

EVO®

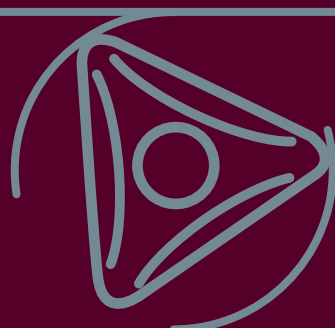
EN.02



| **Turning Tools**

| **Utensili di Tornitura**

... THE WAY TO THE FUTURE!



EVO®



| **Turning Tools**

| **Utensili di Tornitura**



EVO[®]



...THE WAY TO THE FUTURE!

EVO International Group Srl

Via Bernocchi, 7

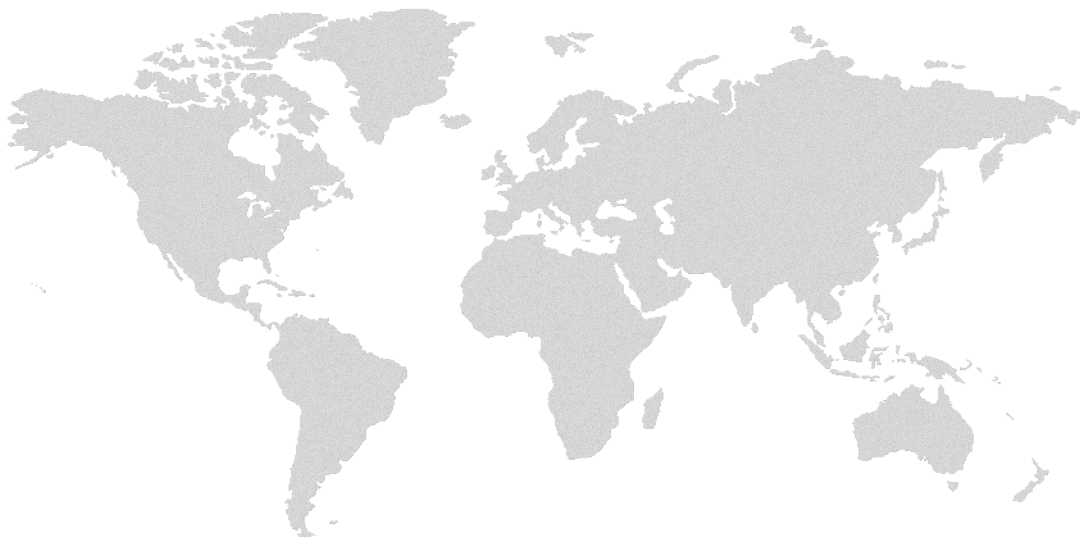
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EVO® is a Company that offers products for all fields of metalworking, with the guarantee of high technology and personalized service.

Our staff is the translator and mediator of the needs of our customers with the manufacturers. Relying on a careful observation and cooperation with the reality of the users, the trust and attention given by the partners, we offer the most efficient solutions and the best performance of the products in the machine.

Our proposal, supported by a constant service that is the core of our job, wants to evolve continuously as the needs of metalworking.

To extend our offer of precision tools, clamping systems, circular sawblades and oil, now we introduce the new catalog dedicated to the turning tools.

In order to create its line of inserts, EVO® has studied and tested in the machine the result of new sintering and coating technologies.

Our research, carried out consistently over the years, allows us today to offer a wide range of products in order to suit any working conditions and work effectively with several materials, with the guarantee of a reliable result.

In this catalog we present our turning and grooving inserts designed to work efficiently and precisely every type of material: our technicians are at your disposal to illustrate it and suggest the most appropriate choice for your needs.



EVO® è un'azienda che offre prodotti per tutti i settori della lavorazione dei metalli, con la garanzia di un alto contenuto tecnologico e un servizio personalizzato.

Il nostro staff si pone come traduttore e interprete delle esigenze dei nostri clienti presso i costruttori, nell'ottica di proporre, in virtù di un'attenta osservazione e collaborazione con la realtà degli utilizzatori e della fiducia e attenzione riservata dai produttori, soluzioni sempre più efficienti e migliori performance dei prodotti in macchina. La nostra proposta, supportata da un servizio di assistenza costante che è il cuore del nostro lavoro, vuole essere in continua evoluzione, così come lo sono le esigenze della lavorazione dei metalli.

All'offerta di utensili di precisione, sistemi di serraggio, lame circolari e olio affianchiamo ora anche il nuovo catalogo dedicato alla tornitura.

Per creare la sua linea di inserti, EVO® ha studiato e provato in macchina il risultato delle nuove tecnologie di sinterizzazione e rivestimento.

La nostra ricerca, svolta con costanza nel corso degli anni, ci permette oggi di offrire una gamma di prodotto articolata in modo da adattarsi alle diverse condizioni di lavoro e lavorare efficacemente differenti materiali, con la garanzia di un risultato affidabile.

In questo catalogo presentiamo i nostri inserti di tornitura e troncatura, studiati per lavorare con efficienza e precisione tutti i tipi di materiale: i nostri tecnici sono a vostra disposizione per illustrarlo e suggerirvi la scelta dell'inserto più idoneo alle vostre esigenze.

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...THE WAY TO THE FUTURE!





INDEXABLE INSERTS FOR TURNING TOOLS

Turning - Negative Inserts	
Tornitura - Inserti Negativi	16
Turning - Positive Inserts	
Tornitura - Inserti Positivi	52
Grooving	
Troncatura	83
CBN Inserts	
Inserti CBN	87
PCD Inserts	
Inserti PCD	97
Mini Borings	
Mini Barenì	105

INFO

Info	141
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EVO CODIFICATION FOR TURNING INSERTS | CODIFICA EVO PER INSERTI DI TORNITURA

EVO TURNING INSERTS
INSERTI DI TORNITURA EVOISO CODIFICATION
CODIFICA ISO

ENK . CNMG120408 .

**GEOMETRY - CHIP BREAKER FORM
GEOMETRIA - FORMA DEL ROMPIRUCIOLO**

KM = Cast iron/Stainless steel
Ghisa/Acciaio inossidabile

KP = Cast iron/Steel | Ghisa/Acciaio

KS = Cast iron/Superalloys
Ghisa/Superleghe

MK = Stainless steel/Cast iron
Acciaio inossidabile/Ghisa

MP = Stainless steel/Steel
Acciaio inossidabile/Acciaio

MS = Stainless steel/Superalloys
Acciaio inossidabile/Superleghe

NS = Aluminium alloys/Superalloys
Leghe d'alluminio/Superleghe

PK = Steel/Cast iron | Acciaio/Ghisa

PM = Steel/Stainless steel
Acciaio/Acciaio inossidabile

SM = Superalloys/Stainless steel
Superleghe/Acciaio inossidabile

**GEOMETRY - FEED RATE LEVEL
GEOMETRIA - GRADO D'AVANZAMENTO**

0 = Ultra soft - superfinishing
Ultra leggero - superfinitura

1 = Super soft - excellent finishing
Super leggero - finitura eccellente

2 = Soft - good finishing
Leggero - buona finitura

3 = Soft/Medium - fairly good finishing
Leggero/Medio - finitura discreta

4 = Medium/Soft - light chips removal
Medio/Leggero - asportazione truciolo leggera

5 = Medium - standard chips removal
Medio - asportazione truciolo standard

6 = Medium/Heavy - good chips removal
Medio/Pesante - buona asportazione truciolo

7 = Heavy - high chips removal
Pesante - elevata asportazione truciolo

8 = Super heavy - excellent chips removal
Super pesante - eccellente asportazione truciolo

9 = Ultra heavy - maximum chips removal
Ultra pesante - massima asportazione truciolo

SINTERING TECHNOLOGY TECNICA DI SINTERIZZAZIONE

LO = Micrograin sintering technology
Tecnologia di sinterizzazione micrograno

OK = Micrograin sintering technology with optimized toughness
Tecnologia di sinterizzazione micrograno a tenacità ottimizzata

AK = Ultra micrograin sintering technology
Tecnologia di sinterizzazione ultra-micrograno

0 = Negative inserts
Inseriti negativi

5 = Positive inserts
Inseriti positivi

OK MP 4 0 . N 40 25

CARBIDE METALLO DURO

N = Turning grade
Qualità per tornitura

Z = Threading grade
Qualità per filettatura

M = Milling grade
Qualità per fresatura

D = Drilling grade
Qualità per foratura

_C = Cermet

_U = Uncoated
Non rivestito

CARBIDE GRADE APPLICATION QUALITÀ DI METALLO DURO APPLICAZIONI

10...19 = Aluminum
Alluminio

30...39 = Steel
Acciaio

40...49 = Stainless steel
Acciaio inossidabile

60...69 = Cast iron
Ghisa

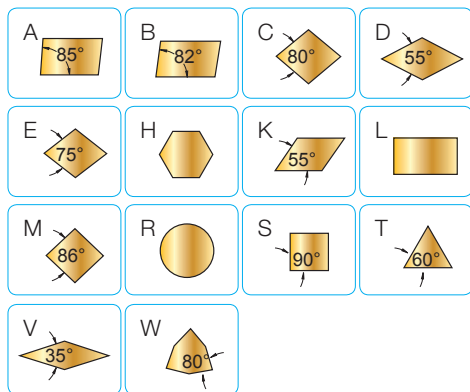
80...89 = Superalloys
Superleghe

ISO CLASSIFICATION CLASSIFICAZIONE ISO

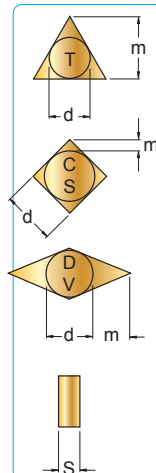
es. 4025 = M25

ISO CODIFICATION FOR TURNING INSERTS | CODIFICA ISO PER INSERTI DI TORNITURA

INSERT SHAPE | FORMA DELL'INSERTO



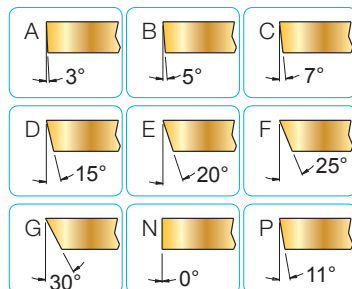
TOLERANCE (+/- mm) | TOLLERANZA (+/- mm)



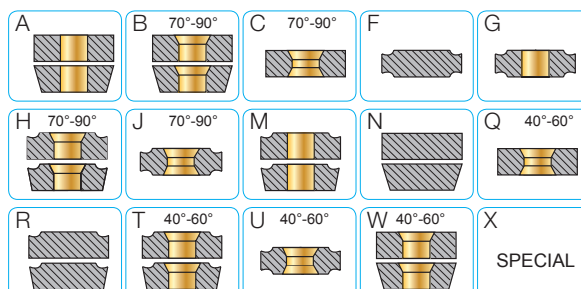
	m	s	d
A	$\pm 0,005$	$\pm 0,025$	$\pm 0,025$
C	$\pm 0,013$	$\pm 0,025$	$\pm 0,025$
E	$\pm 0,025$	$\pm 0,025$	$\pm 0,025$
F	$\pm 0,005$	$\pm 0,025$	$\pm 0,013$
G	$\pm 0,025$	$\pm 0,05$ $\pm 0,13$	$\pm 0,025$
H	$\pm 0,013$	$\pm 0,025$	$\pm 0,013$
J	$\pm 0,005$	$\pm 0,025$	$\pm 0,05$ $\pm 0,13$
K	$\pm 0,013$	$\pm 0,025$	$\pm 0,05$ $\pm 0,13$
L	$\pm 0,05$	$\pm 0,013$	$\pm 0,025$
M	$\pm 0,08$ $\pm 0,18$	$\pm 0,13$	$\pm 0,05$ $\pm 0,18$
N	$\pm 0,08$ $\pm 0,18$	$\pm 0,025$	$\pm 0,05$ $\pm 0,13$
U	$\pm 0,13$ $\pm 0,38$	$\pm 0,05$ $\pm 0,13$	$\pm 0,08$ $\pm 0,32$

C N M G 12 04 08

**RELIEF ANGLES
ANGOLI DI SPOGLIA INFERIORE**



INSERT TYPE | TIPO DI INSERTO



THICKNESS | SPESSORE

S	mm
01	1.59
T1	1.97
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

RADIUS | RAGGIO

R	MO (*)
MO (mm)	
r (mm)	
02	r=0.2
04	r=0.4
05	r=0.5
06	r=0.6
08	r=0.8
10	r=1.0
12	r=1.2
16	r=1.6

CUTTING EDGE LENGTH | LUNGHEZZA TAGLIANTE

Ø d inscribed circle inscritto	A	C	D	E	K	L	M	R	S	T	V	W
3,97												02
4,76										08		02-03
5,56		05								09		
6,00												03
6,35		06	07	06			06		06	11	11	04
6,70	10											
7,94									07			
8,00				08								05
9,45	16											
9,52	15-16	09	11	09	16	15	09		09	16	16	06
10,00								10				06
11,00									11			
11,50						12						
12,00								12				07
12,62						18						
12,70		12	15	12		15-20			12	22		08
15,87		16							15			
19,05		19							19			

**EVO CODIFICATION FOR EXTERNAL TURNING TOOLS
CODIFICA EVO PER UTENSILI PORTAINNERO PER TORNITURA ESTERNA**

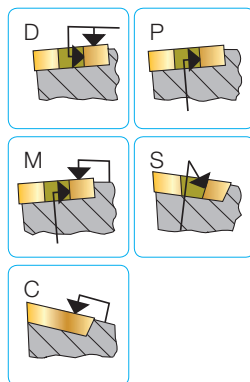
EVO TURNING TOOLS
UTENSILI DI TORNITURA EVO

ISO CODIFICATION - EXTERNAL TOOLS
CODIFICA ISO PER UTENSILI ESTERNI

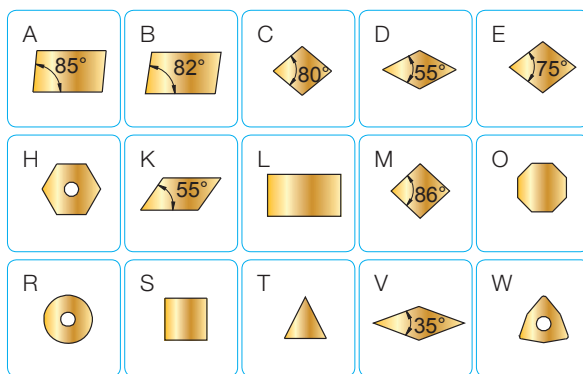
ENH. DCLNR 1616 H 09

**ISO CODIFICATION FOR EXTERNAL TURNING TOOLS
CODIFICA ISO PER UTENSILI DI TORNITURA ESTERNA**

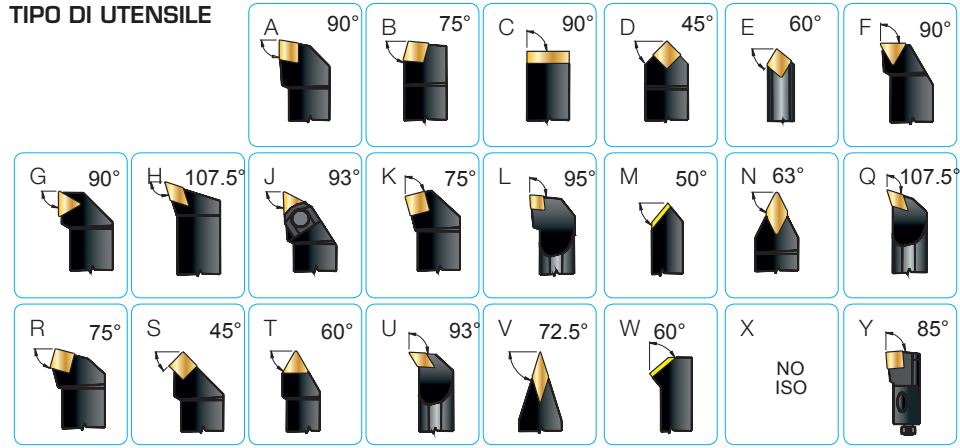
**CLAMPING TYPE
TIPO DI BLOCCAGGIO**



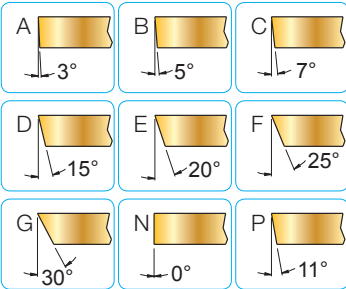
INSERT SHAPE | FORMA DELL'INSERTO



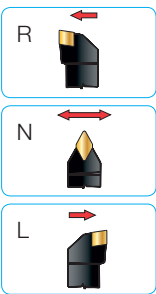
**TOOL TYPE
TIPO DI UTENSILE**



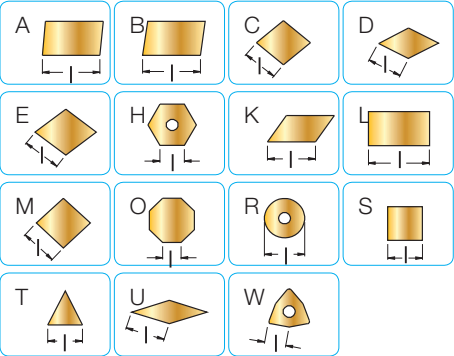
RAKE ANGLES
ANGOLI DI SPOGLIA



WORKING
DIRECTION
DIREZIONE
DI LAVORO



CUTTING EDGE LENGTH
LUNGHEZZA TAGLIANTE



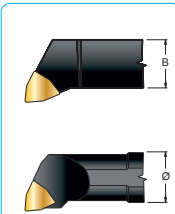
D C L N R 20 20 K 12

SHANK HEIGHT
ALTEZZA STELO



OPTIONAL
FACOLTATIVO

SHANK WIDTH
LARGHEZZA
STELO



TOOL LENGTH | LUNGHEZZA UTENSILE

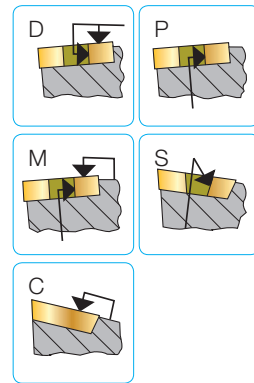
L1 mm	ISO	L1 mm	ISO
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	H	400	V
110	J	450	W
125	K	500	Y
140	L	special	X
150	M		

ISO CODIFICATION FOR INTERNAL TURNING TOOLS CODIFICA ISO PER UTENSILI DI TORNITURA INTERNA

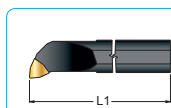
SHANK | STELO:

S=	Steel shank Stelo in acciaio
A=	Steel shank + coolant hole Stelo in acciaio + foro refrigerante
B=	Steel shank + anti-vibration device Stelo in acciaio + dispositivo antivibrante
C=	Carbide shank with steel head Stelo in metallo duro con testa in acciaio
D=	Steel shank + anti-vibration device + coolant hole Stelo in acciaio + dispositivo antivibrante + foro refrigerante
E=	Carbide shank with steel head + coolant hole Stelo in metallo duro con testa in acciaio + foro refrigerante
F=	Carbide shank with steel head + anti-vibration device Stelo in metallo duro con testa in acciaio + dispositivo antivibrante
G=	Carbide shank with steel head + anti-vibration device + coolant hole Stelo in metallo duro con testa in acciaio + dispositivo antivibrante + foro refrigerante
H=	Heavy metal shank Stelo in metallo pesante
J=	Heavy metal shank + coolant hole Stelo in metallo pesante + foro refrigerante

CLAMPING TYPE TIPO DI BLOCCAGGIO

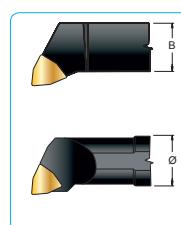


TOOL LENGTH | LUNGHEZZA UTENSILE

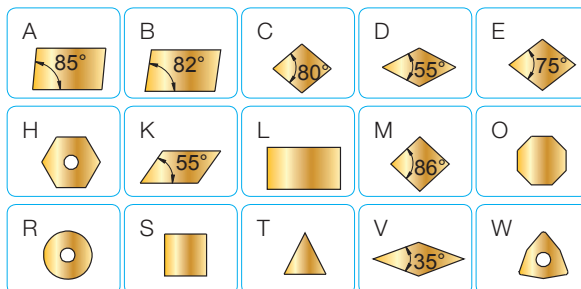


L1 mm	ISO	L1 mm	ISO
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	G	400	V
110	J	450	W
125	K	500	Y
140	L	special	X
150	M		

SHANK WIDTH LARGHEZZA STELO



INSERT SHAPE | FORMA DELL'INSERTO



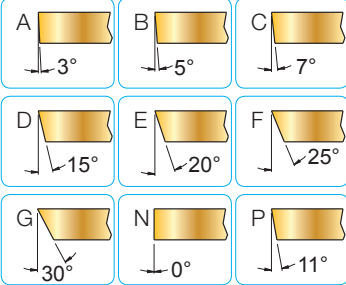
EVO CODIFICATION FOR INTERNAL TURNING TOOLS
CODIFICA EVO PER UTENSILI PORTAININSERTO PER TORNITURA INTERNA

EVO TURNING TOOLS
UTENSILI DI TORNITURA EVO

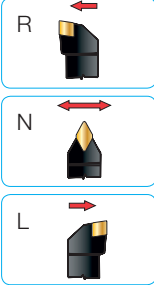
ISO CODIFICATION - INTERNAL TOOLS
CODIFICA ISO - UTENSILI INTERNI

ENH. A 22 R - DCLNR. 12

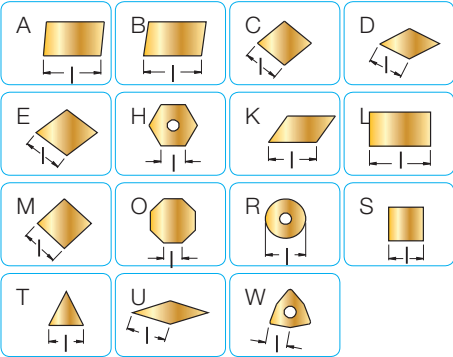
RAKE ANGLES
ANGOLI DI SPOGLIA



WORKING
DIRECTION
DIREZIONE
DI LAVORO

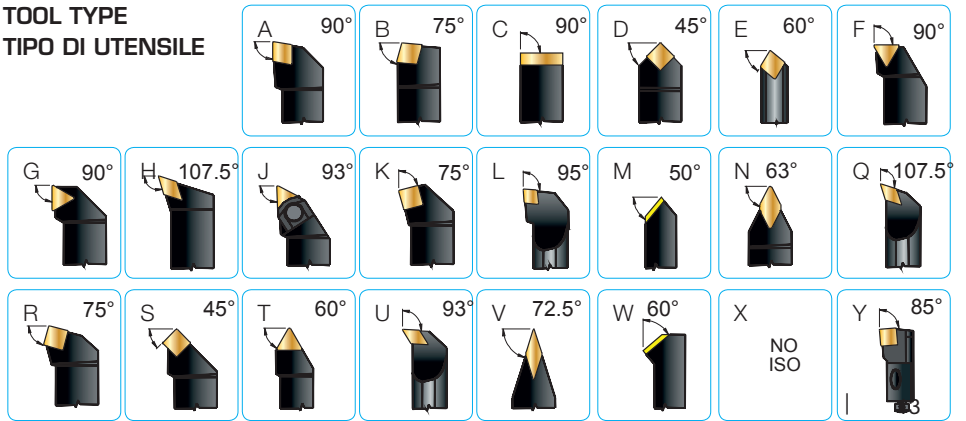


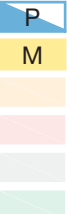
CUTTING EDGE LENGTH
LUNGHEZZA TAGLIANTE



A 22 R - DCLNR 12

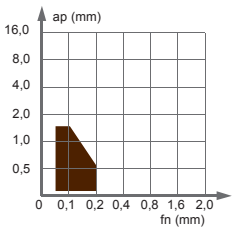
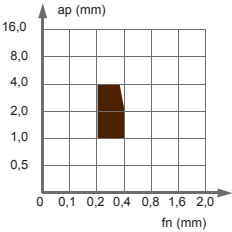
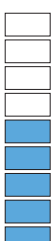
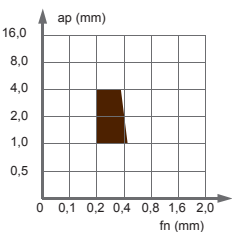
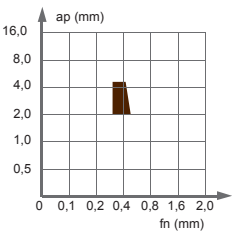
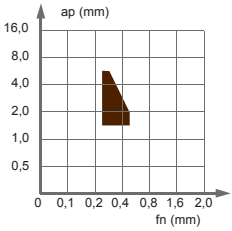
TOOL TYPE
TIPO DI UTENSILE



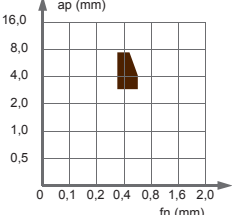
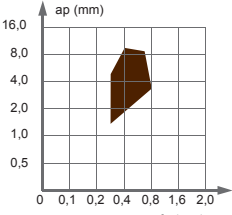
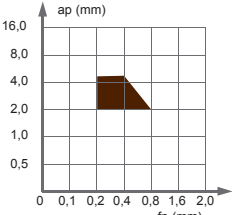
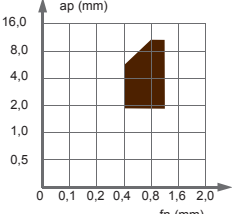
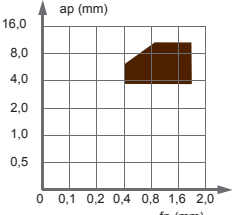
EVO	DIN ISO 513		Material Materiale	Toughness Tenacità	Application Applicazione
N3015	Coated carbide Metallo duro rivestito	P05-25 K10-35			- ideal grade for high volume machining - good heat resistance - suitable for machining dry even with high cutting speeds - qualità ideale per elevati volumi di produzione - buona resistenza al calore - adatta per lavorazioni a secco anche con alte velocità di taglio
N3025 N3125	Coated carbide Metallo duro rivestito	P15-35 M10-25 K25-35			- wide range of applications - ideal for steel and cast iron - good performance also on stainless steel - qualità ad ampia gamma d'impiego - ideale per acciaio e ghisa - buone prestazioni anche su acciaio inossidabile
N4025 N4125	Coated carbide Metallo duro rivestito	P30-40 M15-35			- grade with good toughness and hardness - excellent wear resistance at low and high cutting speeds - innovative PVD coating with high thermal protection - qualità con buona tenacità e durezza a caldo - ottima resistenza all'usura sia a basse che alte velocità di taglio - rivestimento PVD di ultima generazione ad alta protezione termica
N8010	Coated carbide Metallo duro rivestito	M05-20 S05-20			- excellent heat and wear resistance - ideal for superalloys - eccellente resistenza al calore e all'usura - ideale per la lavorazione delle superleghe
N6015	Coated carbide Metallo duro rivestito	P05-20 K10-25			- micro grain grade with high wear resistance - CVD coating with improved structure - specific grade for finishing operations on Cast Iron - micrograno con elevata resistenza all'usura - rivestimento CVD a struttura ottimizzata - grado specifico per operazioni di finitura su ghisa
N6020	Coated carbide Metallo duro rivestito	P01-20 K20-35			- cast iron specific grade - grado specifico per ghisa

