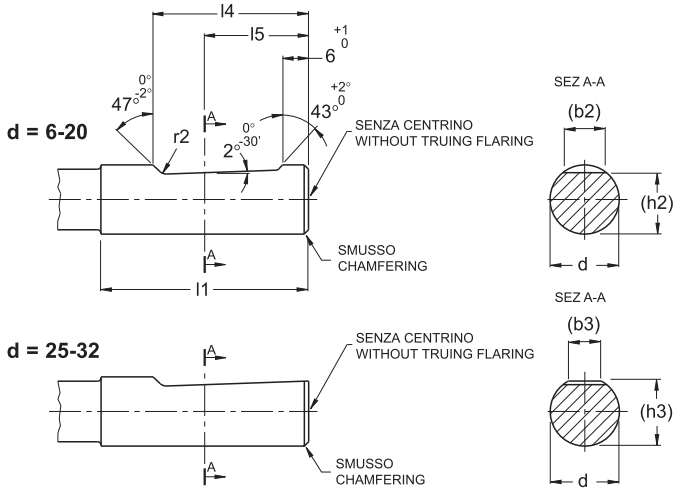
FORMA - FORM HA

d h6	l1 +2 0	d h6	l1 +2 0
2	28	12	45
3		14	
4		16	48
5		18	
6	36	20	50
8		25	56
10	40	32	60



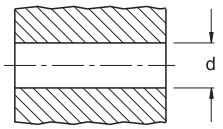
FORMA - FORM HB (WELDON)

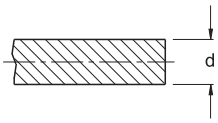
d h6	b1 +0,05 0	e1 0 -1	h1 h11	l1 +2 0	l2 +1 0
6	4,2	18,0	5,1	36	–
8	5,5		6,9		
10	7,0	20,0	8,5	40	
12	8,0	22,5	10,4	45	
14			12,7		
16	10,0	24,0	14,2	48	
18			16,2		
20	11,0	25,0	18,2	50	
25	12,0	32,0	23,0	56	17
32	14,0	36,0	30,0	60	19



FORMA - FORM HE (WHISTLE-NOTCH)

d h6	(b2)≈	(b3)	h2 h11	(h3)	l1 +2 0	l4 0 -1	l5	r2 min
6	4,3	–	5,1	–	36	25	18	1,2
8	5,5	–	6,9	–				
10	7,1	–	8,5	–	40	28	20	
12	8,2	–	10,4	–	45	33	22,5	
14	8,1	–	12,7	–				
16	10,1	–	14,2	–	48	36	24	1,6
18	10,8	–	16,2	–				
20	11,4	–	18,2	–	50	38	25	
25	13,6	9,3	23,0	24,1	56	44	32	
32	15,5	9,9	30,0	31,2	60	48	35	





SCOSTAMENTO DEI FORI IN μm *BORE DEVIATION EXPRESSED IN μm*				*SCOSTAMENTO DEGLI ALBERI IN μm* *SHAFTS DEVIATION EXPRESSED IN μm*							
d	F6	H7		d11	e9	g6	h5	h6	h7	h8	m7
0÷3	+12 +6	+10 0		-20 -80	-14 -39	-2 -8	0 -4	0 -6	0 -10	0 -14	+14 +4
>3÷6	+18 +10	+12 0		-30 -105	-20 -50	-4 -12	0 -5	0 -8	0 -12	0 -18	+20 +8
>6÷10	+22 +13	+15 0		-40 -130	-25 -61	-5 -14	0 -6	0 -9	0 -15	0 -22	+25 +10
>10÷18	+27 +16	+18 0		-50 -160	-32 -75	-6 -17	0 -8	0 -11	0 -18	0 -27	+30 +12
>18÷30	+33 +20	+21 0		-65 -195	-40 -92	-7 -20	0 -9	0 -13	0 -21	0 -33	+36 +15
>30÷50	+41 +25	+25 0		-80 -240	-50 -112	-9 -25	0 -11	0 -16	0 -25	0 -39	+42 +17
>50÷80	+49 +30	+30 0		-100 -290	-60 -134	-10 -29	0 -13	0 -19	0 -30	0 -46	+50 +20
>80÷120	+58 +36	+35 0		-120 -340	-72 -159	-12 -34	0 -15	0 -22	0 -35	0 -54	+58 +23
>120÷180	+68 +43	+40 0		-145 -395	-85 -185	-14 -39	0 -18	0 -25	0 -40	0 -63	+67 +27
>180÷250	+79 +50	+46 0		-170 -460	-100 -215	-15 -44	0 -20	0 -29	0 -46	0 -72	+77 +31
>250÷315	+88 +56	+52 0		-190 -510	-110 -240	-17 -49	0 -23	0 -32	0 -52	0 -81	+86 +34
>315÷400	+98 +62	+57 0		-210 -570	-125 -265	-18 -54	0 -25	0 -36	0 -57	0 -89	+94 +37
>400÷500	+108 +68	+63 0		-230 -630	-135 -290	-20 -60	0 -27	0 -40	0 -63	0 -97	+103 +40