EVO	DIN ISO 513		Material Materiale	Toughness Tenacità	Application Applicazione
N6025	Coated carbide Metallo duro rivestito	P15-25 K20-35			- grade with good wear resistance - CVD coating - Cast Iron specific grade - grado con buona resistenza all'usura - rivestimento CVD - grado specifico per ghisa
					
					
					
					
					
N6030	Coated carbide Metallo duro rivestito	P20-35 K25-40			- micro grain grade with high wear resistance - CVD coating with improved structure - specific grade for medium-heavy machining on cast iron - micrograno con elevata resistenza all'usura - rivestimento CVD a struttura ottimizzata - grado specifico per lavorazioni medio-gravose su ghisa
					
					
					
					
					

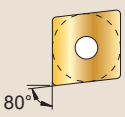
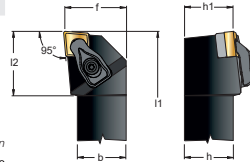
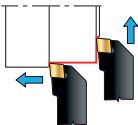
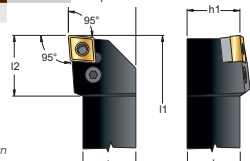
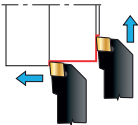
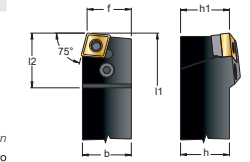
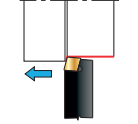
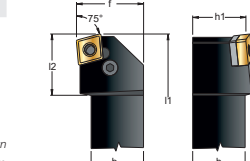
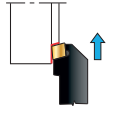
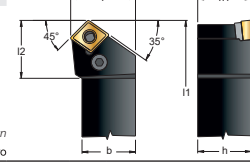
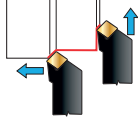
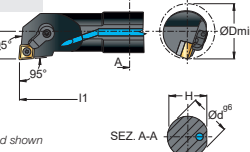
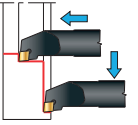
Negative inserts | Inserti negativi

EVO	Material Materiale	Machining Lavorazione	Strenght Robustezza	ap/f	Application Applicazione
PM30 0.15 					Sharp geometry with main application for finishing and light machining on steel and stainless steel. Could be used on cast iron. Geometria affilata con principale applicazione nella finitura e nella lavorazione leggera di acciaio ed acciaio inossidabile. Può essere utilizzata su ghisa.
MP40 0.29 					Sharp geometry with main application on medium-light machining on stainless steel. It can also be used on steel. Geometria affilata con principale applicazione nell'asportazione medio-leggera di acciaio inossidabile. Può essere impiegata anche su acciaio.
PK50 0.20 					Geometry for medium-light machining mainly of steel and cast iron with secondary application on stainless steel. Geometria adatta all'asportazione medio-leggera principalmente su acciaio e ghisa con possibilità di impiego anche su acciaio inossidabile.
KP60 					Geometry mainly for medium-heavy machining on cast iron. It can also be used for medium machining on steel. Geometria adatta principalmente all'asportazione medio-pesante su ghisa. Può anche essere impiegata per asportazioni medie su acciaio.
MP70 0.30 					Geometry mainly for heavy machining on stainless steel. It can also be used for heavy machining on steel. Geometria adatta principalmente all'asportazione pesante su acciaio inossidabile. Può anche essere impiegata per asportazioni pesanti su acciaio.

Negative inserts | Inserti negativi

EVO	Material Materiale	Machining Lavorazione	Strenght Robustezza	ap/f	Application Applicazione
PK70 	P M K				Geometry mainly for medium and heavy machining on steel and medium machining on cast iron. It can also be used for heavy machining on cast iron and light-medium machining on stainless steel. Good stability of the cutting edge. Geometria adatta principalmente all'asportazione media e pesante su acciaio e media su ghisa. Può anche essere impiegata per asportazioni pesanti su ghisa e medio-pesanti su acciaio inossidabile. Buona stabilità del tagliente.
KP70 	P M K				Geometry mainly for medium-heavy machining on cast iron and steel. It can also be used for light machining on stainless steel. Good stability of the cutting edge. Geometria adatta principalmente all'asportazione medio-pesante su ghisa e acciaio. Può anche essere impiegata per asportazioni leggere di acciaio inossidabile. Buona stabilità del tagliente.
PM70 	P M K				Geometry mainly for medium-heavy machining on steel. It can also be used for medium-heavy machining on stainless steel and cast iron. Good stability of the cutting edge. Geometria adatta principalmente all'asportazione medio-pesante su acciaio. Può anche essere impiegata per asportazioni medio-pesante su acciaio inossidabile e ghisa. Buona stabilità del tagliente.
KP80 	P M K				Geometry mainly for heavy machining on cast iron and medium machining on steel. It can also be used for heavy machining on steel and stainless steel. Excellent stability of the cutting edge. Geometria adatta principalmente all'asportazione pesante su ghisa e media su acciaio. Può anche essere impiegata per asportazioni pesanti su acciaio e acciaio inossidabile. Ottima stabilità del tagliente.
KP90 	P M K				Geometry mainly for heavy machining on cast iron and steel. It can also be used for heavy machining on stainless steel. Excellent stability of the cutting edge. Geometria adatta principalmente all'asportazione pesante su ghisa e acciaio. Può anche essere impiegata per asportazioni pesanti su acciaio inossidabile. Ottima stabilità del tagliente.

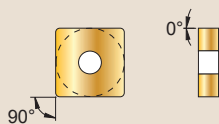


CN  80° 0° CNGP CNMG CNMA CNMM	24
ENH. DCLNR/L 95° □ 20x20 - 32x32  Right-hand shown In figura utensile destro	 CNMA  CNMG  CNMM  D  27
ENH. PCLNR/L 95° □ 16x16 - 40x40  Right-hand shown In figura utensile destro	 CNMA  CNMG  CNMM  P  28
ENH. PCBNR/L 75° □ 20x20 - 40x40  Right-hand shown In figura utensile destro	 CNMA  CNMG  CNMM  P  29
ENH. PCKNR/L 75° □ 20x20 - 40x40  Right-hand shown In figura utensile destro	 CNMA  CNMG  CNMM  P  29
ENH. PCSNR/L 45° □ 20x20 - 25x25  Right-hand shown In figura utensile destro	 CNMA  CNMG  CNMM  P  29
ENH. A MCLNR/L 95° Ø 25 - 50  Right-hand shown In figura utensile destro	 CNMA  CNMG  CNMM  M  30

ENH. A PCLNR/L 95° Ø 20 - 50				CNMA		P	31
				CNMG			
				CNMM			
DN__				DNGP DNMG			32
ENH. DDJNR/L 93° □ 20x20 - 32x32				DNMA		D	33
				DNMG			
				DNMM			
ENH. PDJNR/L 93° □ 16x16 - 32x32				DNMA		P	34
				DNMG			
				DNMM			
ENH. PDNLR/L 63° □ 20x20 - 32x32				DNMA		P	34
				DNMG			
				DNMM			
ENH. A MDUNR/L 93° Ø 25 - 40				DNMA		M	35
				DNMG			
				DNMM			
ENH. A PDUNR/L 93° Ø 20 - 50				DNMA		P	35
				DNMG			
				DNMM			



SN__

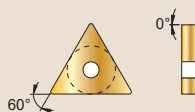


SNMG
SNMA
SNMM

36

ENH. PSBNR/L 75° 20x20 - 40x40 Right-hand shown In figura utensile destro		SNMA SNMG SNMM	P	37
ENH. PSKNR/L 75° 20x20 - 40x40 Right-hand shown In figura utensile destro		SNMA SNMG SNMM	P	37
ENH. PSSNR/L 45° 20x20 - 40x40 Right-hand shown In figura utensile destro		SNMA SNMG SNMM	P	38
ENH. PSDNN 45° 20x20 - 32x32 Right-hand shown In figura utensile destro		SNMA SNMG SNMM	P	38
ENH. A_PSKNR/L 75° Ø 25 - 40 Right-hand shown In figura utensile destro SEZA-A		SNMA SNMG SNMM	P	39

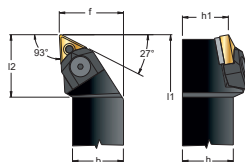
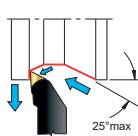
TN__


TNMG
TNMA

40

ENH. MTJNR/L 93°

16x16 - 32x32


Right-hand shown
In figura utensile destro


TNMA



TNMG



TNMM



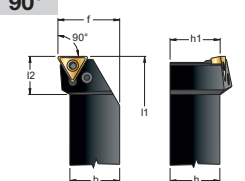
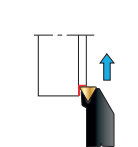
M



42

ENH. PTFNR/L 90°

20x20 - 32x32


Right-hand shown
In figura utensile destro


TNMA



TNMG



TNMM



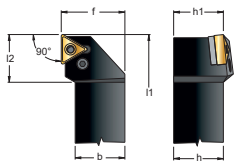
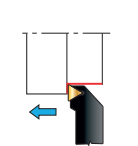
P



42

ENH. PTGNR/L 90°

20x20 - 32x32


Right-hand shown
In figura utensile destro


TNMA



TNMG



TNMM



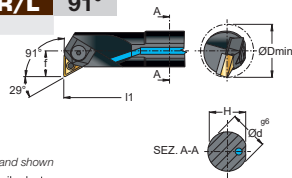
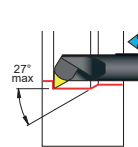
P



42

ENH. A MTFNR/L 91°

Ø 25 - 50


Right-hand shown
In figura utensile destro


TNMA



TNMG



TNMM



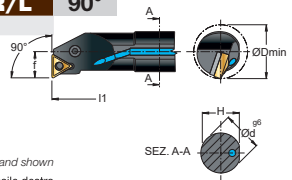
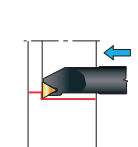
M



43

ENH. A PTFNR/L 90°

Ø 16 - 40


Right-hand shown
In figura utensile destro


TNMA



TNMG



TNMM



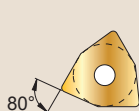
P



43



WN__



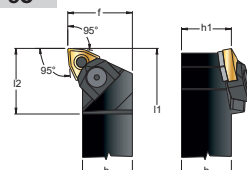
WNGP
WNMG
WNMA

44

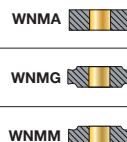
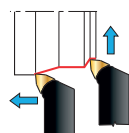
ENH. MWLNR/L

95°

20x20 - 32x32



Right-hand shown
In figura utensile destro

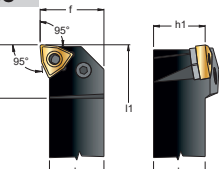


46

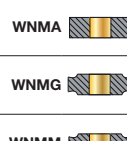
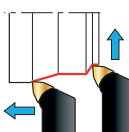
ENH. PWLNR/L

95°

16x16 - 32x32



Right-hand shown
In figura utensile destro

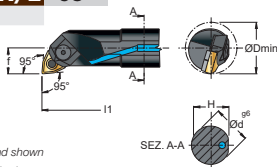


46

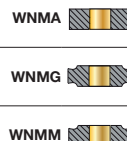
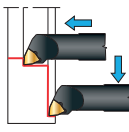
ENH. A MWLNR/L

95°

Ø 20 - 50



Right-hand shown
In figura utensile destro

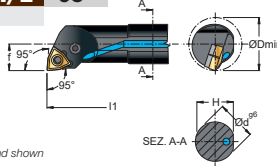


47

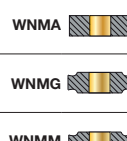
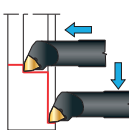
ENH. A PWLNR/L

95°

Ø 16 - 40

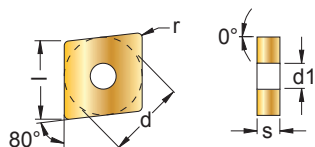


Right-hand shown
In figura utensile destro



47

EVO® | 23



Insert / Inserto	l	d	s	d1
CNMG	1204	12,90	12,70	4,76
	1606	16,10	15,87	6,35
	1906	19,30	19,05	7,94

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CNMG 120404 . OKPM30 . N3015	10,60	0,4						
ENK . CNMG 120408 . OKPM30 . N3015	10,60	0,8						
ENK . CNMG 120404 . AKPM30 . N3015	10,60	0,4						
ENK . CNMG 120408 . AKPM30 . N3015	10,60	0,8						
ENK . CNMG 120412 . AKPM30 . N3015	10,60	1,2						

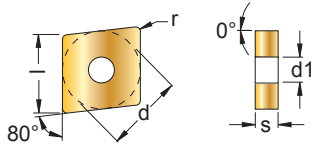
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CNMG 120408 . OKPK50 . N3015	10,60	0,8						
ENK . CNMG 120404 . AKPK50 . N3015	10,60	0,4						
ENK . CNMG 120408 . AKPK50 . N3015	10,60	0,8						
ENK . CNMG 120412 . AKPK50 . N3015	10,60	1,2						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CNMG 120408 . AKPM70 . N3015	10,60	0,8						
ENK . CNMG 120412 . AKPM70 . N3015	10,60	1,2						
ENK . CNMG 160612 . AKPM70 . N3015	17,50	1,2						
ENK . CNMG 190612 . AKPM70 . N3015	22,70	1,2						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMG 120412 . AKPM30 . N3025	10,60	1,2							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMG 120408 . OKPK50 . N3025	10,60	0,8							
ENK . CNMG 120412 . OKPK50 . N3025	10,60	1,2							
ENK . CNMG 190612 . OKPK50 . N3025	22,70	1,2							
ENK . CNMG 120404 . AKPK50 . N3025	10,60	0,4							
ENK . CNMG 120408 . AKPK50 . N3025	10,60	0,8							
ENK . CNMG 120412 . AKPK50 . N3025	10,60	1,2							
ENK . CNMG 160608 . AKPK50 . N3025	17,50	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMG 120408 . AKPM70 . N3025	10,60	0,8							
ENK . CNMG 120412 . AKPM70 . N3025	10,60	1,2							
ENK . CNMG 160612 . AKPM70 . N3025	17,50	1,2							
ENK . CNMG 160616 . AKPM70 . N3025	17,50	1,2							
ENK . CNMG 190612 . AKPM70 . N3025	22,70	1,2							



Insert / Inserto	l	d	s	d1
CNMG	1204	12,90	12,70	4,76
	1606	16,10	15,87	6,35
	1906	19,30	19,05	6,35

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMG 120408 . OKPK70 . N3025	10,60	0,8							
ENK . CNMG 120412 . OKPK70 . N3025	10,60	1,2							
ENK . CNMG 160612 . OKPK70 . N3025	17,50	1,2							

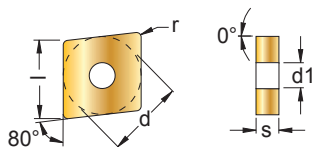
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . CNMG 120404 . OKMP40 . N4025	10,60	0,4						
ENK . CNMG 120408 . OKMP40 . N4025	10,60	0,8						
ENK . CNMG 120412 . OKMP40 . N4025	10,60	1,2						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . CNMG 120404 . AKMP70 . N4025	10,60	0,4						
ENK . CNMG 120408 . AKMP70 . N4025	10,60	0,8						
ENK . CNMG 120412 . AKMP70 . N4025	10,60	1,2						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S
ENK . CNMG 120408 . AKMP40 . N8010	12,50	0,8						
ENK . CNMG 120412 . AKMP40 . N8010	12,50	1,2						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S
ENK . CNMG 120408 . AKMP70 . N8010	12,50	0,8						
ENK . CNMG 120412 . AKMP70 . N8010	12,50	1,2						
ENK . CNMG 190616 . AKMP70 . N8010	25,80	1,6						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CNMG 120408 . AKKP70 . N6030	10,60	0,8						
ENK . CNMG 120412 . AKKP70 . N6030	10,60	1,2						



Insert / Inserto	l	d	s	d1
CNMM	2509	25,40	25,40	9,52
				9,12

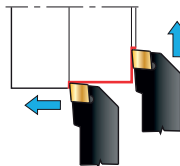
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMM 250924 . AKKP80 . N3025	43,30	2,4					P1.1 170 - 240	M2.1 100 - 210	K1.1 130 - 210
							P2.3 100 - 190	M1.3 70 - 100	K1.2 120 - 240
							P4.2 130 - 210	M1.2 130 - 220	K2.1 150 - 250

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMM 250924 . AKKP90 . N3025	43,30	2,4					P1.1 170 - 240	M2.1 100 - 210	K1.1 130 - 210
							P2.3 100 - 190	M1.3 70 - 100	K1.2 120 - 240
							P4.2 130 - 210	M1.2 130 - 220	K2.1 150 - 250

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMM 250924 . AKKP80 . N3035	43,30	2,4					P1.1 130 - 200	M2.1 80 - 160	
							P2.3 80 - 160	M1.3 40 - 80	
							P4.2 100 - 180	M1.2 100 - 180	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CNMM 250924 . AKKP90 . N3035	43,30	2,4					P1.1 130 - 200	M2.1 80 - 160	
							P2.3 80 - 160	M1.3 40 - 80	
							P4.2 100 - 180	M1.2 100 - 180	

95°



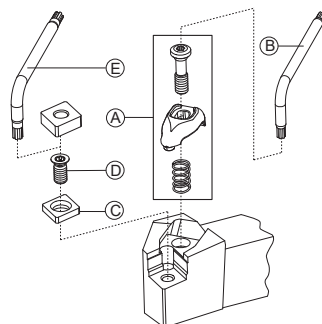
CNMM

D

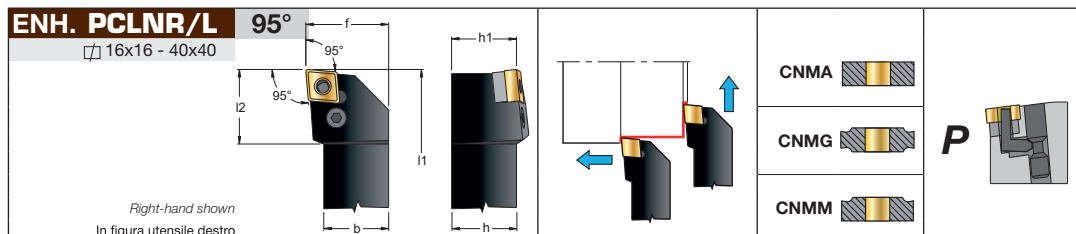


Right-hand shown
In figura utensile destro

	art.		h	b	l1	h1	f	l2			€
ENH .DCLNR/L	2020	K 12	20	20	125	20	25	30	1	1204	89,00
ENH .DCLNR/L	2525	M 12	25	25	150	25	32	33			93,00
ENH .DCLNR/L	3232	P 12	32	32	170	32	40	34			123,00
ENH .DCLNR/L	2525	M 16	25	25	150	25	32	36	2	1606	96,00
ENH .DCLNR/L	3232	P 16	32	32	170	32	40	40			123,00

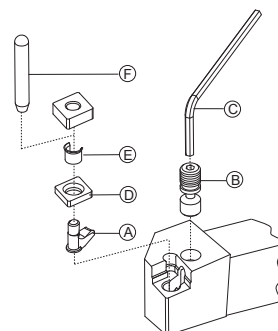


		 Nm	A 	B 	C 	D 	E 
1		3,9	SP-IB.M050-C.258.145.TX15	A-W.TL.TX15	SP-CS.CN12	SP-IV.M050.105.TX20	A-W.TL.TX20
2		6,4	SP-IB.M060-C.312.177.TX20	A-W.TL.TX20	SP-CS.CN16	SP-IV.M060.110.TX25	A-W.TL.TX25



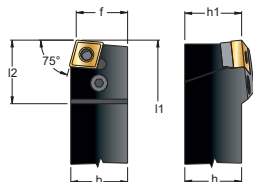
art.	h	b	l1	h1	f	l2			€
ENH. PCLNR/L 1616 H 09	16	16	100	16	20	22	1	0903	85,00
ENH. PCLNR/L 2020 K 09	20	20	125	20	25	26			85,00
ENH. PCLNR/L 2525 M 09	25	25	150	25	32	25			89,00
ENH. PCLNR/L 2020 K 12	20	20	125	20	25	28	2	1204	85,00
ENH. PCLNR/L 2525 M 12	25	25	150	25	32	33			89,00
ENH. PCLNR/L 3225 P 12	32	25	170	32	32	28			103,00
ENH. PCLNR/L 3232 P 12	32	32	170	32	40	30	3	1606	117,00
ENH. PCLNR/L 2525 M 16	25	25	150	25	32	33			92,00
ENH. PCLNR/L 3225 P 16	32	25	170	32	32	33			103,00
ENH. PCLNR/L 3232 P 16	32	32	170	32	40	33	4	1906	117,00
ENH. PCLNR/L 2525 M 19	25	25	150	25	32	36			92,00
ENH. PCLNR/L 3232 P 19	32	32	170	32	40	40			117,00
ENH. PCLNR/L 4040 S 19	40	40	250	40	50	40			177,00

	A	B	C	D	E	F
1	SP -IL.121.097.036	SP -LV.M060.170.B025	A -W.BL.B025	SP -CS.CN08	SP -SS.050.052	SP -PZ.040.060
2	SP -IL.131.127.046	SP -LV.M080.210.B030	A -W.BL.B030	SP -CS.CN12	SP -SS.065.060	SP -PZ.050.065
3	SP -IL.171.155.060	SP -LV.M080.240.B030	A -W.BL.B030	SP -CS.CN16	SP -SS.080.093	SP -PZ.070.070
4	SP -IL.196.211.075	SP -LV.M100.270.B040	A -W.BL.B040	SP -CS.CN19	SP -SS.095.112	SP -PZ.080.070

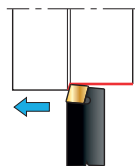


ENH. PCBNR/L 75°

□ 20x20 - 40x40



Right-hand shown
In figura utensile destro



CNMA



CNMG



CNMM



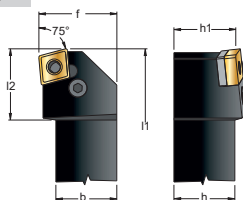
P



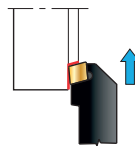
art.	h	b	l1	h1	f	l2			€
ENH.PCBNR/L 2020 K 12	20	20	125	20	17	28			85,00
ENH.PCBNR/L 2525 M 12	25	25	150	25	22	29	1	1204	91,00
ENH.PCBNR/L 3225 P 12	32	25	170	32	22	32			109,00
ENH.PCBNR/L 2525 M 16	25	25	150	25	22	29			96,00
ENH.PCBNR/L 3225 P 16	32	25	170	32	22	32	2	1606	110,00
ENH.PCBNR/L 3232 P 16	32	32	170	32	27	35			117,00
ENH.PCBNR/L 3232 P 19	32	32	170	32	27	35			117,00
ENH.PCBNR/L 4040 S 19	40	40	250	40	35	37	3	1906	177,00

ENH. PCKNR/L 75°

□ 20x20 - 40x40



Right-hand shown
In figura utensile destro



CNMA



CNMG



CNMM



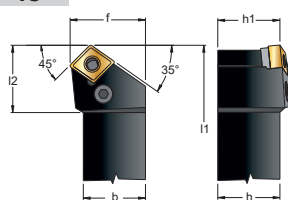
P



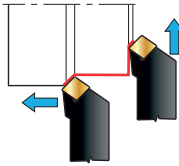
art.	h	b	l1	h1	f	l2			€
ENH.PCKNR/L 2020 K 12	20	20	125	20	25	26	1	1204	85,00
ENH.PCKNR/L 3225 P 12	25	25	150	25	32	30			92,00
ENH.PCKNR/L 2525 M 16	25	25	150	25	32	33	2	1606	96,00
ENH.PCKNR/L 3232 P 16	32	32	170	32	40	34			117,00
ENH.PCKNR/L 3232 P 19	32	32	170	32	40	36			117,00
ENH.PCKNR/L 4040 S 19	40	40	250	40	50	45	3	1906	191,00

ENH. PCSNR/L 45°

□ 20x20 - 25x25



Right-hand shown
In figura utensile destro



CNMA



CNMG



CNMM

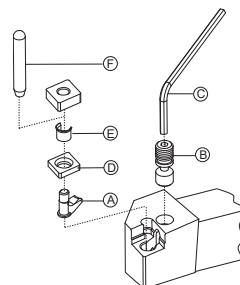


P



art.	h	b	l1	h1	f	l2			€
ENH.PCSNR/L 2020 K 12	20	20	125	20	25	28	1	1204	92,00
ENH.PCSNR/L 2525 M 12	25	25	150	25	32	30			96,00

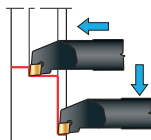
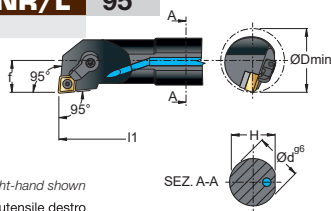
	A	B	C	D	E	F
1	SP -IL131.127.046	SP -LV.M080.210.B030	A -W.BL.B030	SP -CS.CN12	SP -SS.065.060	SP -PZ.050.065
2	SP -IL171.155.060	SP -LV.M080.240.B030	A -W.BL.B030	SP -CS.CN16	SP -SS.080.093	SP -PZ.070.070
3	SP -IL196.211.075	SP -LV.M100.270.B040	A -W.BL.B040	SP -CS.CN19	SP -SS.095.112	SP -PZ.080.070



ENH. A MCLNR/L

95°

Ø 25 - 50



CNMA

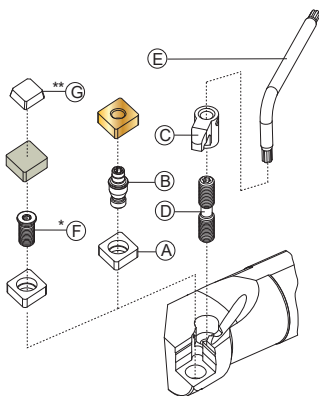
CNMG

CNMM

M



art.	D min	d	l1	f	H			€
ENH.A25R MCLNR/L 12	32	25	200	17	24,0	1204	1204	208,00
ENH.A32S MCLNR/L 12	40	32	250	22	31,0	1204	1204	260,00
ENH.A40T MCLNR/L 12	50	40	300	27	38,5			321,00
ENH.A50U MCLNR/L 12	63	50	350	35	48,0			473,00
ENH.A40T MCLNR/L 16	50	40	300	27	38,5	1606	1606	328,00
ENH.A50U MCLNR/L 16	63	50	350	35	48,0			488,00
ENH.A50U MCLNR/L 19	63	50	350	35	48,0	1906	1906	511,00



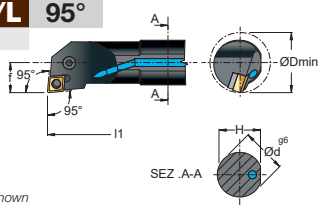
* Seat clamping screw for inserts without bore | Vite di fissaggio del sottopiacchetta per inserti senza foro

** Chip breaker for ceramic inserts and for inserts without bore | Rompitriciolo per inserti ceramici e senza foro

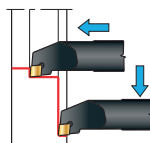
	A	B	C	D	E	F	G
1	-	SP-BPM060.133.TX15	SP-IB.M060-SX.183.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	-	-
2	SP-CS.CN13	SP-BPM060.173.TX15	SP-IB.M060-SX.183.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	SP-VV.M060.127.TX15	SP CB.107.023.025.R
3	SP-CS.CN17	SP-BPM080.220.TX15	SP-IB.M060-SX.183.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	SP-VV.M080.160.TX15	-
4	SP-CS.CN20	SP-BPM100.220.TX25	SP-IB.M080-SX.222.108	SP-SB.M080-SX.M080.300.TX25	A-W.TL.TX25	SP-VV.M100.160.TX15	-

ENH. A PCLNR/L 95°

Ø 20 - 50



Right-hand shown
In figura utensile destro



CNMA

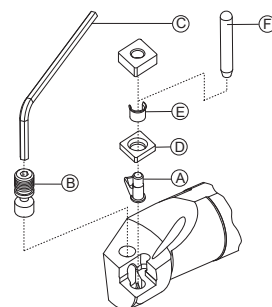
CNMG

CNMM

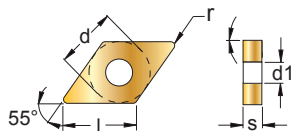
P



art.	D min	d	l1	f	H			€
ENH.A20Q PCLNR/L 09	25	20	180	13	19,0	1	0903	176,00
ENH.A25R PCLNR/L 09	32	25	200	17	24,0	2	0903	182,00
ENH.A25R PCLNR/L 12	32	25	200	17	24,0	3	1204	182,00
ENH.A32S PCLNR/L 12	40	32	250	22	31,0			218,00
ENH.A40T PCLNR/L 12	50	40	300	27	38,5	4	1204	263,00
ENH.A50U PCLNR/L 12	63	50	350	35	48,0			392,00
ENH.A40T PCLNR/L 16	50	40	300	27	38,5	5	1606	292,00
ENH.A50U PCLNR/L 16	63	50	350	35	48,0			407,00
ENH.A50U PCLNR/L 19	63	50	350	35	48,0	6	1906	429,00



	A	B	C	D	E	F
1	SP-IL.077.095.032	SP-LVM050.120.B020	A-W.BL.B020	-	-	-
2	SP-IL.100.116.038	SP-LVM060.136.B025	A-W.BL.B025	SP-CS.CN10	SP-SS.050.045	SP-PZ.040.060
3	SP-IL.131.127.046	SP-LVM080.170.B030	A-W.BL.B030	SP-CS.CN12	SP-SS.065.060	SP-PZ.050.065
4	SP-IL.131.127.046	SP-LVM080.210.B030	A-W.BL.B030	SP-CS.CN12	SP-SS.065.060	SP-PZ.050.065
5	SP-IL.171.155.060	SP-LVM080.240.B030	A-W.BL.B030	SP-CS.CN16	SP-SS.080.093	SP-PZ.070.070
6	SP-IL.196.211.075	SP-LVM100.270.B040	A-W.BL.B040	SP-CS.CN19	SP-SS.095.112	SP-PZ.080.070



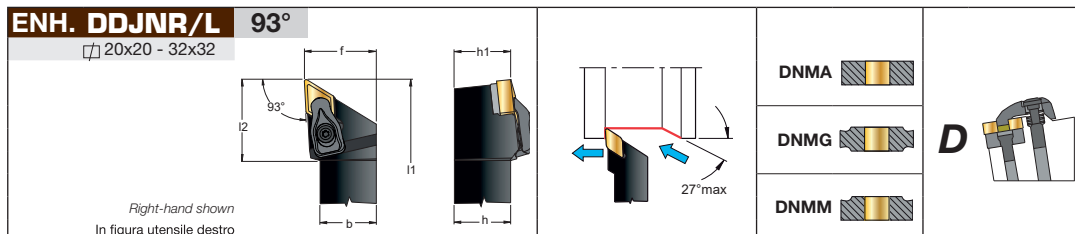
Insert / Inserto		l	d	s	d1
DNMG					
	1506	15,50	12,70	6,35	5,16

art.		€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DNMG 150604 . AKPK50 . N3015		14,70	0,4							
ENK . DNMG 150608 . AKPK50 . N3015		14,70	0,8							

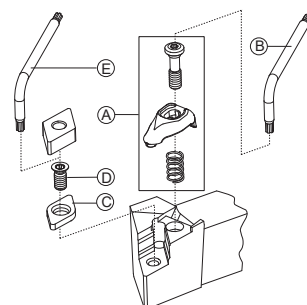
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DNMG 150608 . OKPK50 . N3025	14,70	0,8	P			P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	
ENK . DNMG 150604 . AKPK50 . N3025	14,70	0,4	M						
ENK . DNMG 150608 . AKPK50 . N3025	14,70	0,8	K						

art.		€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . DNMG 150604 . OKMP40 . N4025		14,70	0,4	P M		ap (mm) fn (mm)	M2.1 100 - 250	P1.1 130 - 250	
ENK . DNMG 150608 . OKMP40 . N4025		14,70	0,8						
ENK . DNMG 150604 . AKMP40 . N4025		14,70	0,4				M1.2 120 - 250	P2.3 60 - 180	P4.2 160 - 200
ENK . DNMG 150608 . AKMP40 . N4025		14,70	0,8						

art.		€	r	geometry		toughness	ap/f		Vt (m/min)	P M	
ENK . DNMG 150608 . OKMP70 . N4025		14,70	0,8	P M							



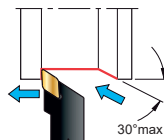
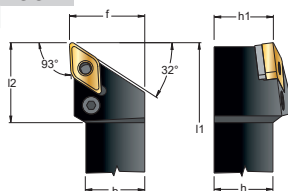
art.	h	b	l1	h1	f	l2			€
ENH. DDJNR/L 2020 K 15	20	20	125	20	25	35			99,00
ENH. DDJNR/L 2525 M 15	25	25	150	25	32	36	1	1506	100,00
ENH. DDJNR/L 3232 P 15	32	32	175	32	40	40			130,00



	Nm	A	B	C	D	E
1	3,9	SP-IB.M050.258.145.TX15	A-W.TL.TX15	SP-CS.DN15	SP-IV.M050.105.TX20	A-W.TL.TX20

ENH. PDJNR/L
93°

16x16 - 32x32



DNMA

DNMG

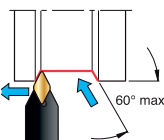
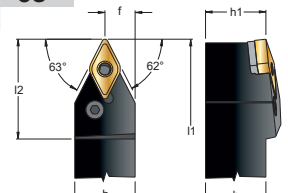
DNMM

P


	art.	h	b	l1	h1	f	l2			€
	ENH. PDJNR/L 1616 H 11	16	16	100	16	20	30	1	1104	98,00
	ENH. PDJNR/L 2020 K 11	20	20	125	20	25	30			103,00
	ENH. PDJNR/L 2525 M 11	25	25	150	25	32	30			96,00
	ENH. PDJNR/L 2020 K 15	20	20	125	20	25	35	2	1506	94,00
	ENH. PDJNR/L 2525 M 15	25	25	150	25	32	35			96,00
	ENH. PDJNR/L 3225 P 15	32	25	170	32	32	35			110,00
	ENH. PDJNR/L 3232 P 15	32	32	170	32	40	36			124,00

ENH. PDNNR/L
63°

20x20 - 32x32



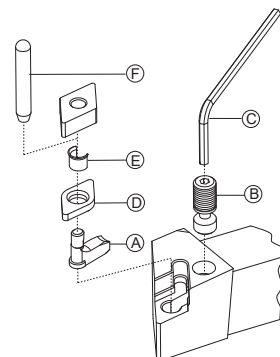
DNMA

DNMG

DNMM

P

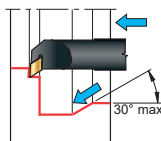
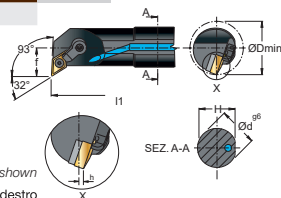

	art.	h	b	l1	h1	f	l2			€
	ENH. PDNNR/L 2020 K 15	20	20	125	20	12	35	2	1506	91,40
	ENH. PDNNR/L 2525 M 15	25	25	150	25	12	37			102,00
	ENH. PDNNR/L 3225 P 15	32	25	170	32	12	37			113,20
	ENH. PDNNR/L 3232 P 15	32	32	170	32	16,8	37			119,30



	A	B	C	D	E	F
1	SP-IL.115.116.038	SP-LVM060.170.B025	A-W.BLB025	SP-CS.DN11	SP-SS.050.045	SP-PZ.040.060
2	SP-IL.147.153.047	SP-LVM081.210.B030	A-W.BLB030	SP-CS.DN15	SP-SS.065.060	SP-PZ.050.065

ENH. A MDUNR/L 93°

Ø 25 - 40



DNMA

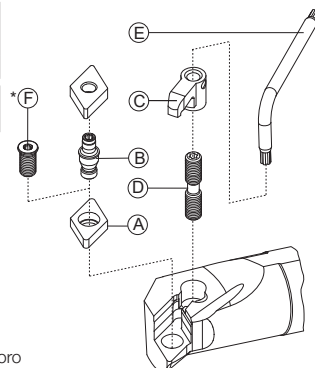
DNMG

DNMM

M



	art.	D min	d	I1	f	H	h			€
ENH. A25R	MDUNR/L 15	32	25	200	17	24,0	1,5	1	1506	229,00
ENH. A32S	MDUNR/L 15	40	32	250	22	31,0	1,5			276,00
ENH. A40T	MDUNR/L 15	50	40	300	27	38,5	0	2	1506	337,00

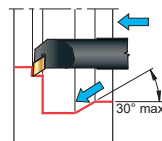
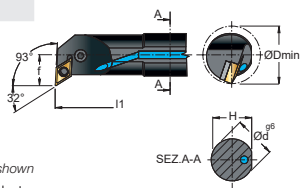


* Seat clamping screw for inserts without bore | Vite di fissaggio del sottopiacchetta per inserti senza foro

	A	B	C	D	E	F
1	SP-CS.DN16	SP-BPM060.173.TX15	SP-IB.M060-SX.213.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	SP-W.M060.127.TX15
2	SP-CS.DN16	SP-BPM060.187.TX15	SP-IB.M060-SX.213.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	SP-W.M060.127.TX15

ENH. A PDUNR/L 93°

Ø 20 - 50



DNMA

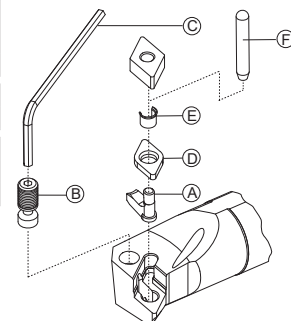
DNMG

DNMM

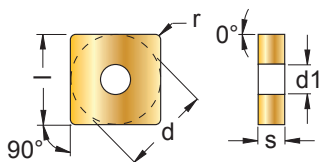
P



	art.	D min	d	I1	f	H			€
ENH. A20Q	PDUNR/L 11	27	20	180	16	18,0	1	1104	205,00
ENH. A25R	PDUNR/L 11	32	25	200	17	23,0			227,00
ENH. A32S	PDUNR/L 11	40	32	250	22	30,0	2	1104	269,00
ENH. A32S	PDUNR/L 15	40	32	250	22	31,0			240,00
ENH. A40T	PDUNR/L 15	50	40	300	27	38,5	3	1506	292,00
ENH. A50U	PDUNR/L 15	63	50	350	35	48,0			429,00



	A	B	C	D	E	F
1	SP-IL.077.095.032	SP-LV.M060.136.B025	A-W.BL.B025	-	-	-
2	SP-IL.115.116.038	SP-LV.M060.170.B025	A-W.BL.B025	SP-CS.DN11	SP-SS.050.045	SP-PZ.040.060
3	SP-IL.147.153.047	SP-LVM081.210.B030	A-W.BL.B030	SP-CS.DN15	SP-SS.065.060	SP-PZ.050.065



Insert / Inserto	l	d	s	d1
SNMG	1204	12,70	12,70	4,76
SNMM	2509	25,40	25,40	9,12

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . SNMG 120408 . OKMP40 . N4025	10,60	0,8				M2.1 100 - 250		
ENK . SNMG 120412 . OKMP40 . N4025	10,60	1,2				M1.3 40 - 160		
ENK . SNMG 120408 . AKMP40 . N4025	10,60	0,8				M1.2 120 - 250		
ENK . SNMG 120412 . AKMP40 . N4025	10,60	1,2				P2.3 60 - 180		

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . SNMG 120408 . AKPK50 . N3025	10,60	0,8				P1.1 170 - 240			
ENK . SNMG 120412 . AKPK50 . N3025	10,60	1,2				P2.3 100 - 190			
						P4.2 130 - 210			

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . SNMM 250924 . AKKP80 . N3025	43,30	2,4				P1.1 170 - 240			
						P2.3 100 - 190			
						P4.2 130 - 210			

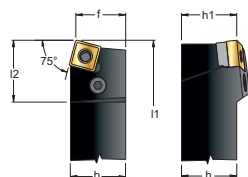
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . SNMM 250924 . AKKP90 . N3025	43,30	2,4				P1.1 170 - 240			
						P2.3 100 - 190			
						P4.2 130 - 210			

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . SNMM 250924 . AKKP80 . N3035	43,30	2,4				P1.1 130 - 200		
						P2.3 80 - 160		
						P4.2 100 - 180		

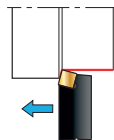
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . SNMM 250924 . AKKP90 . N3035	43,30	2,4				P1.1 130 - 200		
						P2.3 80 - 160		
						P4.2 100 - 180		

ENH. PSBNR/L 75°

□ 20x20 - 40x40



Right-hand shown
In figura utensile destro



SNMA

SNMG

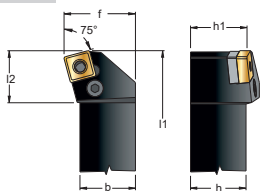
SNMM



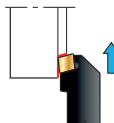
	art.	h	b	l1	h1	f	l2			€
	ENH.PSBNR/L 2020 K 12	20	20	125	20	17	28	1	1204	85,00
	ENH.PSBNR/L 2525 M 12	25	25	150	25	22	29			92,00
	ENH.PSBNR/L 2525 M 15	25	25	150	25	22	32	2	1506	103,00
	ENH.PSBNR/L 3232 P 15	32	32	170	32	27	32			128,00
	ENH.PSBNR/L 3232 P 19	32	32	170	32	27	39	3	1906	117,00
	ENH.PSBNR/L 4040 S 19	40	40	250	40	35	39			177,00

ENH. PSKNR/L 75°

□ 20x20 - 40x40



Right-hand shown
In figura utensile destro



SNMA

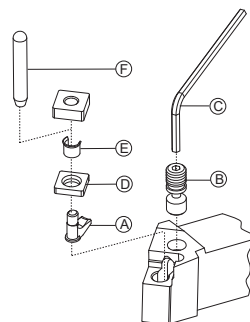
SNMG

SNMM



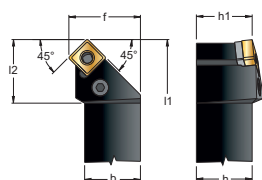
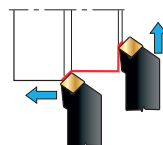
	art.	h	b	l1	h1	f	l2			€
	ENH.PSKNR/L 2020 K 12	20	20	125	20	25	26	1	1204	85,00
	ENH.PSKNR/L 2525 M 12	25	25	150	25	32	26			92,00
	ENH.PSKNR/L 2525 M 15	25	25	150	25	32	30	2	1506	103,00
	ENH.PSKNR/L 3232 P 15	32	32	170	32	40	30			128,00
	ENH.PSKNR/L 3232 P 19	32	32	170	32	40	34	3	1906	117,00
	ENH.PSKNR/L 4040 S 19	40	40	250	40	50	38			177,00

	A	B	C	D	E	F
1	SP-IL.131.127.046	SP-LVM080.210.B030	A-W.BL.B030	SP-CS.SN12	SP-SS.065.060	SP-PZ.050.065
2	SP-IL.171.155.060	SP-LVM080.240.B030	A-W.BL.B030	SP-CS.SN15	SP-SS.080.093	SP-PZ.070.070
3	SP-IL.196.211.075	SP-LVM100.270.B040	A-W.BL.B040	SP-CS.SN19	SP-SS.095.112	SP-PZ.080.070



ENH. PSSNR/L
45°

□ 20x20 - 40x40


 Right-hand shown
 In figura utensile destro


SNMA

SNMG

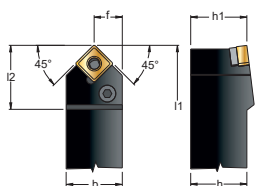
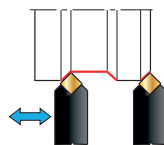
SNMM

P


	art.	h	b	l1	h1	f	l2			€
	ENH. PSSNR/L 2020 K 12	20	20	125	20	25	29	1	1204	85,00
	ENH. PSSNR/L 2525 M 12	25	25	150	25	32	29			89,00
	ENH. PSSNR/L 3225 P 12	32	25	170	32	32	29			103,00
	ENH. PSSNR/L 2525 M 15	25	25	150	25	32	36	2	1606	103,00
	ENH. PSSNR/L 3232 P 15	32	32	170	32	40	36			128,00
	ENH. PSSNR/L 3232 P 19	32	32	170	32	40	40	3	1906	117,00
	ENH. PSSNR/L 4040 S 19	40	40	250	40	50	40			177,00

ENH. PSDNN
45°

□ 20x20 - 32x32


 Right-hand shown
 In figura utensile destro


SNMA

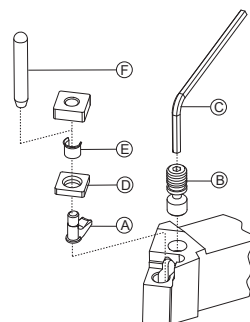
SNMG

SNMM

P


art.	h	b	l1	h1	f	l2			€
ENH. PSDNN 2020 K 12	20	20	125	20	10,3	28	1	1204	96,00
ENH. PSDNN 2525 M 12	25	25	150	25	12,8	29			103,00
ENH. PSDNN 3232 P 19	32	32	170	32	16,5	40	2	1606	117,00

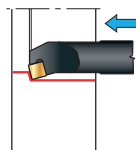
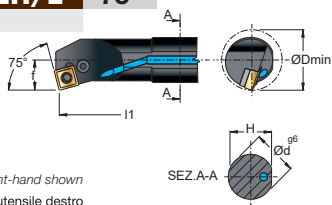
	A	B	C	D	E	F
1	SP -IL.131.127.046	SP -LV.M080.210.B030	A -W.BL.B030	SP -CS.SN12	SP -SS.065.060	SP -PZ.050.065
2	SP -IL.171.155.060	SP -LV.M080.240.B030	A -W.BL.B030	SP -CS.SN15	SP -SS.080.093	SP -PZ.070.070
3	SP -IL.196.211.075	SP -LV.M100.270.B040	A -W.BL.B040	SP -CS.SN19	SP -SS.095.112	SP -PZ.080.070



ENH. A_PSKNR/L

75°

Ø 25 - 40



SNMA

SNMG

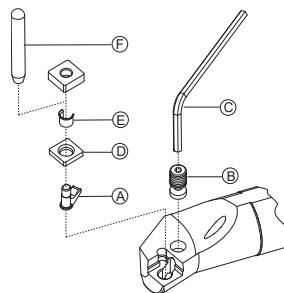
SNMM

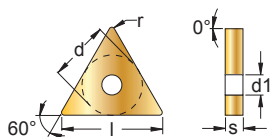
P



art.	D min	d	l1	f	H			€
ENH. A25R PSKNR/L 12	32	25	200	27	24,0	1	1204	182,00
ENH. A32S PSKNR/L 12	40	32	250	22	31,0			218,00
ENH. A40T PSKNR/L 12	50	40	300	27	38,5	2	1204	276,00

	A	B	C	D	E	F
1	SP-IL.131.127.046	SP-LVM080.170.B030	A-W.BLB030	SP-CS.SN12	SP-SS.065.060	SP-PZ.050.065
2	SP-IL.131.127.046	SP-LVM080.210.B030	A-W.BLB030	SP-CS.SN12	SP-SS.065.060	SP-PZ.050.065





Insert / Inserto	l	d	s	d1
TNMG	1604	16,50	9,52	4,76
	2204	22,00	12,70	4,76
				5,16

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TNMG 160408 . OKPM30 . N3015	9,60	0,8				P1.1 220 - 400 P2.3 200 - 320 P4.2 180 - 320	K1.1 140 - 370 K1.2 190 - 490 K2.1 180 - 520	

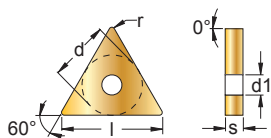
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TNMG 160404 . AKPK50 . N3015	9,60	0,4				P1.1 220 - 400 P2.3 200 - 320 P4.2 180 - 320	K1.1 140 - 370 K1.2 190 - 490 K2.1 180 - 520	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TNMG 160408 . AKPM70 . N3015	9,60	0,8				P1.1 220 - 400 P2.3 200 - 320 P4.2 180 - 320	K1.1 140 - 370 K1.2 190 - 490 K2.1 180 - 520	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . TNMG 160408 . OKPK50 . N3025	9,60	0,8				P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . TNMG 160408 . AKPM70 . N3025	9,60	0,8				P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . TNMG 160404 . OKMP40 . N4025	9,60	0,4				M2.1 100 - 250 M1.3 40 - 160 M1.2 120 - 250	P1.1 130 - 250 P2.3 60 - 180 P4.2 160 - 290		



Insert / Inserto		l	d	s	d1
TNMG	1604	16,50	9,52	4,76	3,81
TNMA	2204	22,00	12,70	4,76	5,16

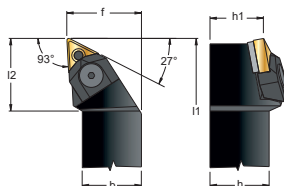
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TNMG 160404 . AKKP70 . N6015	9,60	0,4						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TNMG 160404 . AKKP70 . N6030	9,60	0,4						
ENK . TNMG 160408 . AKKP70 . N6030	9,60	0,8						
ENK . TNMG 160412 . AKKP70 . N6030	9,60	1,2						

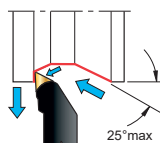
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TNMA 220408 . AKKP60 . N6025	13,20	0,8						

ENH. MTJNR/L 93°

16x16 - 32x32



Right-hand shown
In figura utensile destro



TNMA

TNMG

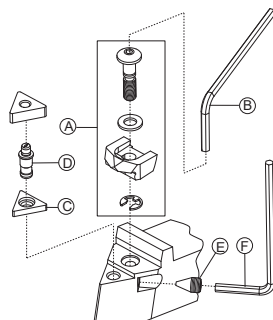
TNMM

M



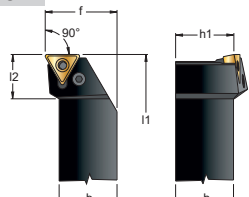
art.	h	b	l1	h1	f	l2			€
ENH. MTJNR/L 2020 K 16	16	16	100	16	20	30	1	1604	94,70
ENH. MTJNR/L 2525 M 16	20	20	125	20	25	30			96,00
ENH. MTJNR/L 3225 P 16	25	25	150	25	32	30			110,00
ENH. MTJNR/L 2525 M 22	20	20	125	20	25	35	2	2204	110,00
ENH. MTJNR/L 3225 P 22	25	25	150	25	32	35			116,00
ENH. MTJNR/L 3232 P 22	32	32	170	32	40	36			124,00