GRUPPI DI MATERIALE - MATERIALS GROUP

DIN ISO 513	MATERIALE MATERIAL	TIPO DI LEGA ALLOYS TYPE	STATO STATE	HB [1]HRC [2]N/mm²	VDI 3323 GR.
P	**ACCIAIO NON LEGATO, ACCIAIO FUSO** NOT-ALLOY STEEL, CAST STEEL	C < 0,15 %	Ricotto (di addolcimento) - Annealed(soft)	125	1
		C < 0,15-0,55 %	Ricotto (di addolcimento) - Annealed(soft)	190	2
			Bonificato - Quenched and Tempered	250	3
		C > 0,55 %	Ricotto (di addolcimento) - Annealed(soft)	220	4
			Bonificato - Quenched and Tempered	300	5
	ACCIAIO DEBOLMENTE LEGATO LOW-ALLOY STEEL		Ricotto (di addolcimento) - Annealed(soft)	180	6
			Bonificato - Quenched and Tempered	250/300	7/8
			Bonificato - Quenched and Tempered	350	9
	ACCIAIO ALTO LEGATO, ACCIAIO DA UTENSILI HIGH ALLOY STEEL, TOOL STEEL		Ricotto (di addolcimento) - Annealed(soft)	200	10
			Bonificato - Quenched and Tempered	325	11
	ACCIAIO INOSSIDABILE STAINLESS STEEL		Ferritico/ Martensitico - Ferritic/ Martensitic	200	12
			Martensitico/Indurito x Precipitazione Martensitic/ Precipitation Hardened	240	13
M	**ACCIAIO INOSSIDABILE** STAINLESS STEEL		Austenitico - Austenitic	180	14.1
			Duplex (Austenitico/Ferritico) Duplex (Austenitic/Ferritic)	230-260	14.2
K	**GHISA GRIGIA** GRAY IRON	G, GG	Ferritico / Perlitico - Ferritic / Pearlitic	180	15
			Perlitico - Pearlitic	260	16
	GHISA A GRAFITE SFEROIDALE, NODULARE NODULAR CAST IRON	GS, GGG	Ferritico - Ferritic	160	17
			Perlitico - Pearlitic	250	18
	GHISA MALLEABILE (DURA) MALLEABLE CAST IRON	GMN, GTS/GTW	Ferritico - Ferritic	130	19
			Perlitico - Pearlitic	230	20
N	**LEGHE DI ALLUMINIO** ALUMINIUM ALLOYS		Non Invecchiabile - Cannot be aged	60	21
			Invecchiato - Aged	100	22
	LEGHE COLATE DI ALLUMINIO CAST ALUMINIUM ALLOYS	Si <= 12 %	Non Invecchiabile - Cannot be aged	75	23
			Invecchiato - Aged	90	24
		Si > 12 %	Non Invecchiabile - Cannot be aged	130	25
	RAME E LEGHE DI RAME COPPER, COPPER ALLOYS	Ottone aut. Pb>1% - Free cutting brass	-	110	26
		Ottone, Bronzo - Brass, Bronze	-	90	27
		Bronzo, Rame elettrolitico - Bronze, Elctrolytic copper	-	100	28
	MATERIALI NON METALLICI NONMETALLIC MATERIALS	Duroplastica, rinf. con fibre - Thermosetting, fiber reinf.	-	-	29
		Gomma dura, Ebanite - Hard rubber, Ebanite	-	-	30
S	**LEGHE RESISTENTI AL CALORE** HIGH-TEMPERATURE ALLOYS	Base Fe - Fe-Basis	Ricotto (di addolcimento) - Annealed(soft)	200	31
			Invecchiato - Aged	280	32
		Base Ni o Co - Ni/Co-Basis	Ricotto (di addolcimento) - Annealed(soft)	250	33
			Invecchiato - Aged	350	34
			Colato - Cast	320	35
	TITANIO, LEGHE DI TITANIO TITANIUM, TITANIUM ALLOYS	Titanio puro - pure titan	-	400[2]	36
		Leghe Alfa + Beta - Alpha+Beta alloys	Colato - Cast	1050[2]	37
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			Temprato - Hardened	55[1]	38.2
			Temprato - Hardened	60[1]	39.1
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			Colato - Cast	> 440	40.2
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NOTE :

- Ci riserviamo di apportare modifiche tecniche senza obbligo di preavviso.

- We reserve the right to make any technical changes without prior notice

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