	A	B	C	D	E	F
1	SP-IB.M050-T.156.185.B025	A-W.BL.B025	SP-CS.TN15	SP-BP.050.150.100	SP-DV.M060.100.B030	A-W.BL.B030
2	SP-IB.M060-T.165.240.B030	A-W.BL.B030	SP-CS.TN21	SP-BP.060.185.135	SP-DV.M060.100.B030	-

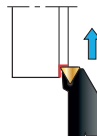


ENH. PTFNR/L 90°

20x20 - 32x32



Right-hand shown
In figura utensile destro



TNMA

TNMG

TNMM

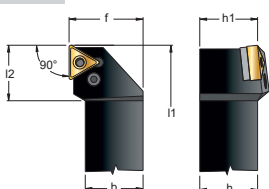
P



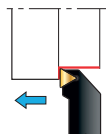
art.	h	b	l1	h1	f	l2			€
ENH. PTFNR/L 2020 K 16	20	20	125	20	25	20	1	1604	85,00
ENH. PTFNR/L 3225 P 16	25	25	150	25	32	21			92,00
ENH. PTFNR/L 2525 M 22	25	25	150	25	32	27	2	2204	98,00
ENH. PTFNR/L 3225 P 22	32	25	170	32	32	25			110,00
ENH. PTFNR/L 3232 P 22	32	32	170	32	40	25			122,00

ENH. PTGNR/L 90°

20x20 - 32x32



Right-hand shown
In figura utensile destro



TNMA

TNMG

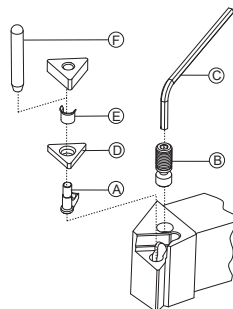
TNMM

P



art.	h	b	l1	h1	f	l2			€
ENH. PTGNR/L 2020 K 16	20	20	125	20	25	20	1	1604	85,00
ENH. PTGNR/L 3225 P 16	25	25	150	25	32	21			92,00
ENH. PTGNR/L 2525 M 22	25	25	150	25	32	27	2	2204	98,00
ENH. PTGNR/L 3225 P 22	32	25	170	32	32	29			110,00
ENH. PTGNR/L 3232 P 22	32	32	170	32	40	29			122,00

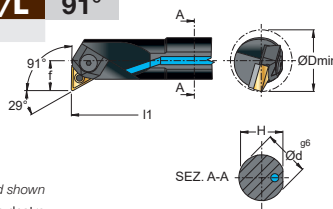
	A	B	C	D	E	F
1	SP-IL.121.097.036	SP-LV.M060.170.B025	A-W.BL.B025	SP-CS.TN16	SP-SS.050.052	SP-PZ.040.060
2	SP-IL.131.127.046	SP-LV.M080.210.B030	A-W.BL.B030	SP-CS.TN22	SP-SS.065.060	SP-PZ.050.065



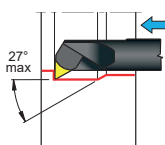
ENH. A_MTFNR/L

91°

Ø 25 - 50



Right-hand shown
In figura utensile destro



TNMA

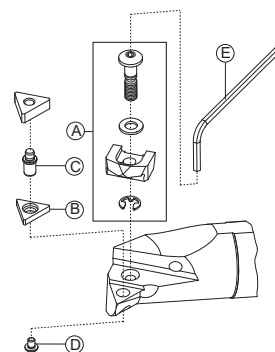
TNMG

TNMM

M



 art.	D _{min}	d	I1	f	H			€
ENH. A25R MTFNR/L 16	32	25	200	17	24,0	1	1604	196,00
ENH. A32S MTFNR/L 16	40	32	250	22	31,0	2	1604	241,00
ENH. A40T MTFNR/L 16	50	40	300	27	38,5			300,00
ENH. A50U MTFNR/L 16	63	50	350	35	48,0	3	2204	464,00
ENH. A40T MTFNR/L 22	50	40	300	27	38,5			300,00
ENH. A50U MTFNR/L 22	63	50	350	35	48,0			464,00

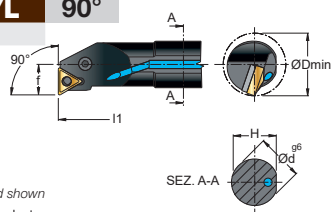


	A	B	C	D	E
1	SP -IB.M050-T.156.185.B025	-	SP -BP.050.099.049	SP -SV.M030.040.TX08	A -W.BL.B025
2	SP -IB.M050-T.156.185.B025	SP -CS.TN15	SP -BP.050.117.067	SP -SV.M030.040.TX08	A -W.BL.B025
3	SP -IB.M060-T.165.240.B030	SP -CS.TN21	SP -BP.060.143.093	SP -SV.M040.040.TX15	A -W.BL.B030

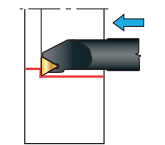
ENH. A_PTFNR/L

90°

Ø 16 - 40



Right-hand shown
In figura utensile destro



TNMA

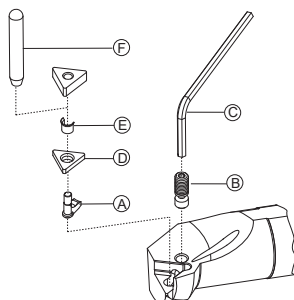
TNMG

TNMM

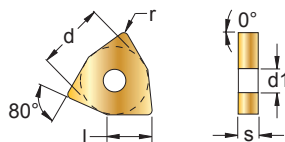
P



 art.	D _{min}	d	I1	f	H			€
ENH. A16M PTFNR/L 11	21	16	150	11	15,25	1	1103	147,00
ENH. A20Q PTFNR/L 11	25	20	180	13	19,0			176,00
ENH. A25R PTFNR/L 16	32	25	200	17	24,0	2	1604	182,00
ENH. A32S PTFNR/L 16	40	32	250	22	31,0			218,00
ENH. A40T PTFNR/L 22	50	40	300	27	38,5	3	2204	276,00



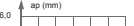
	A	B	C	D	E	F
1	SP -IL.063.078.026	SP -LV.M050.095.B020	A -W.BL.B020	-	-	-
2	SP -IL.121.097.036	SP -LV.M060.170.B025	A -W.BL.B025	SP -CS.TN16	SP -SS.050.052	SP -PZ.040.060
3	SP -IL.131.127.046	SP -LV.M080.210.B030	A -W.BL.B030	SP -CS.TN22	SP -SS.065.060	SP -PZ.050.065



Insert / Inserto	l	d	s	d1
WNMG 0804	8,70	12,70	4,76	5,16

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . WNMG 080408 . OKPK50 . N3015	11,30	0,8						
ENK . WNMG 080404 . AKPK50 . N3015	11,30	0,4						
ENK . WNMG 080408 . AKPK50 . N3015	11,30	0,8						
								
								

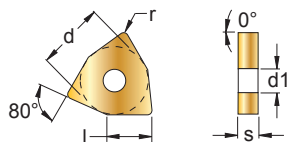
art.		€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . WNMG 080412 . AKPM70 . N3015		11,30	1,2						
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									

art.			€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . WNMG 080408 . OKPK50 . N3025			11,30	0,8	  			 P1.1 170 - 240	 M2.1 100 - 210	 K1.1 130 - 210	
ENK . WNMG 080412 . OKPK50 . N3025			11,30	1,2							
ENK . WNMG 080408 . AKPK50 . N3025			11,30	0,8	  			 P4.2 130 - 210	 M1.2 130 - 220	 K2.1 150 - 250	

art.		€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . WNMG 080408 . AKPM70 . N3025		11,30	0,8	P M K			P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	
ENK . WNMG 080412 . AKPM70 . N3025		11,30	1,2							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . WNMG 080408 . OKMP40 . N4025	11,30	0,8	                                                                                       					

art.		€	r	geometry		toughness	ap/f		Vt (m/min)	M	S
ENK . WNMG 080408 . AKMP40 . N8010		13,70	0,8								
								S1.1/S1.3 70 - 150	M2.1 100 - 250		
								S2.2 35 - 100	M1.3 60 - 150		
								S2.3 30 - 70	M1.2 90 - 240		



Insert / Inserto	l	d	s	d1
WNMG 0804	8,70	12,70	4,76	5,16

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . WNMG 080408 . AKKP70 . N6015	11,30	0,8						
ENK . WNMG 080412 . AKKP70 . N6015	11,30	1,2						

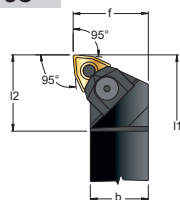
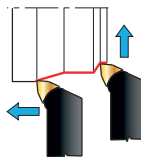
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . WNMG 080408 . AKKP60 . N6025	11,30	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . WNMG 080408 . AKKP70 . N6025	11,30	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . WNMG 080408 . AKKP70 . N6030	11,30	0,8						

ENH. MWLNR/L
95°

20x20 - 32x32


 Right-hand shown
 In figura utensile destro


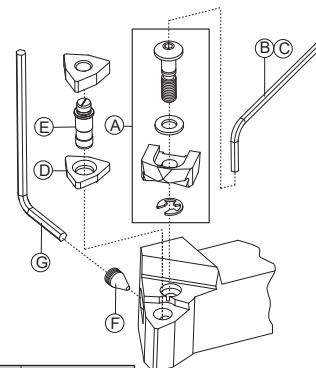
WNMA

WNMG

WNMM

M

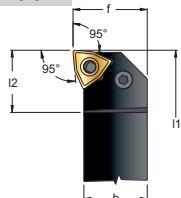
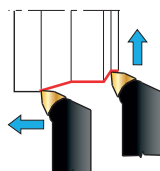
	art.	h	b	l1	h1	f	l2			€
1	ENH. MWLNR/L 2020 K 06	20	20	125	20	25	31	1	0604	94,70
1	ENH. MWLNR/L 2525 M 06	25	25	150	25	32	25			96,00
2	ENH. MWLNR/L 2020 K 08	20	20	125	20	25	28	2	0804	94,70
2	ENH. MWLNR/L 2525 M 08	25	25	150	25	32	31			96,00
2	ENH. MWLNR/L 3232 P 08	32	32	170	32	40	31			124,00



	A	B	C	D	E	F	G
1	SP-IB.M050-W.127.162.TX10	-	A-W.TF.TX10	SP-CS.WN06	SP-BP.050.117.067	SP-CV.M030.060.B025	-
2	SP-IB.M050-W.156.185.B025	A-W.BL.B025	-	SP-CS.WN08	SP-BP.060.185.135	SP-CV.M060.100.B030	A-W.BL.B030

ENH. PWLNR/L
95°

16x16 - 32x32


 Right-hand shown
 In figura utensile destro


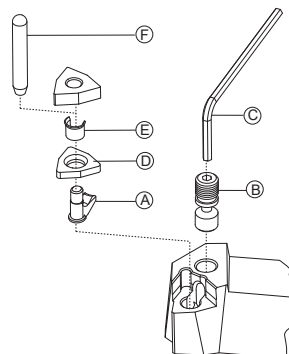
WNMA

WNMG

WNMM

P

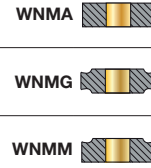
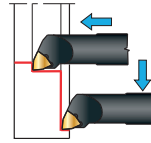
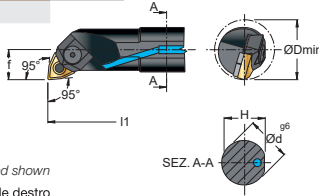
	art.	h	b	l1	h1	f	l2			€
1	ENH. PWLNR/L 1616 H 06	16	16	100	16	20	16	1	0604	94,70
1	ENH. PWLNR/L 2020 K 06	20	20	125	20	25	16			94,70
1	ENH. PWLNR/L 2525 M 06	25	25	150	25	32	16			96,00
2	ENH. PWLNR/L 2020 K 08	20	20	125	20	25	20	2	0804	94,70
2	ENH. PWLNR/L 2525 M 08	25	25	150	25	32	21			96,00
2	ENH. PWLNR/L 3225 P 08	32	25	170	32	32	23			110,00
2	ENH. PWLNR/L 3232 P 08	32	32	170	32	40	23			117,00



	A	B	C	D	E	F
1	SP-IL.121.097.036	SP-LV.M060.170.B025	A-W.BL.B025	SP-CS.WN06	SP-SS.050.052	SP-PZ.040.060
2	SP-IL.131.127.046	SP-LV.M080.210.B030	A-W.BL.B030	SP-CS.WN08	SP-SS.065.060	SP-PZ.050.065

ENH. A MWLNRL/L 95°

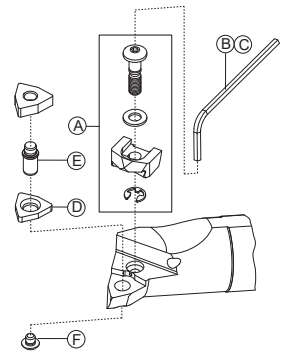
Ø 20 - 50



art.	D min	d	l1	f	H			€
ENH. A20Q MWLNRL/L 06	25	20	180	13	19,0	1	0604	196,00
ENH. A25R MWLNRL/L 06	32	25	200	17	24,0	2	0604	211,00
ENH. A32S MWLNRL/L 06	40	32	250	22	31,0			255,00
ENH. A25R MWLNRL/L 08	32	25	200	17	24,0	3	0804	211,00
ENH. A32S MWLNRL/L 08	40	32	250	22	31,0	4	0804	255,00
ENH. A40T MWLNRL/L 08	50	40	300	27	38,5			316,00
*ENH. S50U MWLNRL/L 08	63	50	350	35	47,0	5	0804	478,00

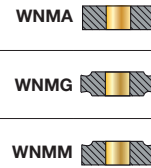
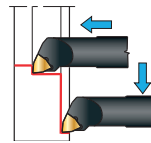
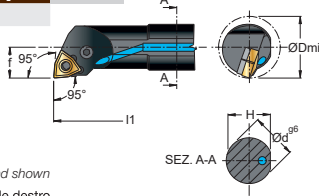
* without internal coolant | senza adduzione interna

	A	B	C	D	E	F
1	SP -IB.M050-W.127.162.TX10	A-W.TF.TX10	-	-	SP -BP.040.100.059	-
2	SP -IB.M050-W.127.162.TX10	A-W.TF.TX10	-	SP -CS.WN06	SP -BP.050.117.067	-
3	SP -IB.M050-W.156.185.B025	-	A-W.BL.B025	SP -CS.WN08	SP -BP.060.115.056	SP -SV.M040.040.TX15
4	SP -IB.M050-W.156.185.B025	-	A-W.BL.B025	SP -CS.WN08	SP -BP.060.143.093	SP -SV.M040.040.TX15
5	SP -IB.M050-W.156.185.B025	-	A-W.BL.B025	SP -CS.WN08	SP -BP.060.143.093	SP -SV.M040.040.TX15



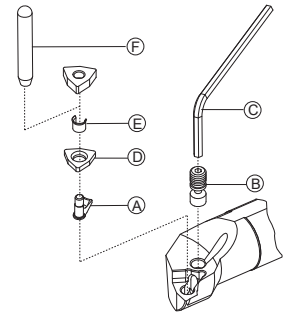
ENH. A PWLNRL/L 95°

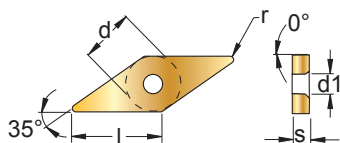
Ø 16 - 40



art.	D min	d	l1	f	H			€
ENH. A16M PWLNRL/L 06	21	16	150	11	15,25	1	1103	176,00
ENH. A20Q PWLNRL/L 06	25	20	180	13	19,0			182,00
ENH. A25R PWLNRL/L 06	32	25	200	17	24,0	2	1604	191,00
ENH. A32S PWLNRL/L 06	40	32	250	22	31,0			240,00
ENH. A25R PWLNRL/L 08	32	25	200	17	24,0	3	2204	191,00
ENH. A32S PWLNRL/L 08	40	32	250	22	31,0	4	1604	234,00
ENH. A40T PWLNRL/L 08	50	40	300	27	38,5			285,00

	A	B	C	D	E	F
1	SP -IL.095.100.032	SP -LV.M050.120.B020	A-W.BL.B020	-	-	-
2	SP -IL.121.097.036	SP -LV.M060.170.B025	A-W.BL.B025	SP -CS.WN06	SP -SS.050.052	SP -PZ.040.060
3	SP -IL.131.127.046	SP -LV.M080.170.B030	A-W.BL.B030	SP -CS.WN08	SP -SS.065.060	SP -PZ.050.065
4	SP -IL.131.127.046	SP -LV.M080.210.B030	A-W.BL.B030	SP -CS.WN08	SP -SS.065.060	SP -PZ.050.065



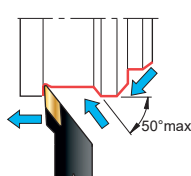
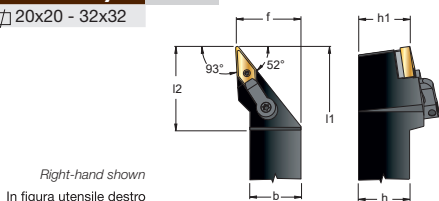


Insert / Inserto	l	d	s	d1
VNMG 1604	16,60	9,52	4,76	3,81

art.		€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . VNMG 160404 . OKMP40 . N4025		9,60	0,4	                                                                                                                                                                                                                                         					

ENH. MVJNR/L 93°

□ 20x20 - 32x32



VNMG

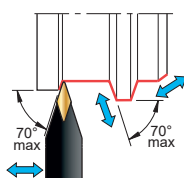
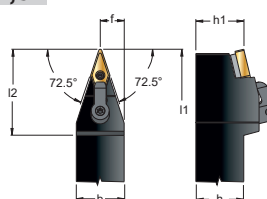
M



	art.	h	b	l1	h1	f	l2			€
ENH. MVJNR/L	2020 16	20	20	125	20	25	32			106,00
ENH. MVJNR/L	2525 16	25	25	150	25	32	32	1	1604	115,00
ENH. MVJNR/L	3225 16	32	25	170	32	32	32			131,00

ENH. MVVNN 72,5°

□ 20x20 - 32x32



VNMG

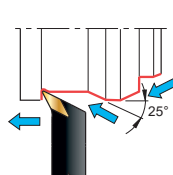
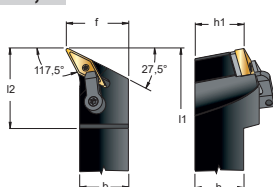
M



	art.	h	b	l1	h1	f	l2			€
ENH. MVVNN	2020 16	20	20	125	20	10	45			106,00
ENH. MVVNN	2525 16	25	25	150	25	12,5	45	1	1604	115,00
ENH. MVVNN	3225 16	32	25	170	32	12,5	45			131,00

ENH. MVPCR/L 117,5°

□ 20x20 - 32x32

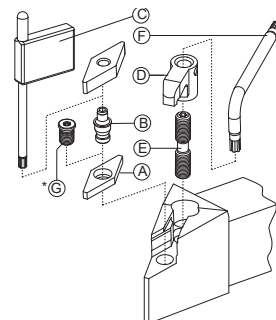


VNMG

M



	art.	h	b	l1	h1	f	l2			€
ENH. MVPCR/L	2020 16	20	20	125	20	25	41			106,00
ENH. MVPCR/L	2525 16	25	25	150	25	32	41	1	1604	115,00
ENH. MVPCR/L	3225 16	32	25	170	32	32	32			131,00

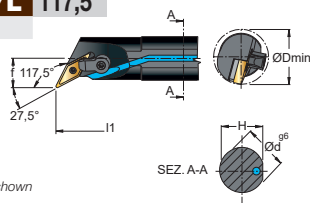


* For inserts without hole only | Solo per inserti senza foro

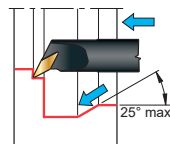
	A	B	C	D	E	F	G
1	SP-CS.VN16	SP-BPM050.131.TX08	A-W.TF.TX08	SP-IB.M060-SX.213.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	SP-V.M050.080.TX09

ENH. A MVPNR/L 117,5°

Ø 25 - 40



Right-hand shown
In figura utensile destro



VNMG

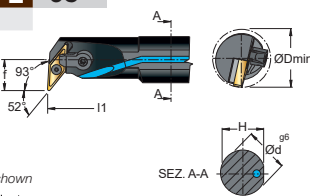
M



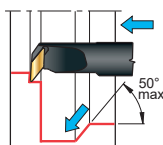
	art.	D min	d	L1	f	H			€
ENH. A25R	MVPCR/L 16	32	25	200	17	24,0	1	1604	229,00
ENH. A32S	MVPCR/L 16	40	32	250	22	31,0	1	1604	276,00
ENH. A40T	MVPCR/L 16	50	40	300	27	38,5	2	1604	337,00

ENH. A MVUNR/L 95°

Ø 25 - 40



Right-hand shown
In figura utensile destro



VNMG

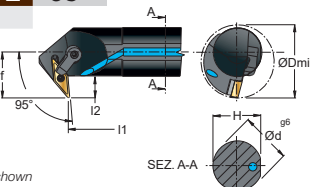
M



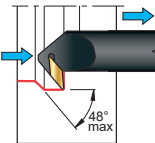
	art.	D min	d	L1	f	H			€
ENH. A25R	MVUNR/L 16	32	25	200	17	24,0	1	1604	229,00
ENH. A32S	MVUNR/L 16	40	32	250	22	31,0	1	1604	276,00
ENH. A40T	MVUNR/L 16	50	40	300	27	38,5	2	1604	337,00

ENH. A MVZNR/L 95°

Ø 32 - 40



Right-hand shown
In figura utensile destro

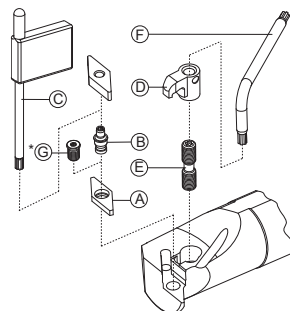


VNMG

M



	art.	D min	d	L1	f	H	h		€
ENH. A32S	MVZNR/L 16	48	32	250	30	31,0	14	1	276,00
ENH. A40T	MVZNR/L 16	57	40	300	35	38,5	15	2	337,00



* For inserts without hole | Solo per inserti senza foro

	A	B	C	D	E	F	G
1	SP-CS.VN16	SP-BPM050.131.TX08	A-W.TF.TX08	SP-IB.M060-SX.213.095	SP-SB.M060-SX.M060.250.TX15	A-W.TL.TX15	SP-WM050.080.TX09
2	SP-CS.VN16	SP-BPM050.131.TX08	A-W.TF.TX08	SP-IB.M060-SX.213.095	SP-SB.M060-SX.M060.300.TX15	A-W.TL.TX15	SP-WM050.080.TX09

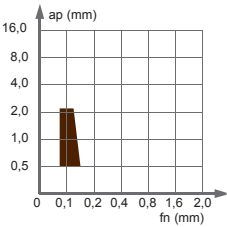
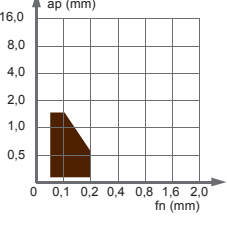
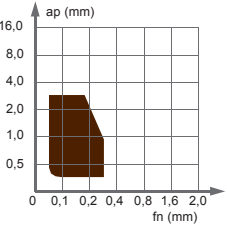
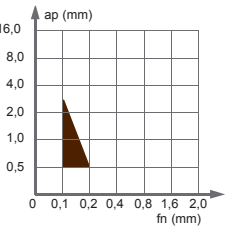
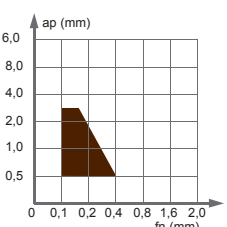
EVO[®]



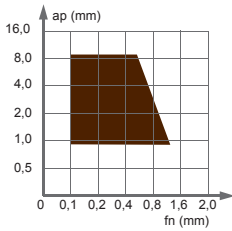
...THE WAY TO THE FUTURE!



Positive inserts | Inserti positivi

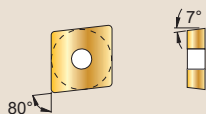
EVO	Materiale	Machining Lavorazione	Strenght Robustezza	ap/fn	Applicazione
PM35 	P M K			 ap (mm) fn (mm)	Geometry for finishing mainly on steel and stainless steel and secondarily on cast iron. Geometria adatta alla finitura principalmente su acciaio e acciaio inossidabile e secondariamente su ghisa.
MP35 	P M K			 ap (mm) fn (mm)	Geometry for light machining mainly on stainless steel and secondarily on steel and cast iron. Geometria adatta all'asportazione leggera principalmente su acciaio inossidabile e secondariamente su acciaio e ghisa.
PM45 	P M K			 ap (mm) fn (mm)	Geometry mainly for medium machining and secondarily for finishing on steel. Geometria adatta principalmente all'asportazione media e secondariamente alla finitura di acciaio.
PM55 	P M K			 ap (mm) fn (mm)	Geometry mainly for medium machining and secondarily for finishing on steel. It can also be used for medium machining and finishing on stainless steel and cast iron. Geometria adatta principalmente all'asportazione media e secondariamente alla finitura di acciaio. Può anche essere impiegata per la lavorazione media e la finitura di acciaio inossidabile e ghisa.
PM65 	P M K			 ap (mm) fn (mm)	Geometry mainly for medium machining on steel, stainless steel and cast iron. It can also be used for finishing. Geometria adatta principalmente all'asportazione media su acciaio, acciaio inossidabile e ghisa. Può anche essere impiegata per finitura.

Positive inserts | Inserti positivi

EVO	Material Materiale	Machining Lavorazione	Strenght Robustezza	ap/f	Application Applicazione
PM95 	P M K	     			Geometry mainly for medium-heavy machining on steel. It can also be used for medium-heavy machining on stainless steel and cast iron. Good stability of the cutting edge. Geometria adatta principalmente all'asportazione medio-pesante su acciaio. Può anche essere impiegata per asportazione medio-pesante su acciaio inossidabile e ghisa. Buona stabilità del tagliente.



CC__



CCGT
CCMT

60

ENH. SCLCR/L 95° 8x8 - 25x25 Right-hand shown In figura utensile destro		CC_T CC_W	S	62
ENH. A SCLCR/L 95° Ø 8 - 16 Right-hand shown In figura utensile destro		CC_T CC_W	S	62
ENH. A SCLCR/L 95° Ø 8 - 40 Right-hand shown In figura utensile destro		CC_T CC_W	S	63
ENH. E SCLCR/L 95° Ø 8 - 25 CARBIDE METALLO DURO Right-hand shown In figura utensile destro		CC_T CC_W	S	63

DC__

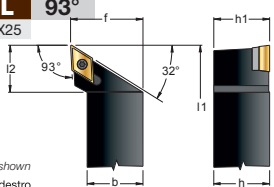
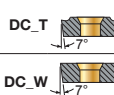
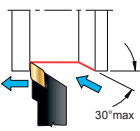

DCGT
DCMT

64

ENH. SDJCR/L

93°

08X08 - 25X25

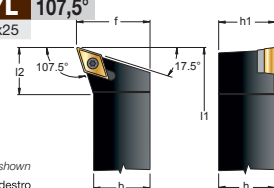
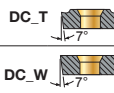
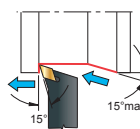

Right-hand shown
In figura utensile destro


66

ENH. SDHCR/L

107,5°

10x10 - 25x25

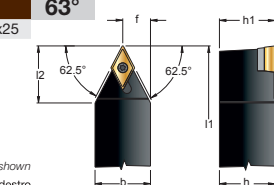
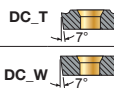
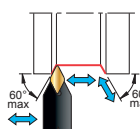

Right-hand shown
In figura utensile destro


66

ENH. SDNCN

63°

08x08 - 25x25

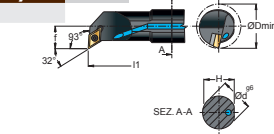
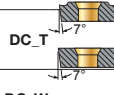
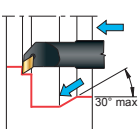

Right-hand shown
In figura utensile destro


66

ENH. A SDUCR/L

93°

Ø 10 - 40

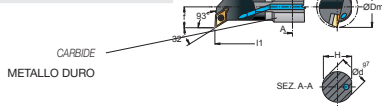
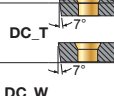
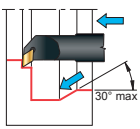

Right-hand shown
In figura utensile destro


67

ENH. E SDUCR/L

93°

Ø 10 - 20

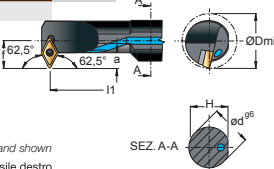
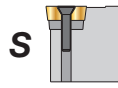
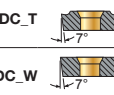
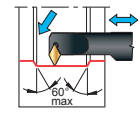

Right-hand shown
In figura utensile destro


67

ENH. A SDNCR/L

63°

Ø 16 - 25

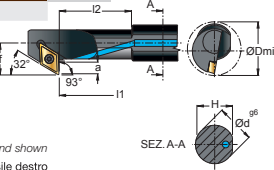
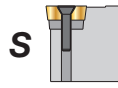
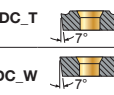
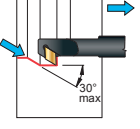

Right-hand shown
In figura utensile destro


68

ENH. A SDXCR/L

93°

Ø 12 - 25


Right-hand shown
In figura utensile destro


68

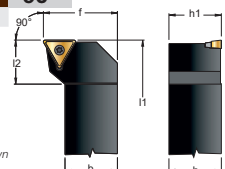
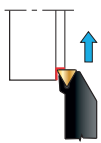
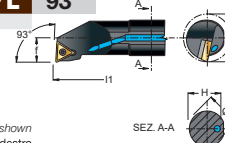
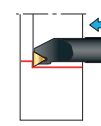
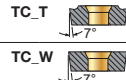
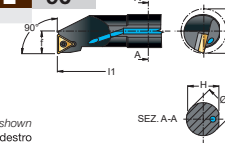
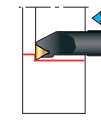
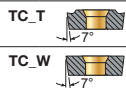
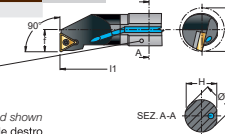
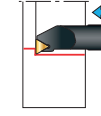
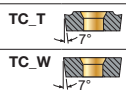
ENH. A SDQCR/L 107,5° Ø 10 - 32 Right-hand shown In figura utensile destro		DC_T DC_W	S	69
ENH. E SDQCR/L 93° Ø 10 - 20 CARBIDE METALLO DURO Right-hand shown In figura utensile destro		DC_T DC_W	S	69

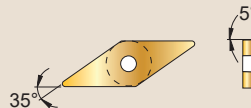
SC_	SCMT 70
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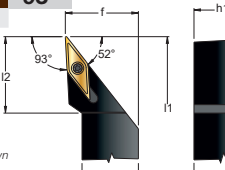
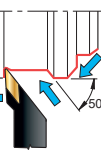
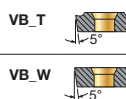
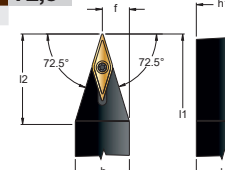
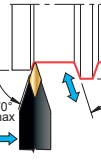
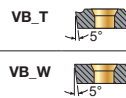
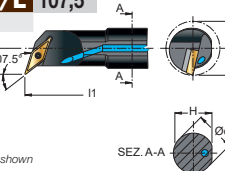
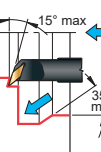
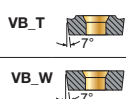
ENH. SSSCR/L 45° 12x12 - 25x25 Right-hand shown In figura utensile destro		SC_T SC_W	S	71
ENH. A SSKCR/L 75° Ø 16 - 25 Right-hand shown In figura utensile destro		SC_T SC_W	S	71

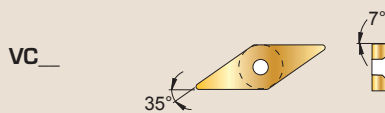
TC_	TCMT 72
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ENH. STGCR/L 90° Ø8X08 - 25X25 Right-hand shown In figura utensile destro		TC_T TC_W	S	73
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ENH. STFCR/L 90° ▮ 08x08 - 25X25  Right-hand shown In figura utensile destro				73
ENH. A STUCR/L 93° Ø 12 - 32  Right-hand shown In figura utensile destro				74
ENH. A STFCR/L 90° Ø 10 - 40  Right-hand shown In figura utensile destro				74
ENH. E STFCR/L 90° Ø 10 - 20 CARBIDE METALLO DURO  Right-hand shown In figura utensile destro				75

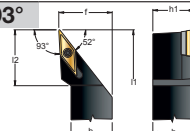
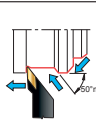
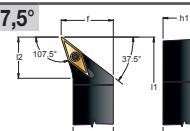
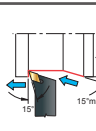
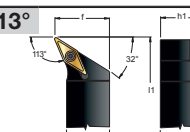
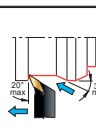
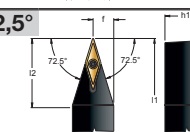
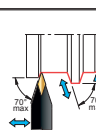
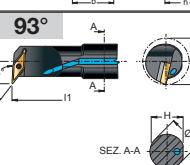
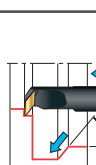
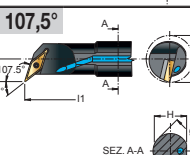
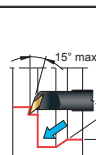
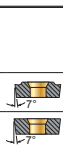
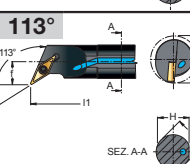
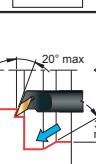
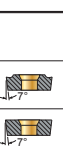
VBMT 	VBMT 	76
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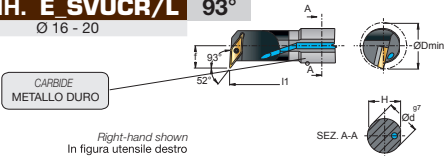
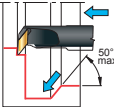
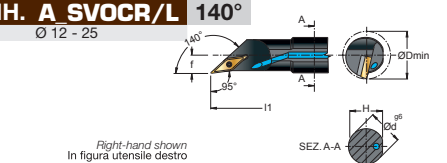
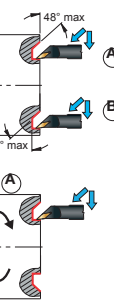
ENH. SVJBR/L 93° ▮ 16x16 - 32x25  Right-hand shown In figura utensile destro				77
ENH. SVVBN 72,5° ▮ 20x20 - 32x25  Right-hand shown In figura utensile destro				77
ENH. A SVQBR/L 107,5° Ø 25 - 40  Right-hand shown In figura utensile destro				77

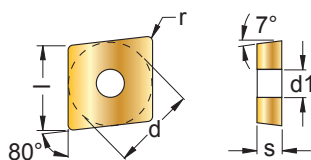


VCMT

78

ENH. SVJCR/L $\square$ 12x12 - 32x25 93°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				79
ENH. SVHCR/L $\square$ 16x16 - 32x25 107,5°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				79
ENH. SVXCR/L $\square$ 20x20 - 25x25 113°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				79
ENH. SVVCN $\square$ 16x16 - 32x25 72,5°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				79
ENH. A SVUCR/L $\varnothing$ 16 - 40 93°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				80
ENH. A SVQCR/L $\varnothing$ 16 - 40 107,5°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				80
ENH. A SVXCR/L $\varnothing$ 16 - 25 113°  <i>Right-hand shown</i> <i>In figura utensile destro</i>				80

ENH. E SVUCR/L 93° Ø 16 - 20  CARBIDE METALLO DURO Right-hand shown In figura utensile destro		VC_T VC_W	S 	81
ENH. A SVOCR/L 140° Ø 12 - 25  Right-hand shown In figura utensile destro		VC_T VC_W	S 	82



Insert / Inserto		l	d	s	d1
CCMT	0602	6,50	6,35	2,38	2,80
	09T3	9,70	9,52	3,97	4,40
	1204	12,90	12,70	4,76	5,16

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CCMT 060204 . AKMP35 . N3015	7,40	0,4							
ENK . CCMT 09T304 . AKMP35 . N3015	8,70	0,4							
ENK . CCMT 09T308 . AKMP35 . N3015	8,70	0,8							

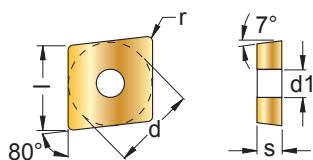
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CCMT 09T304 . OKPM45 . N3025	8,70	0,4							
ENK . CCMT 09T308 . OKPM45 . N3025	8,70	0,8							
ENK . CCMT 120408 . OKPM45 . N3125	11,80	0,8							
ENK . CCMT 09T304 . AKPM45 . N3025	8,70	0,4							
ENK . CCMT 09T308 . AKPM45 . N3025	8,70	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CCMT 120412 . OKPM65 . N3025	11,80	1,2							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CCMT 09T304 . AKMP35 . N4025	8,70	0,4							
ENK . CCMT 09T308 . AKMP35 . N4025	8,70	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CCMT 060202 . OKPM35 . N4025	7,40	0,2							
ENK . CCMT 09T308 . OKPM35 . N4025	8,70	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . CCMT 060204 . OKPM45 . N4025	7,40	0,6							
ENK . CCMT 09T304 . OKPM45 . N4025	8,70	0,4							
ENK . CCMT 09T308 . OKPM45 . N4025	8,70	0,8							
ENK . CCMT 120408 . OKPM45 . N4025	11,80	0,8							
ENK . CCMT 060204 . AKPM45 . N4025	7,40	0,4							
ENK . CCMT 09T304 . AKPM45 . N4025	8,70	0,4							
ENK . CCMT 09T308 . AKPM45 . N4025	8,70	0,8							
ENK . CCMT 120408 . AKPM45 . N4025	11,20	0,8							



Insert / Inserto	l	d	s	d1
CCMT	0602	6,50	6,35	2,38
	09T3	9,70	9,52	3,97

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S
ENK . CCMT 09T304 . AKPM45 . N8010	9,30	0,4						
ENK . CCMT 09T308 . AKPM45 . N8010	9,30	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CCMT 09T304 . AKPM55 . N6015	8,70	0,4						
ENK . CCMT 09T308 . AKPM55 . N6015	8,70	0,8						

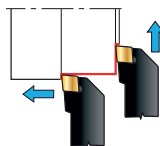
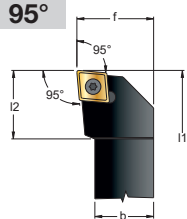
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CCMT 09T304 . AKPM65 . N6015	8,70	0,4						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . CCMT 09T308 . AKPM55 . N6030	8,70	0,8						

ENH. SCLCR/L

95°

8x8 - 25x25



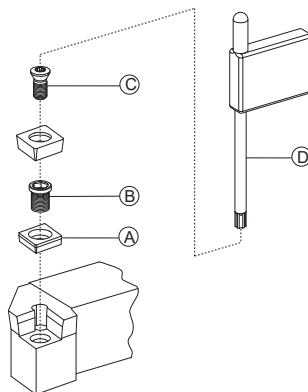
CC_T

CC_W

S

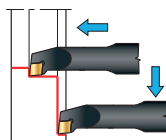
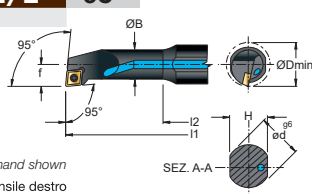

art.	h	b	l1	h1	f	l2			€
ENH. SCLCR/L 0808 D 06	8	8	60	8	10	10	1	0602	76,00
ENH. SCLCR/L 1010 E 06	10	10	70	10	12	10			76,00
ENH. SCLCR/L 1212 F 09	12	12	80	12	16	15	2	09T3	76,00
ENH. SCLCR/L 1616 H 09	16	16	100	16	20	15			83,00
ENH. SCLCR/L 2020 K 09	20	20	125	20	25	17	3	09T3	86,00
ENH. SCLCR/L 2525 M 09	25	25	150	25	32	18			93,00
ENH. SCLCR/L 1616 H 12	16	16	100	16	20	20			83,00
ENH. SCLCR/L 2020 K 12	20	20	125	20	25	20	4	1204	86,00
ENH. SCLCR/L 2525 M 12	25	25	150	25	32	20			93,00

	Nm	A	B	C	E
1	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TFIP08
2	3,8÷5,0	-	-	SP -IV.M040.085.IP15	A -W.TFIP15
3	3,0÷3,5	SP -CS.CC09	SP -BH.M035.070.B035	SP -IV.M035.110.IP15	A -W.TFIP15
4	4,0÷5,0	SP -CS.CC12	SP -BH.M060.M045.090.B045	SP -IV.M045.130.IP20	A -W.TFIP20


ENH. A_SCLCR/L

95°

Ø 8 - 40



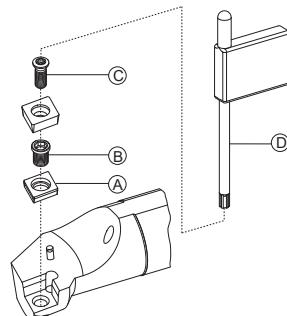
CC_T

CC_W

S


art.	D min	d	l1	f	H			€
ENH. A08F SCLCR/L 06	10	8	80	5	7,6	1	0602	107,00
ENH. A10H SCLCR/L 06	12	10	100	7	9,5			107,00
ENH. A12K SCLCR/L 06	16	12	125	9	11,5	2	0602	107,00
ENH. A16M SCLCR/L 09	20	16	150	11	15,25	3	09T3	118,00
ENH. A20Q SCLCR/L 09	25	20	180	13	19,0			125,00
ENH. A25R SCLCR/L 09	32	25	200	17	24,0	4	09T3	147,00
ENH. A25R SCLCR/L 12	32	25	200	17	24,0	5	1204	147,00
ENH. A32S SCLCR/L 12	40	32	250	22	31,0			187,00
ENH. A40T SCLCR/L 12	50	40	300	27	38,5	6	1204	245,00

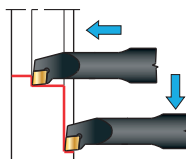
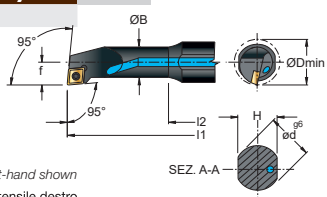
	Nm	A	B	C	D
1	1,0÷1,2	-	-	SP -IV.M025.055.IP07	A -W.TFIP07
2	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TFIP08
3	3,8÷5,0	-	-	SP -IV.M040.085.IP15	A -W.TFIP15
4	3,8÷5,0	-	-	SP -IV.M040.110.IP15	A -W.TFIP15
5	4,0÷5,0	-	-	SP -IV.M045.100.TX20	A -W.TF.TX20
6	4,0÷5,0	SP -CS.CC12	SP -BH.M060.M045.090.B045	SP -IV.M045.130.IP20	A -W.TFIP20



ENH. A_SCLCR/L

95°

Ø 8 - 16



CC_T
7°

CC_W
7°

S

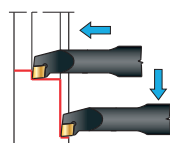
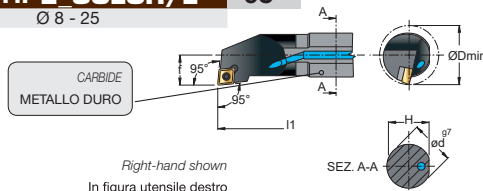


	art.	D min	d	d3	L1	f	H	L2			€
ENH. A0608H	SCLCR/L 06	8,5	8	6	100	4,0	7	20	1	0602	89,00
ENH. A0810J	SCLCR/L 06	10,5	10	8	110	6,0	9	26	1	0602	89,00
ENH. A1012K	SCLCR/L 06	12,5	12	10	125	7,0	11	32	1	0602	89,00
ENH. A1216M	SCLCR/L 06	15,5	16	12	150	9,0	15	40	1	0602	96,00

ENH. E_SCLCR/L

95°

Ø 8 - 25



CC_T
7°

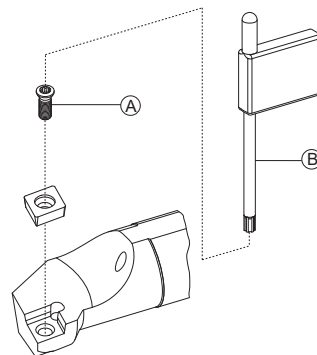
CC_W
7°

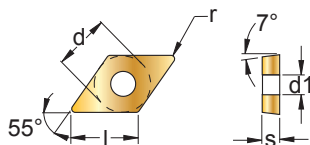
S



	art.	D min	d	L1	f	H			€
ENH . E08K	SCLCR/L 06	11	8	125	5	7,6	1	0602	184,00
ENH . E10K	SCLCR/L 06	13	10	125	7	9,5	2	0602	216,00
ENH . E12M	SCLCR/L 06	16	12	150	9	11,5	2	0602	240,00
ENH . E16R	SCLCR/L 09	20	16	200	11	15,25	3	09T3	392,00
ENH . E20S	SCLCR/L 09	25	20	250	13	19,0	3	09T3	617,00
ENH . E25T	SCLCR/L 09	32	25	300	17	24,0	4	09T3	971,00

	Nm	A	B
1	1,0÷1,2	SP -IV.M025.055.IP07	A-W.TFIP07
2	1,1÷1,3	SP -IV.M025.063.IP08	A-W.TFIP08
3	3,8÷5,0	SP -IV.M040.085.IP15	A-W.TFIP15
4	3,8÷5,0	SP -IV.M040.110.IP15	A-W.TFIP15





Insert / Inserto	l	d	s	d1
DCMT	0702	7,80	6,35	2,38
	11T3	11,60	9,52	4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DCMT 11T302 . OKMP35 . N3015	9,60	0,2							
ENK . DCMT 11T302 . AKMP35 . N3015	9,60	0,2							
ENK . DCMT 11T304 . AKMP35 . N3015	9,60	0,4							
ENK . DCMT 11T308 . AKMP35 . N3015	9,60	0,8							

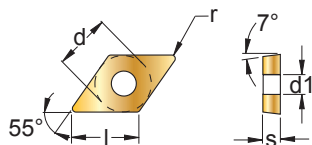
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DCMT 11T302 . OKPM45 . N3015	9,60	0,2							
ENK . DCMT 11T304 . OKPM45 . N3015	9,60	0,4							
ENK . DCMT 11T304 . AKPM45 . N3015	9,60	0,4							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DCMT 11T304 . OKPM45 . N3025	9,60	0,4							
ENK . DCMT 11T308 . OKPM45 . N3025	9,60	0,8							
ENK . DCMT 11T304 . AKPM45 . N3025	9,60	0,4							
ENK . DCMT 11T308 . AKPM45 . N3025	9,60	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DCMT 070204 . AKMP35 . N4025	7,20	0,2							
ENK . DCMT 11T302 . OKMP35 . N4025	9,60	0,4							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DCMT 11T304 . OKPM45 . N4025	9,60	0,4							
ENK . DCMT 11T308 . OKPM45 . N4025	9,60	0,8							
ENK . DCMT 11T302 . AKPM45 . N4025	9,60	0,2							
ENK . DCMT 11T304 . AKPM45 . N4025	9,60	0,4							
ENK . DCMT 11T308 . AKPM45 . N4025	9,60	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . DCMT 11T302 . AKPM65 . N4025	9,60	0,2							
ENK . DCMT 11T304 . AKPM65 . N4025	9,60	0,4							
ENK . DCMT 11T308 . AKPM65 . N4025	9,60	0,8							



Insert / Inserto		l	d	s	d1
DCMT					
	11T3	11,60	9,52	3,97	4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S
ENK . DCMT 11T304 . AKPM45 . N8010	10,70	0,4						
ENK . DCMT 11T308 . AKPM45 . N8010	10,70	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . DCMT 11T308 . AKPM65 . N6015	9,60	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . DCMT 11T308 . AKPM65 . N6020	9,60	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . DCMT 11T304 . AKPM55 . N6025	9,60	0,4						
ENK . DCMT 11T308 . AKPM55 . N6025	9,60	0,8						

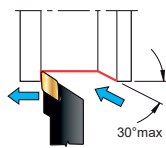
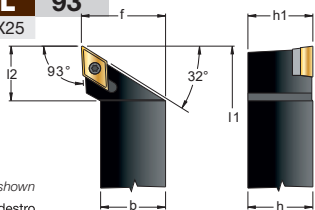
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . DCMT 11T304 . AKPM55 . N6030	9,60	0,4						
ENK . DCMT 11T308 . AKPM55 . N6030	9,60	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	S	K	N
ENK . DCGT 11T302 . LON515 . NU6015	11,60	0,2							
ENK . DCGT 11T304 . LON515 . NU6015	11,60	0,4							
ENK . DCGT 11T308 . LON515 . NU6015	11,60	0,8							

ENH. SDJCR/L

93°

08X08 - 25X25



DC_T

DC_W

S

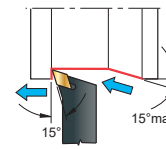
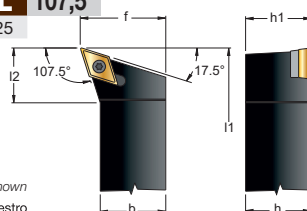


art.	h	b	l1	h1	f	l2			€
ENH. SDJCR/L 0808 D 07	8	8	70	8	10	14	0702	1	76,00
ENH. SDJCR/L 1010 E 07	10	10	70	10	12	14			76,00
ENH. SDJCR/L 1212 F 07	12	12	80	12	16	14			76,00
ENH. SDJCR/L 1212 F 11	12	12	80	12	16	21	11T3	2	76,00
ENH. SDJCR/L 1616 H 11	16	16	100	16	20	22	11T3	3	83,00
ENH. SDJCR/L 2020 K 11	20	20	125	20	25	23			86,00
ENH. SDJCR/L 2525 M 11	25	25	150	25	32	27			93,00

ENH. SDHCR/L

107,5°

10x10 - 25x25



DC_T

DC_W

S

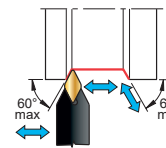
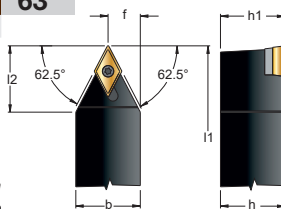


art.	h	b	l1	h1	f	l2			€
ENH. SDHCR/L 1010 E 07	10	10	70	10	12	10	1	0702	76,00
ENH. SDHCR/L 1212 F 07	12	12	80	12	16	12			76,00
ENH. SDHCR/L 1616 H 11	16	16	100	16	20	19	3	11T3	83,00
ENH. SDHCR/L 2020 K 11	20	20	125	20	25	18			86,00
ENH. SDHCR/L 2525 M 11	25	25	150	25	32	20			93,00

ENH. SDNCN

63°

08x08 - 25x25



DC_T

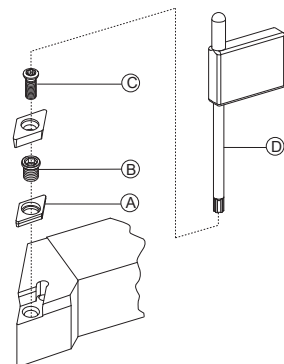
DC_W

S



art.	h	b	l1	h1	f	l2			€
ENH. SDNCN 0808 D 07	8	8	70	8	10	14	1	0702	76,00
ENH. SDNCN 1010 E 07	10	10	70	10	12	14			76,00
ENH. SDNCN 1212 F 07	12	12	80	12	16	14			76,00
ENH. SDNCN 1212 F 11	12	12	80	12	16	21	2	11T3	76,00
ENH. SDNCN 1616 H 11	16	16	100	16	20	22	3	11T3	83,00
ENH. SDNCN 2020 K 11	20	20	125	20	25	23			86,00
ENH. SDNCN 2525 M 11	25	25	150	25	32	27			93,00

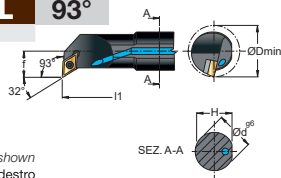
	Nm	A	B	C	E
1	1,1÷1,3	-	-	SP-IV.M025.063.IP08	A-W.FEIP08
2	3,8÷5,0	-	-	SP-IV.M040.085.IP15	A-W.FEIP15
3	3,0÷3,5	SP-CS.DC11	SP-BH.M050.M035.070.B035	SP-IV.M035.110.JP15	A-W.FEIP15



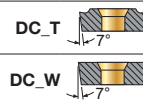
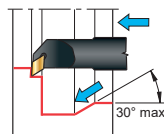
ENH. A SDUCR/L

93°

Ø 10 - 40

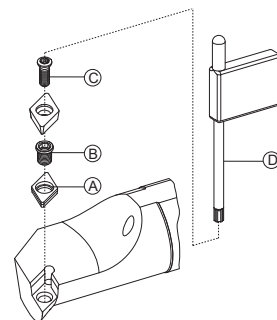


Right-hand shown
In figura utensile destro



art.	D min	d	l1	f	H			€
ENH. A10H SDUCR/L 07	13	10	100	8	9,5	1	0702	107,10
ENH. A12K SDUCR/L 07	16	12	125	9	11,5			107,10
ENH. A16M SDUCR/L 07	20	16	150	11	15,25			118,00
ENH. A20Q SDUCR/L 07	25	20	180	13	19,0			125,00
ENH. A20Q SDUCR/L 11	25	20	180	13	19,0	2	11T3	125,00
ENH. A25R SDUCR/L 11	32	25	200	17	24,0	3	11T3	147,00
ENH. A32S SDUCR/L 11	40	32	250	22	31,0	4	11T3	187,00
ENH. A40T SDUCR/L 11	49	40	300	27	38,5			245,00

	Nm	A	B	C	D
1	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TFIP08
2	3,8÷5,0	-	-	SP -IV.M040.085.IP15	A -W.TFIP15
3	3,8÷5,0	-	-	SP -IV.M040.110.IP15	A -W.TFIP15
4	3,0÷3,5	SP -CS.DC11	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TFIP15

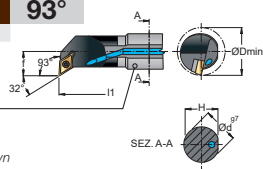


ENH. E SDUCR/L

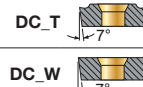
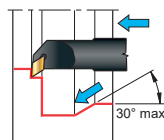
93°

Ø 10 - 20

CARBIDE
METALLO DURO

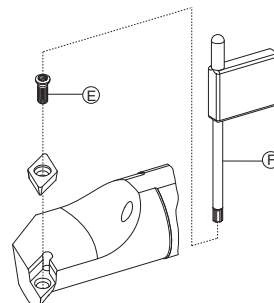


Right-hand shown
In figura utensile destro



art.	D min	d	l1	f	H			€
ENH. E10K SDUCR/L 07	12	10	125	7	9,5	1	0702	216,00
ENH. E12M SDUCR/L 07	16	12	150	9	11,5			240,00
ENH. E16R SDUCR/L 07	20	16	200	11	15,25			392,00
ENH. E20S SDUCR/L 11	25	20	250	13	19,0	2	11T3	616,00

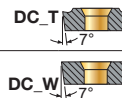
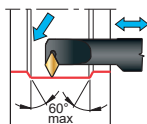
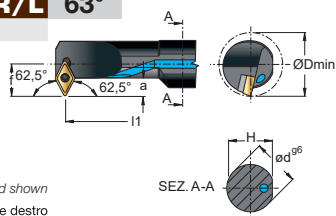
	Nm	E	F
1	1,1÷1,3	SP -IV.M025.063.IP08	A -W.TFIP08
2	3,8÷5,0	SP -IV.M040.085.IP15	A -W.TFIP15



EVO®

ENH. A_SDNCR/L 63°

Ø 16 - 25



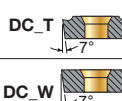
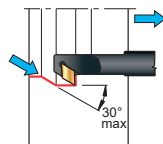
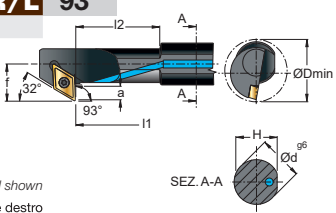
S



	art.	D min	d	a	l1	f	H	l2			€
ENH. A16M	SDNCR/L 07	20	16	6	150	11	15,25	14	1	0702	125,00
ENH. A20Q	SDNCR/L 11	25	20	9	180	15	19,0	21	2	11T3	139,00
ENH. A25R	SDNCR/L 11	32	25	9	200	17	24,0	22	3	11T3	162,00

ENH. A_SDXCR/L 93°

Ø 12 - 25

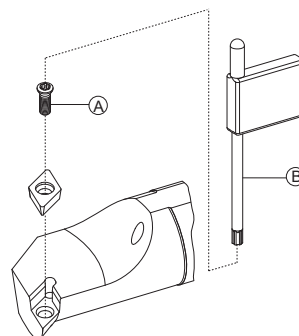


S



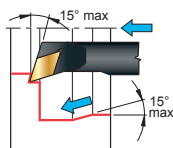
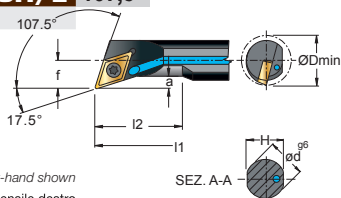
	art.	D min	d	a	l1	f	H	l2			€
ENH. A12K	SDXCR/L 07	16	12	5,0	125	11	11,5	25	1	0702	118,00
ENH. A16M	SDXCR/L 07	20	16	5,0	150	13	15,25	35	1	0702	125,00
ENH. A20Q	SDXCR/L 11	25	20	6,5	180	16,5	19,0	40	2	11T3	139,00
ENH. A25R	SDXCR/L 11	32	25	6,5	200	19	24,0	50	2	11T3	162,00

	Nm	(A)	(B)
1	1,1÷1,3	SP -IV.M025.063.IP08	A -W.TF.IP08
2	3,8÷5,0	SP -IV.M040.085.IP15	A -W.TF.IP15
3	3,8÷5,0	SP -IV.M040.110.IP15	A -W.TF.IP15



ENH. A SDQCR/L 107,5°

Ø 10 - 32



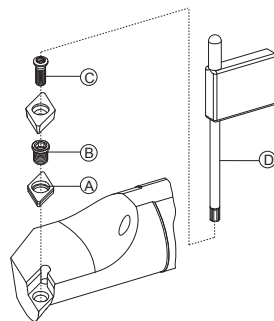
DC_T

S

DC_W

art.	D min	d	l1	f	H			€
ENH. A0810H SDQCR/L 07	12,5	10	100	7	9	1	0702	89,00
ENH. A1012K SDQCR/L 07	15,5	12	125	9	11			89,00
ENH. A1216M SDQCR/L 07	19,5	16	150	11	15			96,00
ENH. A12K SDQCR/L 07	16	12	125	9	11,5	2	0702	107,00
ENH. A16M SDQCR/L 07	20	16	150	11	15,25			118,00
ENH. A20Q SDQCR/L 07	25	20	180	13	19,0			125,00
ENH. A20Q SDQCR/L 11	25	20	180	13	19,0	3	11T3	125,00
ENH. A25R SDQCR/L 11	32	25	200	17	24,0	4	11T3	147,00
ENH. A32S SDQCR/L 11	40	32	250	22	31,0	5	11T3	187,00

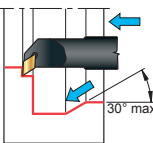
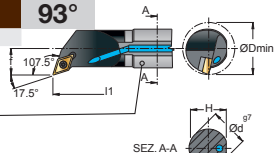
	Nm	A	B	C	D
1	1,0÷1,2	-	-	SP -IV.M025.055.IP07	A -W.TF.IP07
2	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TF.IP08
3	3,8÷5,0	-	-	SP -IV.M040.085.IP15	A -W.TF.IP15
4	3,8÷5,0	-	-	SP -IV.M040.110.IP15	A -W.TF.IP15
5	3,0÷3,5	SP -CS.DC11	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TF.IP15



ENH. E SDQCR/L 93°

Ø 10 - 20

CARBIDE
METALLO DURO



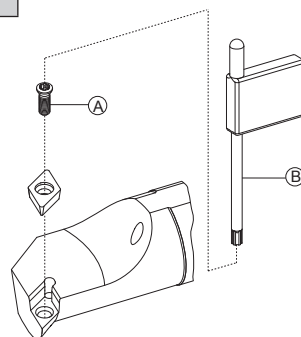
DC_T

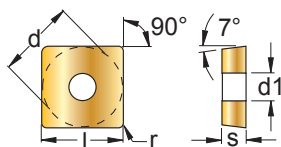
S

DC_W

art.	D min	d	l1	f	H			€
ENH. E10K SDQCR/L 07	12	10	125	7	9,0	1	0702	216,00
ENH. E12M SDQCR/L 07	16	12	150	9	11,0			240,00
ENH. E16R SDQCR/L 07	19	16	200	11	15,0			392,00
ENH. E20S SDQCR/L 11	23	20	250	13	18,0	2	11T3	617,00

	Nm	A	B
1	1,1÷1,3	SP -IV.M025.063.IP08	A -W.TF.IP08
2	3,8÷5,0	SP -IV.M040.110.IP15	A -W.TF.IP15

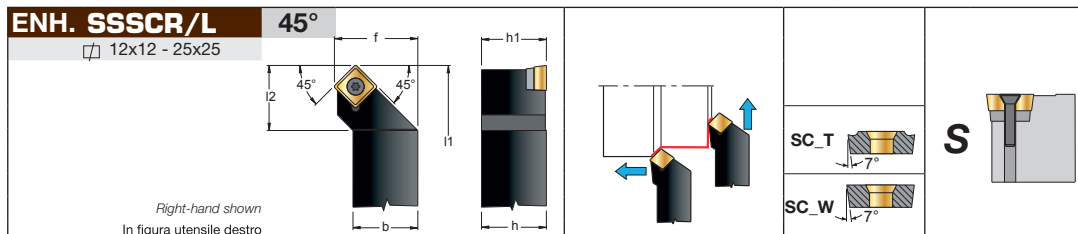




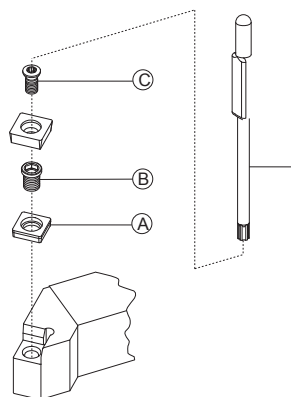
Insert / Inserto		l	d	s	d1
SCMT	09T3	9,70	9,52	3,97	4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . SCMT 09T304 . AKMP35 . N4025	8,50	0,4						
ENK . SCMT 09T308 . AKMP35 . N4025	8,50	0,8						

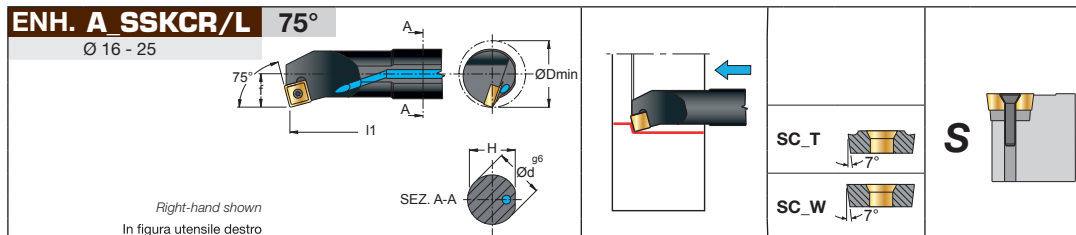
art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S
ENK . SCMT 09T304 . AKPM45 . N8010	9,70	0,4						



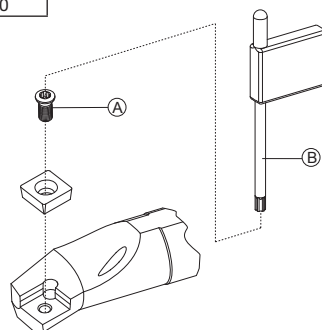
art.	h	b	l1	h1	f	l2			€
ENH. SSSCR/L 1212 F 09	12	12	80	12	16	19	1	09T3	76,00
ENH. SSSCR/L 1616 H 09	16	16	100	16	20	22	2	09T3	83,00
ENH. SSSCR/L 2020 K 09	20	20	125	20	25	23			86,00
ENH. SSSCR/L 1616 H 12	16	16	100	16	20	22	3	1204	83,00
ENH. SSSCR/L 2020 K 12	20	20	125	20	25	23			86,00
ENH. SSSCR/L 2525 M 12	25	25	150	25	32	27			93,00



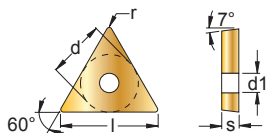
	Nm	A	B	C	D
1	3,8÷5,0	-	-	SP -IV.M040.085.IP15	A -W.TF.IP15
2	3,0÷3,5	SP -CS.CC09	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TF.IP15
3	4,0÷5,0	SP -CS.CC12	SP -BH.M060.M045.090.B045	SP -IV.M045.130.IP20	A -W.TF.IP20



art.	D min	d	l1	f	H			€
ENH. A16M SSKCR/L 09	20	16	150	11	15,25	1	09T3	118,00
ENH. A20Q SSKCR/L 09	25	20	180	13	19,0			132,00
ENH. A25R SSKCR/L 12	32	25	200	17	24,0	2	1204	162,00



	Nm	A	B
1	3,0÷3,5	SP -IV.M040.085.IP15	A -W.TF.IP15
2	4,0÷5,0	SP -IV.M045.100.TX20	A -W.TF.IP20



Insert / Inserto	l	d	s	d1
TCMT	1102	11,00	6,35	2,38
	16T3	16,50	9,52	3,97

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . TCMT 110204 . OKPM45 . N3015	8,50	0,4						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . TCMT 16T304 . OKPM45 . N3025	9,80	0,4							
ENK . TCMT 16T308 . OKPM45 . N3025	9,80	0,8							
ENK . TCMT 16T304 . AKPM45 . N3025	9,80	0,4							
ENK . TCMT 16T308 . AKPM45 . N3025	9,80	0,8							

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . TCMT 110202 . AKMP35 . N4025	8,50	0,2						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . TCMT 110204 . OKPM45 . N4025	8,50	0,4						
ENK . TCMT 16T304 . OKPM45 . N4025	9,80	0,4						
ENK . TCMT 16T308 . OKPM45 . N4025	9,80	0,8						
ENK . TCMT 110204 . AKPM45 . N4025	8,50	0,4						
ENK . TCMT 16T304 . AKPM45 . N4025	9,80	0,4						
ENK . TCMT 16T308 . AKPM45 . N4025	9,80	0,8						

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S
ENK . TCMT 110204 . AKPM45 . N8010	9,70	0,4						
ENK . TCMT 16T304 . AKPM45 . N8010	10,70	0,4						

ENH. STGCR/L 90°
08X08 - 25X25

Right-hand shown
In figura utensile destro

TC_T
TC_W

S

art.	h	b	l1	h1	f	l2			€
ENH.STGCR/L 0808 D 09	8	8	60	8	10	10	1	0902	76,00
ENH.STGCR/L 1010 E 09	10	10	70	10	12	10			76,00
ENH.STGCR/L 1212 F 11	12	12	80	12	16	15	2	1102	76,00
ENH.STGCR/L 1616 H 11	16	16	100	16	20	15			83,00
ENH.STGCR/L 1616 H 16	16	16	100	16	20	20	3	16T3	83,00
ENH.STGCR/L 2020 K 16	20	20	125	20	25	20			86,00
ENH.STGCR/L 2525 M 16	25	25	150	25	32	20			93,00

ENH. STFCR/L 90°
08X08 - 25X25

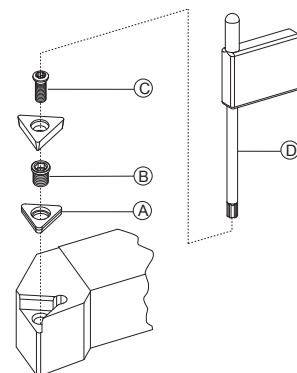
Right-hand shown
In figura utensile destro

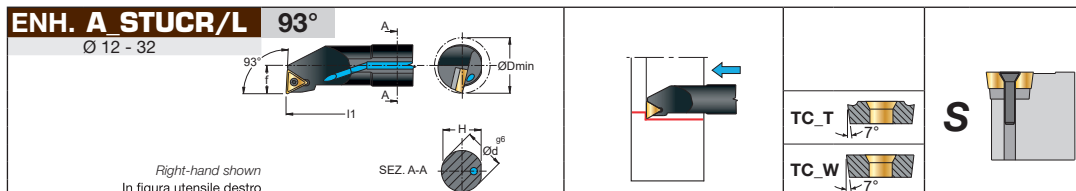
TC_T
TC_W

S

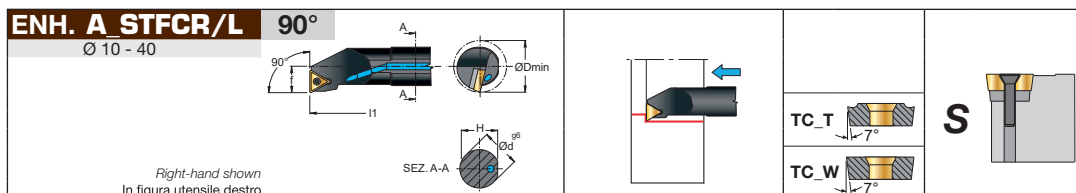
art.	h	b	l1	h1	f	l2			€
ENH.STFCR/L 0808 D 09	8	8	60	8	10	10	1	0902	76,00
ENH.STFCR/L 1010 E 09	10	10	70	10	12	10			76,00
ENH.STFCR/L 1212 F 11	12	12	80	12	16	14	2	1102	76,00
ENH.STFCR/L 1616 H 11	16	16	100	16	20	15			83,00
ENH.STFCR/L 1616 H 16	16	16	100	16	20	20	3	16T3	83,00
ENH.STFCR/L 2020 K 16	20	20	125	20	25	23			86,00
ENH.STFCR/L 2525 M 16	25	25	150	25	32	23			93,00

	Nm	A	B	C	D
1	0,9÷1,0	-	-	SP -IV.M022.052.IP07	A -W.TF.IP07
2	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TF.IP08
3	3,0÷3,5	SP -CS.TC16	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TF.IP15



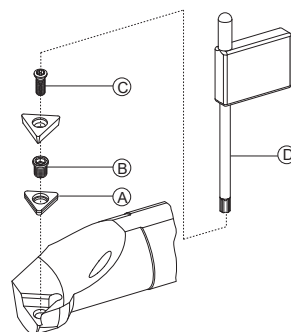


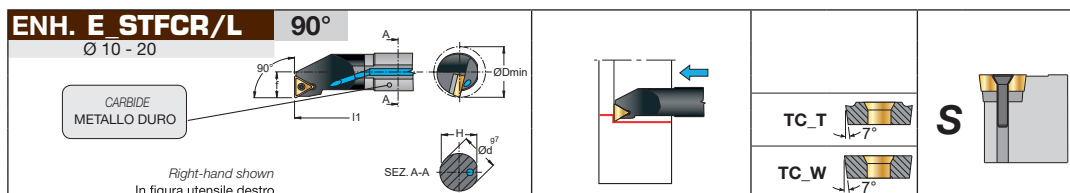
art.	D min	d	l1	f	H			€
ENH. A12K STUCR/L 11	16	12	125	9	11,5	2	1102	107,00
ENH. A16M STUCR/L 16	20	16	150	11	15,25	3	16T3	118,00
ENH. A20Q STUCR/L 16	25	20	180	13	19,0	4	16T3	125,00
ENH. A25R STUCR/L 16	32	25	200	17	24,0			147,00
ENH. A32S STUCR/L 16	40	32	250	22	31,0	5	16T3	187,00



art.	D min	d	l1	f	H			€
ENH. A10H STFCR/L 09	12	10	100	7	9,5	1	0902	107,00
ENH. A10H STFCR/L 11	12	10	100	7	9,5	2	1102	107,00
ENH. A12K STFCR/L 11	16	12	125	9	11,5			107,00
ENH. A16M STFCR/L 11	20	16	150	11	15,25			118,00
ENH. A16M STFCR/L 16	20	16	150	11	15,25	3	16T3	118,00
ENH. A20Q STFCR/L 16	25	20	180	13	19,0	4	16T3	125,00
ENH. A25R STFCR/L 16	32	25	200	17	24,0			147,00
ENH. A32S STFCR/L 16	40	32	250	22	31,0	5	16T3	187,00
ENH. A40T STFCR/L 16	50	40	300	27	38,5			245,00

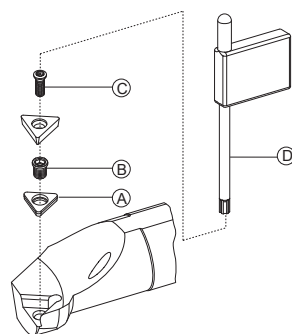
	Nm	A	B	C	D
1	0,9÷1,0	-	-	SP -IV.M022.052.IP07	A -W.TFIP08
2	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TFIP08
3	3,8÷5,0	-	-	SP -IV.M040.085.IP15	A -W.TFIP15
4	3,8÷5,0	-	-	SP -IV.M040.110.IP15	A -W.TFIP15
5	3,0÷3,5	SP -CS.TC16	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TFIP15

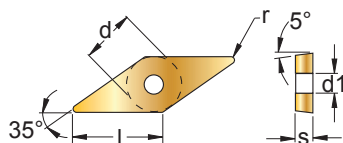




	art.	D min	d	l1	f	H			€
	ENH.E10M STFCR/L 09	13	10	150	7	9,5	1	0902	216,00
	ENH.E12Q STFCR/L 11	16	12	180	9	11,5	2	1102	240,00
	ENH.E16R STFCR/L 11	20	16	200	11	15,25	2	1102	392,00
	ENH.E20S STFCR/L 16	25	20	250	13	19,0	3	16T3	617,00

	Nm	A	B	C	D
1	0,9÷1,0	-	-	SP -IV.M022.052.IP07	A -W.TF.IP08
2	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TF.IP08
3	3,8÷5,0	-	-	SP -IV.M040.110.IP15	A -W.TF.IP15





Insert / Inserto	l	d	s	d1
VBMT	1604	16,50	9,52	4,60
				4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . VBMT 160408 . AKMP35 . N3015	13,20	0,8				P1.1 220 - 400 P2.3 200 - 320 P4.2 180 - 320	K1.1 140 - 370 K1.2 190 - 430 K2.1 180 - 520		

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . VBMT 160404 . AKPM45 . N3015	13,20	0,4				P1.1 220 - 400 P2.3 200 - 320 P4.2 180 - 320	K1.1 140 - 370 K1.2 190 - 430 K2.1 180 - 520		

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . VBMT 160404 . OKPM45 . N3025	13,20	0,4				P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	
ENK . VBMT 160408 . OKPM45 . N3025	13,20	0,8				P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	
ENK . VBMT 160404 . AKPM45 . N3025	13,20	0,4				P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	
ENK . VBMT 160408 . AKPM45 . N3025	13,20	0,8				P1.1 170 - 240 P2.3 100 - 190 P4.2 130 - 210	M2.1 100 - 210 M1.3 70 - 100 M1.2 130 - 220	K1.1 130 - 210 K1.2 120 - 240 K2.1 150 - 250	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . VBMT 160404 . OKPM45 . N4025	13,20	0,4				M2.1 100 - 250 M1.3 40 - 160 M1.2 120 - 250	P1.1 130 - 250 P2.3 60 - 180 P4.2 160 - 200		
ENK . VBMT 160408 . OKPM45 . N4025	13,20	0,8				M2.1 100 - 250 M1.3 40 - 160 M1.2 120 - 250	P1.1 130 - 250 P2.3 60 - 180 P4.2 160 - 200		
ENK . VBMT 160404 . AKPM45 . N4025	13,20	0,4				M2.1 100 - 250 M1.3 40 - 160 M1.2 120 - 250	P1.1 130 - 250 P2.3 60 - 180 P4.2 160 - 200		
ENK . VBMT 160408 . AKPM45 . N4025	13,20	0,8				M2.1 100 - 250 M1.3 40 - 160 M1.2 120 - 250	P1.1 130 - 250 P2.3 60 - 180 P4.2 160 - 200		

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	M	S	K
ENK . VBMT 160404 . AKPM45 . N8010	14,70	0,4				S1.1/S1.3 70 - 150 S2.2 35 - 100 S2.3 30 - 70	M2.1 100 - 250 M1.3 60 - 150 M1.2 90 - 240		
ENK . VBMT 160408 . AKPM45 . N8010	14,70	0,8				S1.1/S1.3 70 - 150 S2.2 35 - 100 S2.3 30 - 70	M2.1 100 - 250 M1.3 60 - 150 M1.2 90 - 240		

ENH. SVJBR/L 93°
□ 16x16 - 32x25

Right-hand shown
In figura utensile destro

VB_T 5°
VB_W 5°

S

art.	h	b	l1	h1	f	l2			€
ENH. SVJBR/L 1616 H 16	16	16	100	16	20	30	1	1604	100,00
ENH. SVJBR/L 2020 K 16	20	20	125	20	25	30			111,00
ENH. SVJBR/L 2525 M 16	25	25	150	25	32	33			125,00
ENH. SVJBR/L 3225 P 16	32	25	170	32	32	33			152,00

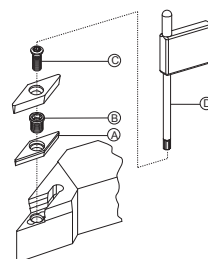
ENH. SVBN 72,5°
□ 20x20 - 32x25

VB_T 5°
VB_W 5°

S

art.	h	b	l1	h1	f	l2			€
ENH. SVBN 2020 K 16	20	20	125	20	10	34	1	1604	111,00
ENH. SVBN 2525 M 16	25	25	150	25	12,5	42			125,00
ENH. SVBN 3225 P 16	32	25	170	32	12,5	42			152,00

	Nm	A	B	C	D
1	3,0÷3,5	SP-CS.VC16	SP-BH.M050.M035.070.B035	SP-IV.M035.110.IP15	A-WTF.IP15



ENH. A_SVQBR/L 107,5°
Ø 25 - 40

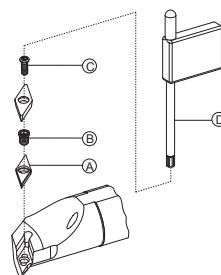
Right-hand shown
In figura utensile destro

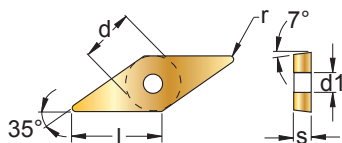
VB_T 7°
VB_W 7°

S

art.	D min	d	l1	f	H			€
ENH. A25R SVQBR/L 16	32	25	200	17	24,0	1	1604	191,00
ENH. A32S SVQBR/L 16	40	32	250	22	31,0	2	1604	229,00
ENH. A40T SVQBR/L 16	50	40	300	27	38,5			276,00

	Nm	A	B	C	D
1	3,0÷3,5	-	-	SP-IV.M035.086.IP15	A-WTF.IP15
2	3,0÷3,5	SP-CS.VC16	SP-BH.M050.M035.070.B035	SP-IV.M035.110.IP15	A-WTF.IP15





Insert / Inserto	l	d	s	d1
VCMT	1103	11,10	6,35	3,18
	1604	16,50	9,52	4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . VCMT 110302 . OKMP35 . N3015	11,30	0,2	P			P1.1 220 - 400	K1.1 140 - 370	
			M			P2.3 200 - 320	K1.2 190 - 430	
			K			P4.2 180 - 320	K2.1 180 - 520	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	K
ENK . VCMT 160404 . OKPM45 . N3015	13,20	0,4	P			P1.1 220 - 400	K1.1 140 - 370	
ENK . VCMT 160408 . OKPM45 . N3015	13,20	0,8	M			P2.3 200 - 320	K1.2 190 - 430	
ENK . VCMT 160404 . AKPM45 . N3015	13,20	0,4	K			P4.2 180 - 320	K2.1 180 - 520	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK . VCMT 160404 . AKPM45 . N3025	13,20	0,4	P			P1.1 170 - 240	M2.1 100 - 210	K1.1 130 - 210	
ENK . VCMT 160408 . AKPM45 . N3025	13,20	0,8	M			P2.3 100 - 190	M1.3 70 - 100	K1.2 120 - 240	
			K			P4.2 130 - 210	M1.2 130 - 220	K2.1 150 - 250	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . VCMT 110302 . OKMP35 . N4025	11,30	0,2	P			M2.1 100 - 250	P1.1 130 - 250	
			M			M1.3 40 - 160	P2.3 60 - 180	
						M1.2 120 - 250	P4.2 160 - 200	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	P	M
ENK . VCMT 160404 . OKPM45 . N4025	13,20	0,4	P			M2.1 100 - 250	P1.1 130 - 250	
ENK . VCMT 160408 . OKPM45 . N4025	13,20	0,8	M			M1.3 40 - 160	P2.3 60 - 180	
						M1.2 120 - 250	P4.2 160 - 200	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	S	K	N
ENK . VCGT 110302 . OKNS15 . NU6015	11,30	0,2				N1.1/N1.5 100 - 800	S1.1/S1.3 60 - 120	K1.1 120 - 160	
ENK . VCGT 160404 . LONS15 . NU6015	13,20	0,4	S			N2.1/N2.4 100 - 300	S2.2 20 - 35	K1.2 130 - 170	
ENK . VCGT 160408 . LONS15 . NU6015	13,20	0,8	K			N4.3 100 - 950	S2.3 15 - 40	K2.1 140 - 200	

ENH. SVJCR/L 93°
□ 12x12 - 32x25

Right-hand shown
In figura utensile destro

VC_T
VC_W

S

art.	h	b	l1	h1	f	l2			€
ENH . SVJCR/L 1212 F 11	12	12	80	12	16	21	1	1103	93,00
ENH . SVJCR/L 1616 H 11	16	16	100	16	20	24			93,00
ENH . SVJCR/L 2020 K 11	20	20	125	20	25	23			100,00
ENH . SVJCR/L 2525 M 11	25	25	150	25	32	27			111,00
ENH . SVJCR/L 2020 K 16	20	20	125	20	25	30	2	1604	100,00
ENH . SVJCR/L 2525 M 16	25	25	150	25	32	33			111,00
ENH . SVJCR/L 3225 P 16	32	25	170	32	32	33			139,00
ENH . SVJBR/L 3225 P 16	32	25	170	32	32	33			152,00

ENH. SVHCR/L 107,5°
□ 16x16 - 32x25

Right-hand shown
In figura utensile destro

VC_T
VC_W

S

art.	h	b	l1	h1	f	l2			€
ENH . SVHCR/L 1616 H 11	16	16	100	16	20	15	1	1103	93,00
ENH . SVHCR/L 2020 K 11	20	20	125	20	25	18			100,00
ENH . SVHCR/L 2525 M 11	25	25	150	25	32	25			111,00
ENH . SVHCR/L 2020 K 16	20	20	125	20	25	17	2	1604	111,00
ENH . SVHCR/L 2525 M 16	25	25	150	25	32	23			125,00
ENH . SVHCR/L 3225 P 16	32	25	170	32	32	23			152,00

ENH. SVXCR/L 113°
□ 20x20 - 25x25

Right-hand shown
In figura utensile destro

VC_T
VC_W

S

art.	h	b	l1	h1	f	l2			€
ENH . SVXCR/L 2020 K 16	20	20	125	20	25	25	1	1103	111,20
ENH . SVXCR/L 2525 M 16	25	25	150	25	32	25			125,90

ENH. SVVCN 72,5°
□ 16x16 - 32x25

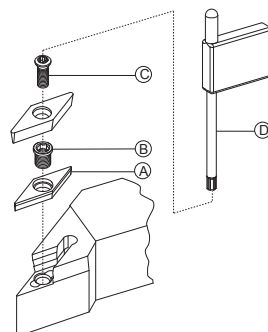
Right-hand shown
In figura utensile destro

VC_T
VC_W

S

art.	h	b	l1	h1	f	l2			€
ENH . SVVCN 1616 H 11	16	16	100	16	8	26	1	1103	83,00
ENH . SVVCN 2020 K 11	20	20	125	20	10	32			86,00
ENH . SVVCN 2525 M 11	25	25	150	25	12,5	40			93,00
ENH . SVVCN 2020 K 16	20	20	125	20	10	34	2	1604	100,00
ENH . SVVCN 2525 M 16	25	25	150	25	12,5	42			111,00
ENH . SVVCN 3225 P 16	32	25	170	32	12,5	42			139,00

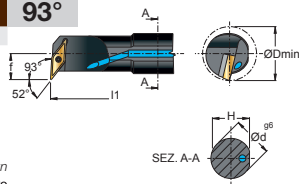
	Nm	A	B	C	D
1	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TF.IP08
2	3,0÷3,5	SP -CS.VC16	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TF.IP15



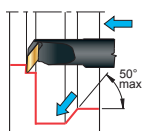
ENH. A SVUCR/L

93°

Ø 16 - 40



Right-hand shown
In figura utensile destro



VC_T

VC_W

S

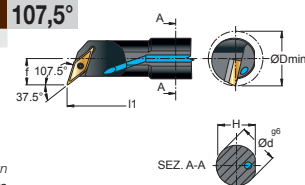


art.	D min	d	l1	f	H			€
ENH . A16M SVUCR/L 11	21	16	150	12	15,25	1	1103	122,50
ENH . A20Q SVUCR/L 11	25	20	180	13	19,0	1	1103	150,60
ENH . A25R SVUCR/L 16	32	25	200	17	24,0	2	1604	177,60
ENH . A32S SVUCR/L 16	40	32	250	22	31,0	3	1604	213,50
ENH . A40T SVUCR/L 16	50	40	300	27	38,5	3	1604	257,00

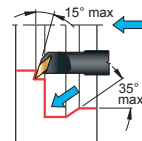
ENH. A SVQCR/L

107,5°

Ø 16 - 40



Right-hand shown
In figura utensile destro



VC_T

VC_W

S

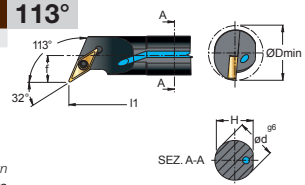


art.	D min	d	l1	f	H			€
ENH . A16M SVQCR/L 11	20	16	150	11	15,25	1	1103	122,50
ENH . A20Q SVQCR/L 11	25	20	180	13	19,0	1	1103	150,60
ENH . A25R SVQCR/L 16	32	25	200	17	24,0	2	1604	177,60
ENH . A32S SVQCR/L 16	40	32	250	22	31,0	3	1604	213,50
ENH . A40T SVQCR/L 16	50	40	300	27	38,5	3	1604	257,00

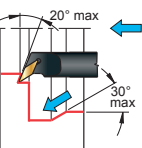
ENH. A SVXCR/L

113°

Ø 16 - 25



Right-hand shown
In figura utensile destro



VC_T

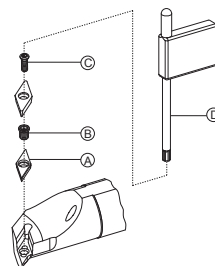
VC_W

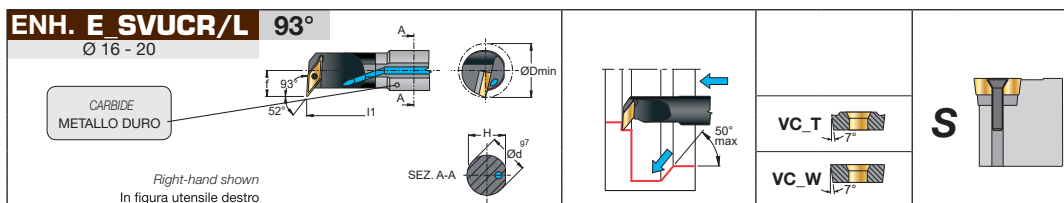
S



art.	D min	d	l1	f	H			€
ENH . A16M SVXCR/L 11	20	16	150	11	15,25	1	1103	122,50
ENH . A20Q SVXCR/L 11	25	20	180	13	19,0	1	1103	150,60
ENH . A25R SVXCR/L 16	32	25	200	17	24,0	2	1604	177,60

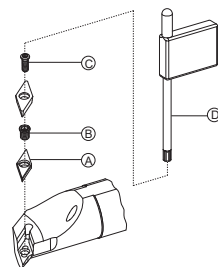
	Nm	A	B	C	D
1	1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TFIP08
2	3,0÷3,5	-	-	SP -IV.M035.086.IP15	A -W.TFIP15
3	3,0÷3,5	SP -CS.VC16	SP -BH.M050.M035.070.B035	SP -IV.M035.110.IP15	A -W.TFIP15





art.	D min	d	L1	f	H			€
ENH . E16R SVUCR/L 11	21	16	200	11	15,25	1	1103	468,00
ENH . E20S SVUCR/L 11	25	20	250	13	19,0			592,00

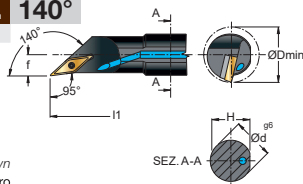
1	Nm 1,1÷1,3	-	-	SP -IV.M025.063.IP08	A -W.TFIP08



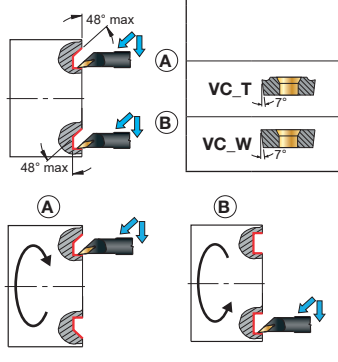
ENH. A SVOCR/L

140°

Ø 12 - 25



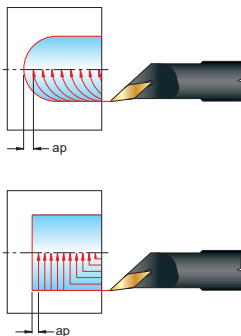
Right-hand shown
In figura utensile destro



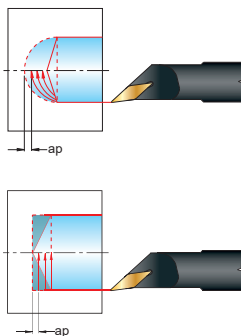
S

art.	D min	d	l1	f	H			€
ENH . A12K SVOCR/L 11	16	12	125	9	11,5	1	1102	115,90
ENH . A16M SVOCR/L 11	20	16	150	11	15,0			129,10
ENH . A20Q SVOCR/L 16	23	20	180	12,5	19,0	2	1604	157,20
ENH . A25R SVOCR/L 16	30	25	200	16,5	24,0			184,20

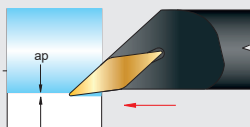
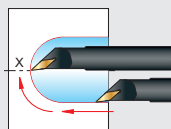
Machining a workpiece without
prepared hole.
Lavorazione senza preforo.



Machining a workpiece with prepared
hole.
Lavorazione con preforo.

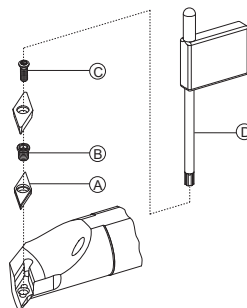


Make sure the cutting edge does not
surpass the X rotation axis.
Fare attenzione che il tagliente non
superi l'asse di rotazione X.



Cutting depth ap must be lower than
insert radius.
La profondità di passata ap deve
essere inferiore al raggio inserto.

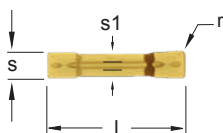
	Nm	A	B	C	D
1	1,1÷1,3	-	-	SP-IV.M025.063.IP08	A-W.TF.IP08
2	3,0÷3,5	-	-	SP-IV.M035.110.IP15	A-W.TF.IP15





INDEXABLE INSERTS FOR TURNING TOOLS

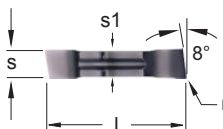
GPN/R/L inserts		84
GPR/L tools		85

ENK. **GPN**

Insert / Inserto		l	r	s	s1
GPN	2002	16,0	0,2	2,0	1,60
	2502	18,5	0,2	2,5	2,00
	3002	21,0	0,4	3,0	2,35
	4002	21,0	0,4	4,0	3,30
	5002	26,0	0,8	5,0	4,10
5002-02-04		26,0	0,4	5,0	4,10

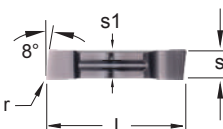
art.	€	s	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK. GPN 2002-02. LOPM5T. N3015	18,90	2,0							
ENK. GPN 2502-02. LOPM5T. N3015	18,90	2,5							
ENK. GPN 3002-02. LOPM5T. N3015	18,90	3,0							
ENK. GPN 4002-02. LOPM5T. N3015	19,80	4,0							
ENK. GPN 5002-02. LOPM5T. N3015	21,70	5,0							

art.	€	s	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK. GPN 2002-02. LOPM5T. N4025	18,90	2,0							
ENK. GPN 2502-02. LOPM5T. N4025	18,90	2,5							
ENK. GPN 3002-02. LOPM5T. N4025	18,90	3,0							
ENK. GPN 4002-02. LOPM5T. N4025	19,80	4,0							
ENK. GPN 5002-02. LOPM5T. N4025	21,70	5,0							
ENK. GPN 5002-02-04. LOPM5T. N4025	21,70	5,0							

ENK. **GPR**

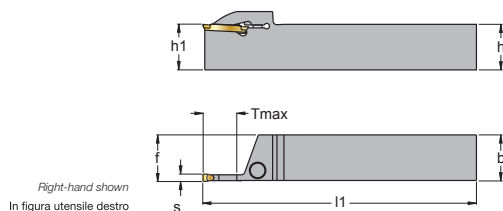
Insert / Inserto		l	d	s	s1
GPR	2082	16,0	-	2,0	1,60
	3082	21,0	-	3,0	2,35

art.	€	s	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK. GPR 2082-02. LOPM3T. N4025	18,90	2,0							
ENK. GPR 3082-02. LOPM3T. N4025	18,90	3,0							

ENK. **GPL**

Insert / Inserto		l	d	s	s1
GPL	2082	16,0	-	2,0	1,60
	3082	21,0	-	3,0	2,35

art.	€	s	geometry	toughness	ap/f	Vt (m/min)	P	M	K
ENK. GPL 2082-02. LOPM3T. N4025	18,90	2,0							
ENK. GPL 3082-02. LOPM3T. N4025	18,90	3,0							



art.	s	T max	h	b	f	l1	h1	kg		€
ENH . GPR/L 1212 . 145 . 020	2	14,5	12	12	14,25	100	12	0,1		133,00
ENH . GPR/L 1212 . 165 . 025	2,5	16,5	12	12	14,25	100	12	0,1		117,00
ENH . GPR/L 1212 . 165 . 030	3	16,5	12	12	14,25	100	12	0,1		137,00
ENH . GPR/L 1616 . 145 . 020	2	14,5	16	16	16,35	100	16	0,2		143,00
ENH . GPR/L 1616 . 180 . 020	2	18,0	16	16	16,35	100	16	0,2		143,00
ENH . GPR/L 1616 . 165 . 025	2,5	16,5	16	16	16,35	100	16	0,2		137,00
ENH . GPR/L 1616 . 185 . 030	3	18,5	16	16	16,35	115	16	0,2		143,00
ENH . GPR/L 2020 . 145 . 020	2	14,5	20	20	20,40	125	20	0,4		137,00
ENH . GPR/L 2020 . 165 . 025	2,5	16,5	20	20	20,40	125	20	0,4		149,00
ENH . GPR/L 2020 . 180 . 030	3	18,0	20	20	20,40	125	20	0,4		149,00
ENH . GPR/L 2020 . 180 . 040	4	18,0	20	20	20,40	125	20	0,4		157,00
ENH . GPR/L 2020 . 250 . 040	4	25,0	20	20	20,40	125	20	0,4		157,00
ENH . GPR/L 2020 . 230 . 050	5	23,0	20	20	20,40	150	20	0,4		157,00
ENH . GPR/L 2525 . 145 . 020	2	14,5	25	25	25,40	150	25	0,6		137,00
ENH . GPR/L 2525 . 165 . 025	2,5	16,5	25	25	25,40	150	25	0,6	GPN GPR/L	149,00
ENH . GPR/L 2525 . 180 . 030	3	18,0	25	25	25,40	150	25	0,6		177,00
ENH . GPR/L 2525 . 250 . 030	3	25,0	25	25	25,40	150	25	0,6		157,00
ENH . GPR/L 2525 . 400 . 030	3	40,0	25	25	25,40	150	25	0,6		165,00
ENH . GPR/L 2525 . 180 . 040	4	18,0	25	25	25,40	150	25	0,6		157,00
ENH . GPR/L 2525 . 250 . 040	4	25,0	25	25	25,40	150	25	0,6		157,00
ENH . GPR/L 2525 . 400 . 040	4	40,0	25	25	25,40	150	25	0,6		165,00
ENH . GPR/L 2525 . 230 . 050	5	23,0	25	25	25,40	150	25	0,6		157,00
ENH . GPR/L 2525 . 400 . 050	5	40,0	25	25	25,40	150	25	0,6		157,00
ENH . GPR/L 3232 . 180 . 030	3	18,0	32	32	32,40	170	32	0,7		157,00
ENH . GPR/L 3232 . 250 . 030	3	25,0	32	32	32,40	170	32	0,7		157,00
ENH . GPR/L 3232 . 400 . 030	3	40,0	32	32	32,40	170	32	0,7		165,00
ENH . GPR/L 3232 . 180 . 040	4	18,0	32	32	32,40	170	32	0,7		157,00
ENH . GPR/L 3232 . 250 . 040	4	25,0	32	32	32,40	170	32	0,7		157,00
ENH . GPR/L 3232 . 400 . 040	4	40,0	32	32	32,40	170	32	0,7		165,00
ENH . GPR/L 3232 . 230 . 050	5	23,0	32	32	32,40	170	32	0,7		157,00
ENH . GPR/L 3232 . 400 . 050	5	40,0	32	32	32,40	170	32	0,7		165,00

EVO®



...THE WAY TO THE FUTURE!





INDEXABLE INSERTS FOR TURNING TOOLS

CNGM / CNGA inserts	92
TNGA inserts	93
WNGM inserts	94
CCGW inserts	95
DCGT inserts	95
TCGT inserts	96

EVO CODIFICATION FOR CBN TURNING INSERTS | CODIFICA EVO PER INSERTI CBN DI TORNITURA

EVO CBN TURNING INSERTS
INSERTI CBN DI TORNITURA EVOISO CODIFICATION
CODIFICA ISO

ENK . CNGM120408 .

CBN INSERT'S TOTAL LENGTH
LUNGHEZZA EFFETTIVA I1 INSERTO IN CBN

- 2 = 2,2 mm cutting length
2,2 mm lunghezza tagliente
- 3 = 3,3 mm cutting length
3,3 mm lunghezza tagliente
- 4 = 4,0 mm cutting length
4,0 mm lunghezza tagliente
- 5 = 5,0 mm cutting length
5,0 mm lunghezza tagliente

GEOMETRY - CHIP BREAKER FORM
GEOMETRIA - FORMA DEL ROMPITRUCIOLO

- C40 = Finishing chipbreaker
Rompitruciolo di finitura
- C70 = Roughing chipbreaker
Rompitruciolo di sgrossatura
- F50 = Flat
Piatto

According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.

Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.

**CUTTING EDGES
NUMERO DI TAGLIENTI**

- 1 = Cutting edge
Tagliente
- 2 = Cutting edges
Taglienti
- 3 = Cutting edges
Taglienti

2 2 C70 . BC 90 60

**BASE MATERIAL
MATERIALE BASE**

- BC = CBN coated
CBN rivestito
- BU = CBN uncoated
CBN non rivestito

**APPLICATION
APPLICAZIONE**

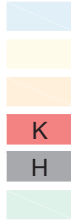
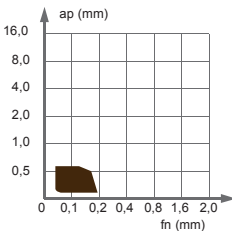
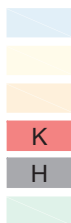
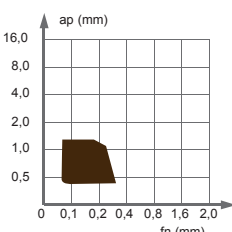
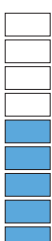
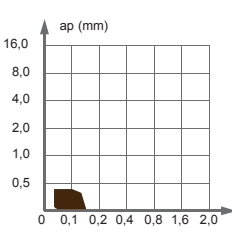
- 90 = Hardened steel
Acciaio temprato

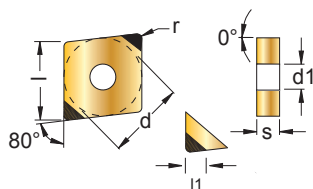
**CBN GRADE
GRADO CBN**

- 30 = High hardness grade
Grado di elevata durezza
- 60 = Medium hardness grade
Grado di media durezza
- 90 = High toughness grade
Grado di elevata tenacità

EVO	Type Tipo	Material Materiale	Toughness Tenacità	Application Applicazione
BC9030	Coated CBN CBN rivestito	     	       	- High hardness coated CBN for high speed cutting on hardened steel and cast iron with stable cutting conditions - CBN rivestito con elevata durezza per la lavorazione ad elevata velocità di taglio di acciaio temprato e ghisa in condizioni di taglio stabili.
BC9060	Coated CBN CBN rivestito	     	       	- CBN coated technology for machining hardened steel and cast iron under unstable condition - CBN rivestito per la lavorazione di acciaio temprato e ghisa con condizioni stabili.
BC9090	Coated CBN CBN rivestito	     	       	- Tough CBN coated technology for machining hardened steel and cast iron under unstable condition with light interrupted cutting - CBN rivestito con elevata tenacità per la lavorazione di acciaio temprato e ghisa con condizioni stabili e con taglio leggermente interrotto.

Negative inserts | Inserti negativi

EVO	Material Materiale	Machining Lavorazione	Strenght Robustezza	ap/f	Application Applicazione
C40 					<i>Chipbreaker geometry suitable for medium-light cutting depth and finishing</i> Geometria con rompitruciolo per medie-piccole profondità di taglio e finitura.
C70 					<i>Chipbreaker geometry suitable for heavy cutting depth and medium interrupted cutting</i> Geometria con rompitruciolo di sgrossatura adatta a profondità di taglio elevate e a taglio mediamente interrotto.
F50 					<i>Flat geometry suitable for general application</i> Geometria piatta per applicazioni generali.



Insert / Inserto		l	d	s	d1	r
CNGM	120404	12,90	12,70	4,76	5,16	0,4
	120408	12,90	12,70	4,76	5,16	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . CNGM 120404 . 23C40 . BC9030	111,00	3,3				H1.1 160 - 190 H1.2 130 - 150 H1.3 100 - 120	H1.4 80 - 100	K1.2 320 - 480 K1.3 220 - 350

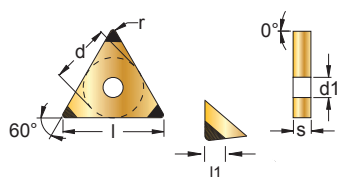
art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . CNGM 120404 . 22C40 . BC9060	91,00	2,2				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . CNGM 120404 . 22C40 . BC9090	91,00	2,2				H1.1 120 - 150 H1.2 100 - 120 H1.3 70 - 90	H1.4 50 - 70	K1.2 250 - 400 K1.3 180 - 280

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . CNGM 120408 . 22C70 . BC9090	99,00	2,2				H1.1 120 - 150 H1.2 100 - 120 H1.3 70 - 90	H1.4 50 - 70	K1.2 250 - 400 K1.3 180 - 280

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . CNGA 120408 . 23F50 . BC9060	95,00	3,3				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320

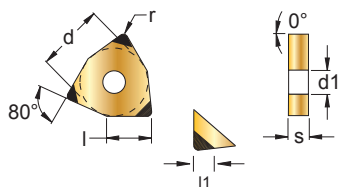
According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.
 Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.



Insert / Inserto		l	d	s	d1	r
TNGA	160408	16,50	9,52	4,60	4,40	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . TNGA 160408 . 32F50 . BC9090	95,00	2,2				H1.1 120 - 150	H1.4 50 - 70	K1.2 250 - 400
						H1.2 100 - 120		K1.3 180 - 280
						H1.3 70 - 90		

According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.
Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di romptruciolo, dimensione inserto e geometria wiper.



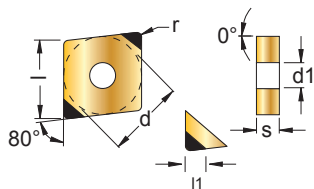
Insert / Inserto		l	d	s	d1	r
WNGM	080408	8,70	12,70	4,76	5,16	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . WNGM 080408 . 32C40 . BC9060	124,50	2,2				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . WNGM 080408 . 32C40 . BC9090	124,50	2,2				H1.1 120 - 150 H1.2 100 - 120 H1.3 70 - 90	H1.4 50 - 70	K1.2 250 - 400 K1.3 180 - 280

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . WNGM 080408 . 32C70 . BC9090	137,70	2,2				H1.1 120 - 150 H1.2 100 - 120 H1.3 70 - 90	H1.4 50 - 70	K1.2 250 - 400 K1.3 180 - 280

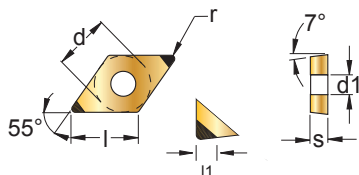
According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.
 Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di rompitrucciolo, dimensione inserto e geometria wiper.



Insert / Inserto		l	d	s	d1	r
CCGW	120404	12,90	12,70	4,76	5,16	0,4
	120408	12,90	12,70	4,76	5,16	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . CCGW 060204 . 22C40 . BC9060	84,00	0,4				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320

According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.
Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.



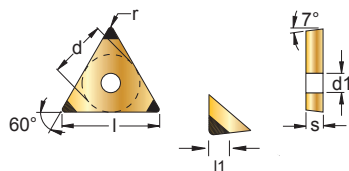
Insert / Inserto		l	d	s	d1	r
DCGT	11T304	11,60	9,52	3,97	4,40	0,4
	11T308	11,60	9,52	3,97	4,40	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . DCGT 070204 . 22C40 . BC9060	84,00	0,4				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320
ENK . DCGT 11T304 . 22C40 . BC9060	96,00	2,2						
ENK . DCGT 11T308 . 22C40 . BC9060	96,00	2,2						

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . DCGT 11T304 . 22C70 . BC9060	99,00	2,2				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320
ENK . DCGT 11T308 . 22C70 . BC9060	103,00	2,2						

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . DCGT 11T308 . 22F50 . BC9060	64,30	2,2				H1.1 150 - 180 H1.2 120 - 140 H1.3 90 - 110	H1.4 70 - 90	K1.2 300 - 450 K1.3 200 - 320

According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.
Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.



Insert / Inserto	l	d	s	d1	r
TCGT 110204	11,00	6,35	2,38	2,80	0,4
TCGT 110208	11,00	6,35	2,38	2,80	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	K	H
ENK . TCGT 110204 . 32C40 . BC9090	102,00	2,2				H1.1 120 - 150	H1.4 50 - 70	K1.2 250 - 400
ENK . TCGT 110208 . 32C40 . BC9090	102,00	2,2				H1.2 100 - 120		K1.3 180 - 280
						H1.3 70 - 90		

According to your request EVO supply you all the combination of CBN hardness, type of chip breaker, insert dimension and wiper geometry.
Su vostra richiesta EVO fornisce tutte le combinazioni di durezza CBN, rivestimento, tipo di romptruciolo, dimensione inserto e geometria wiper.



INDEXABLE INSERTS FOR TURNING TOOLS

CCGW inserts		102
DCGW inserts		103
TCGW inserts		104
VCGW inserts		104

EVO CODIFICATION FOR PCD TURNING INSERTS | CODIFICA EVO PER INSERTI PCD DI TORNITURA

EVO CBN TURNING INSERTS
INSERTI CBN DI TORNITURA EVO

ISO CODIFICATION
CODIFICA ISO

ENK . CCGW09T304 .

**RADIUS TYPE
TIPO DI RAGGIO**

0 = Standard radius
Raggio standard

W = Wiper insert
Inserto wiper

According to your request EVO supply you all the combination of PCD hardness, type of chip breaker, insert dimension and wiper geometry.

Su vostra richiesta EVO fornisce tutte le combinazioni di durezza PCD, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.

**CUTTING EDGES
NUMERO DI TAGLIENTI**

- 1 = Cutting edge
Tagliente
- 2 = Cutting edges
Taglienti
- 3 = Cutting edges
Taglienti

**GEOMETRY - CHIP BREAKER FORM
GEOMETRIA - FORMA DEL ROMPITRUCIOLO**

- C35 = Finishing chipbreaker
Rompitrucolo di finitura
- F = Flat
Piatto

10 3 C35 . P 10 00

**BASE MATERIAL
MATERIALE BASE**

P = PCD

**APPLICATION
APPLICAZIONE**

10 = Aluminum
Alluminio

**PCD GRADE
GRADO PCD**

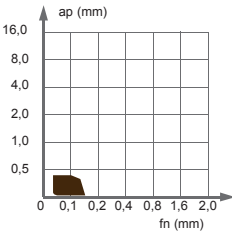
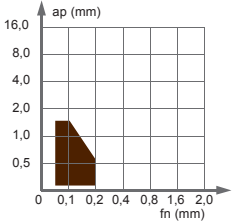
00 = Single grade
Grado unico

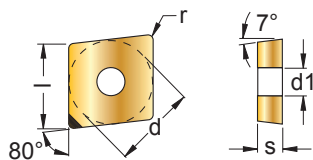
**PCD INSERTS TOTAL LENGTH
LUNGHEZZA EFFETTIA INSERTO PCD**

- _ = 2,2 mm cutting length | 2,2 mm lunghezza tagliente
- 3 = 3,2 mm cutting length | 3,2 mm lunghezza tagliente

EVO	Type Tipo	Material Materiale	Toughness Tenacità	Application Applicazione
P1000	Uncoated PCD PCD non rivestito			- PCD quality suitable for machining on aluminum alloys - Qualità PCD idonea alla lavorazione delle leghe d'alluminio
				
				
				
				
				
				

Positive inserts | Inserti positivi

EVO	Material Materiale	Machining Lavorazione	Strenght Robustezza	ap/f	Application Applicazione
F45 					<i>Flat geometry suitable for general application</i> Geometria piatta per applicazioni generali.
C35 					<i>Chip breaker low cutting forces geometry.</i> <i>For medium-light machining.</i> Geometria rompitruciolo a basso sforzo di taglio. Adatto alla lavorazione medio-leggera.

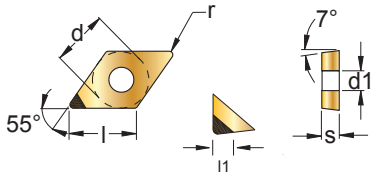


Insert / Inserto		l	d	s	d1
CCGW	0602	6,50	6,35	2,38	2,80
	09T3	9,70	9,52	3,97	4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	N
ENK . CCGW 060204 . 103F45 . P1000	64,00	0,5				N1.1 600 - 1500 N1.2 450 - 900 N1.3 250 - 700	

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	N
ENK . CCGW 060204 . 103C35 . P1000	64,00	0,4				N1.1 600 - 1500 N1.2 450 - 900 N1.3 250 - 700	
ENK . CCGW 09T304 . 103C35 . P1000	64,00	0,4					

According to your request EVO supply you all the combination of PCD hardness, type of chip breaker, insert dimension and wiper geometry.
 Su vostra richiesta EVO fornisce tutte le combinazioni di durezza PCD, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.

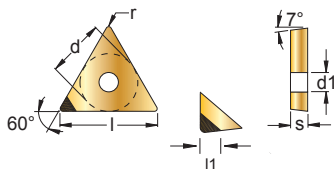


Insert / Inserto		l	d	s	d1	r
DCGW	11T302	11,60	9,52	3,97	4,40	0,2
	11T304	11,60	9,52	3,97	4,40	0,4
	11T308	11,60	9,52	3,97	4,40	0,8

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	N
ENK . DCGW 11T302 . 10F45 . P1000	56,00	2,8					N
ENK . DCGW 11T304 . 10F45 . P1000	56,00	2,8					
ENK . DCGW 11T308 . 10F45 . P1000	56,00	2,8					

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	N
ENK . DCGW 11T302 . 10C35 . P1000	62,00	0,2					N
ENK . DCGW 11T304 . 10C35 . P1000	62,00	0,4					
ENK . DCGW 11T308 . 10C35 . P1000	62,00	0,8					

According to your request EVO supply you all the combination of PCD hardness, type of chip breaker, insert dimension and wiper geometry.
Su vostra richiesta EVO fornisce tutte le combinazioni di durezza PCD, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.

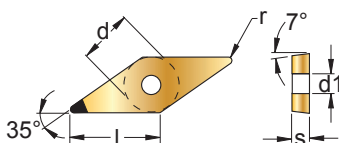


Insert / Inserto	l	d	s	d1	r
TCGW 090204	9,00	5,56	2,38	2,50	0,4
TCGW 110304	11,10	6,35	3,18	2,90	0,4
TCGW 160404	16,60	9,52	4,76	4,40	0,4
TCGW 160408	16,60	9,52	4,76	4,40	0,8
TCGW 16T304	16,50	9,52	3,97	4,40	0,4

art.	€	l1	geometry	toughness	ap/f	Vt (m/min)	N
ENK . TCGW 090204 . 10F45 . P1000	56,00	2,8					
ENK . TCGW 110304 . 10F45 . P1000	56,00	2,8					
ENK . TCGW 160404 . 10F45 . P1000	56,00	2,8					
ENK . TCGW 160408 . 10F45 . P1000	56,00	2,8					
ENK . TCGW 16T304 . 10F45 . P1000	56,00	2,8					

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	N
ENK . TCGW 16T304 . 10C35 . P1000	64,00	0,4					
ENK . TCGW 16T308 . 10C35 . P1000	64,00	0,4					

According to your request EVO supply you all the combination of PCD hardness, type of chip breaker, insert dimension and wiper geometry.
 Su vostra richiesta EVO fornisce tutte le combinazioni di durezza PCD, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.



Insert / Inserto	l	d	s	d1
VCGW 1604	16,50	9,52	4,60	4,40

art.	€	r	geometry	toughness	ap/f	Vt (m/min)	N
ENK . VCGW 160408 . 10C35 . P1000	67,00	0,8					

According to your request EVO supply you all the combination of PCD hardness, type of chip breaker, insert dimension and wiper geometry.
 Su vostra richiesta EVO fornisce tutte le combinazioni di durezza PCD, rivestimento, tipo di rompitruciolo, dimensione inserto e geometria wiper.



MINI BARENI

Tool holder for mini boring tool	
Portautensile per mini bareno di tornitura	106
Mini boring tool for internal turning	
Mini bareno per tornitura interna.....	119
Mini boring tool for internal grooving	
Mini bareno per scanalatura interna.....	126
Mini boring tool for internal spherical grooving	
Mini bareno per scanalatura interna sferica ...	130
Mini boring tool for face grooving	
Mini bareno per scanalatura frontale	133
Mini boring tool for face spherical grooving	
Mini bareno per scanalatura frontale sferica .	134
Mini boring tool for chamfering	
Mini bareno per smussatura	136
Mini boring tool for internal threading	
Mini bareno per filettatura interna.....	137

TOOL TYPE | TIPOLOGIA DI UTENSILE

MT = Mini boring tool for internal turning | Mini bareno per tornitura interna

MG = Mini boring tool for internal grooving | Mini bareno per scanalatura interna

MS = Mini boring tool for Internal spherical grooving | Mini bareno per scanalatura interna sferica

ME = Mini boring tool for face external grooving | Mini bareno per scanalatura frontale esterna

MF = Mini boring tool for face external spherical grooving | Mini bareno per scanalatura frontale sferica esterna

MI = Mini boring tool for face internal grooving | Mini bareno per scanalatura frontale interna

ML = Mini boring tool for face internal spherical grooving | Mini bareno per scanalatura frontale sferica interna

MC = Mini boring tool for chamfering | Mini bareno per smussatura

MZ = Mini boring tool for Internal threading ISO partial profile | Mini bareno per filettatura interna con profilo parziale ISO

ENK . MT 20 R . UK 9820

**DESIGN
ESECUZIONE**

R = Right | Destra
L = Left | Sinistra

**MATERIAL APPLICATION
APPLICAZIONE MATERIALE**

10 = Aluminium | Alluminio
20 = Universal | Universale

MT:

ANGLE HEAD β | ANGOLO DI TESTA β

ANGLE HEAD α | ANGOLO DI TESTA α

MG/MS/MI/ME/ML/MF:

GROOVE WIDTH | LARGHEZZA DI SCANALATURA

0150 = 1,5 mm

MC:

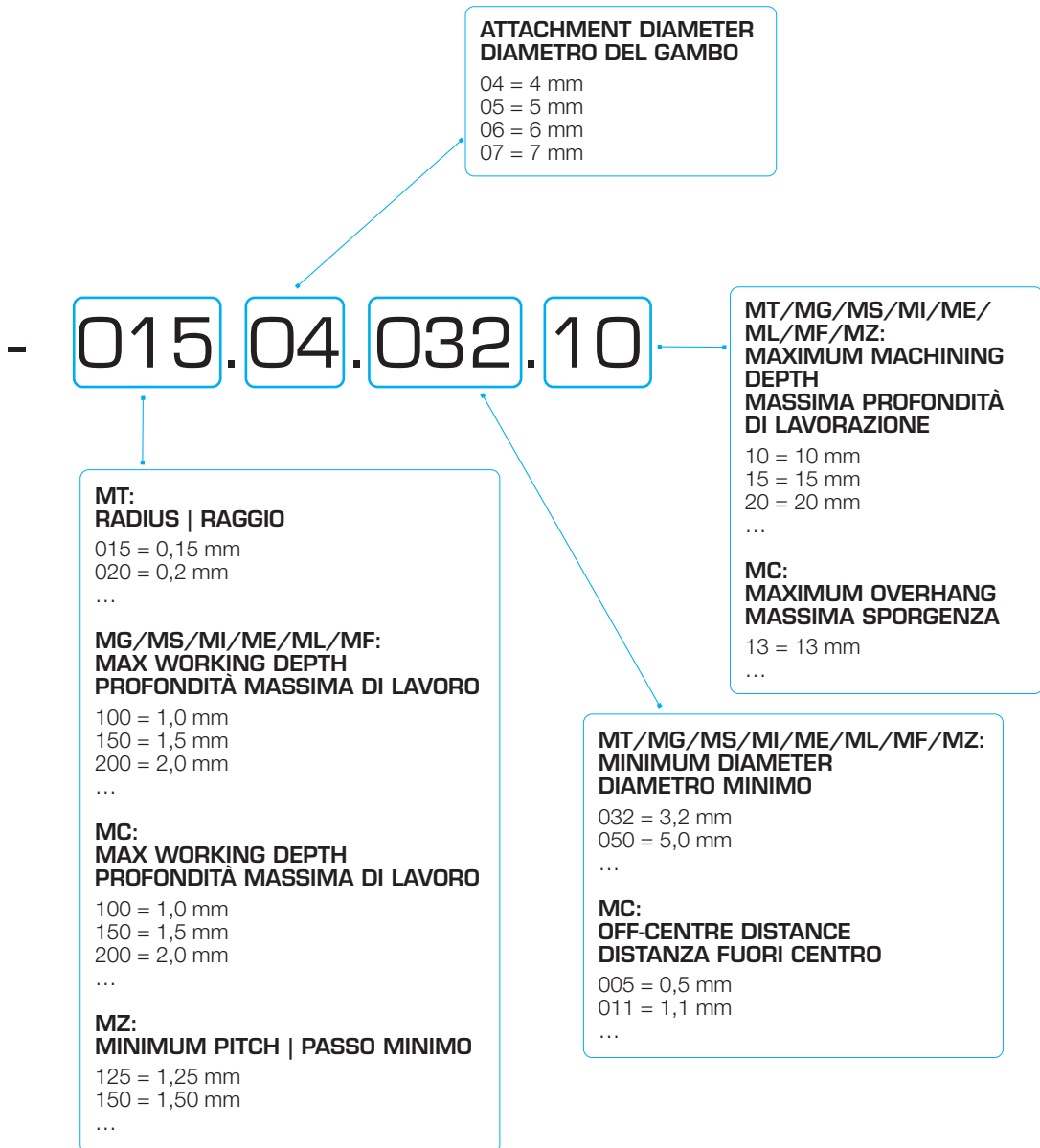
CHAMFERING ANGLE | ANGOLO DI SMUSSO

0045 = 45°

MZ:

THREAD ANGLE | ANGOLO DEL FILETTO

0060 = 60°



ENH. **MX** **04** - UK. **012**. **070**

**ATTACHMENT DIAMETER
DIAMETRO DEL GAMBO**

04 = 4 mm
06 = 6 mm
...

**SHANK DIAMETER
DIAMETRO DELLO STELO**

012 = 12 mm
016 = 16 mm
...

**TOOL TYPE
TIPOLOGIA DI UTENSILE**

MX = Tool holder for mini boring tool
Portautensile per mini bareno

**TOOL LENGHT
LUNGHEZZA UTENSILE**

070 = 70 mm
075 = 75 mm
100 = 100 mm
...

Mini boring tool carbide grade application

Applicazione delle qualità di metallo duro dei mini bareni

MINI BARENI

EVO	DIN ISO 513		Material Materiale	Toughness Tenacità	Application Applicazione
M_10_	Uncoated carbide Metallo duro non rivestito		     	       	- uncoated carbide grade with high toughness - suited on difficult machining conditions - grado non rivestito ad elevata tenacità - adatto a lavorazioni in condizioni difficili
M_20_	Coated carbide Metallo duro rivestito		     	       	- coated carbide grade with high wear and thermal shock resistance - high toughness - good for difficult machining conditions - grado rivestito ad elevata resistenza all'usura e allo shock termico - buona tenacità - ottimo comportamento anche in condizioni difficili



Tool holder for mini boring tool Porta utensili per mini barenì

ENH. MX-04

	Ø 12-25		Ø 4	TOOL STEEL	Ni-PL	R / L			Form B ≤ Ø16	Form A ≥ Ø20	115
--	---------	---	-----	---------------	-------	-------	---	---	-----------------	-----------------	-----

ENH. MX-05

	Ø 12-25		Ø 5	TOOL STEEL	Ni-PL	R / L			Form B ≤ Ø16	Form A ≥ Ø20	116
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ENH. MX-06

	Ø 12-25		Ø 6	TOOL STEEL	Ni-PL	R / L			Form B ≤ Ø16	Form A ≥ Ø20	117
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ENH. MX-07

	Ø 16-25		Ø 7	TOOL STEEL	Ni-PL	R / L			Form B Ø16	Form A ≥ Ø20	118
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Mini boring tool for internal turning

Mini bareni per tornitura interna

ENK.MT_R/L - 9820 - 04

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	119
--	----	------------------	------------------------	---	---	---	---	---	-----

ENK.MT_R/L - 9820 - 05

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	120
--	----	------------------	------------------------	---	---	---	---	---	-----

ENK.MT_R/L - 9820 - 06

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	121
--	----	------------------	------------------------	---	---	---	---	---	-----

ENK.MT_R/L - 9820 - 07

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	122
--	----	------------------	------------------------	---	---	---	---	---	-----

ENK.MT_R/L - 9847 - 04

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	123
--	----	------------------	------------------------	---	---	---	---	---	-----

ENK.MT_R/L - 9847 - 05

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	124
--	----	------------------	------------------------	---	---	---	---	---	-----

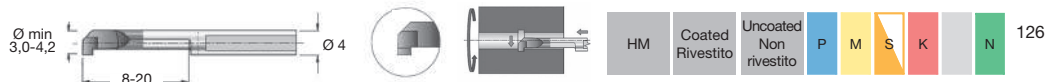
ENK.MT_R/L - 9847 - 06

	HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	125
--	----	------------------	------------------------	---	---	---	---	---	-----

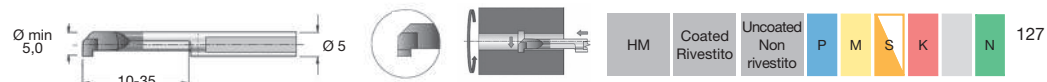


Mini boring tool for internal grooving Mini bareno per scanalatura interna

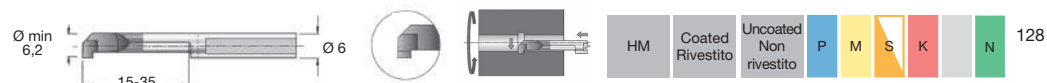
ENK.MG_R/L - 04



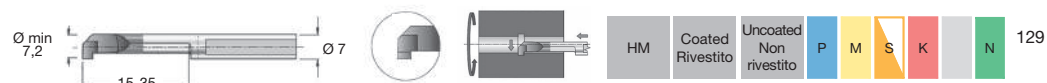
ENK.MG_R/L - 05



ENK.MG_R/L - 06

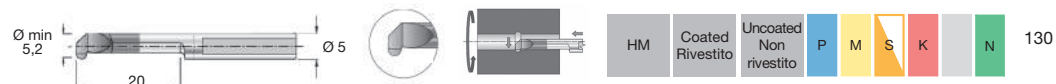


ENK.MG_R/L - 07

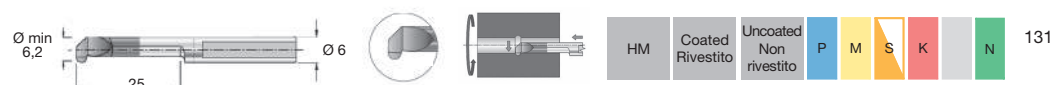


Mini boring tool for internal spherical grooving Mini bareno per scanalatura interna sferica

ENK.MS_R/L - 05

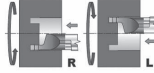
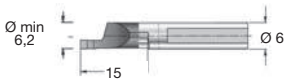


ENK.MS_R/L - 06



Mini boring tool for face grooving - internal
Mini bareno per scanalatura frontale - interna

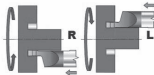
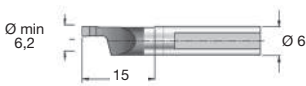
ENK.MI_R/L - 06



HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	132
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Mini boring tool for face grooving - external
Mini bareno per scanalatura frontale - esterna

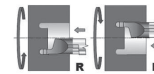
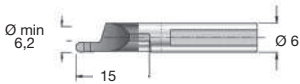
ENK.ME_R/L - 06



HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	133
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Mini boring tool for face spherical grooving - internal
Mini bareno per scanalatura frontale sferica - interna

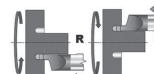
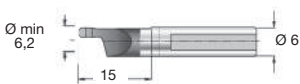
ENK.ML_R/L - 06



HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	134
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Mini boring tool for face spherical grooving - external
Mini bareno per scanalatura frontale sferica - esterna

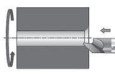
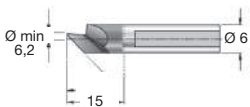
ENK.MF_R/L - 06



HM	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	135
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Mini boring tool for chamfering | Mini bareno per smussatura

ENK.MC_R/L - 06

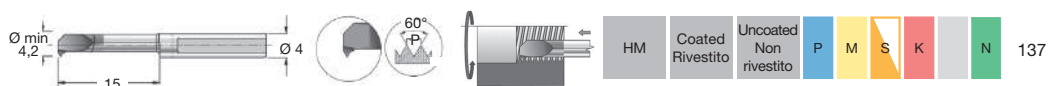


HM	45°	60°	Coated Rivestito	Uncoated Non rivestito	P	M	S	K	N	136
----	-----	-----	------------------	------------------------	---	---	---	---	---	-----

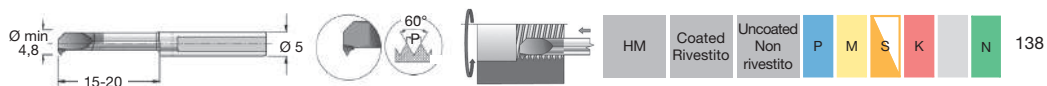


Mini boring tool for internal threading | Mini bareno per filettatura interna

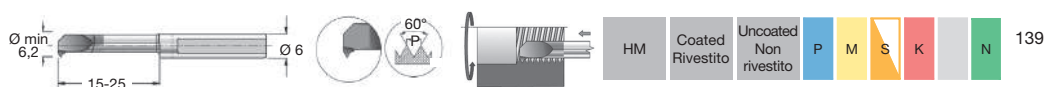
ENK.MZ_R - 0060 - 04



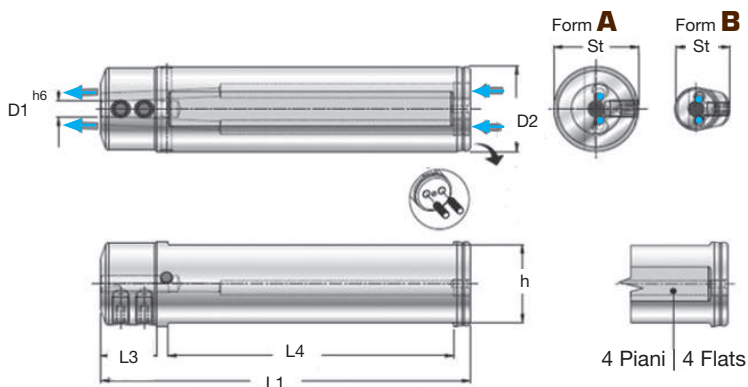
ENK.MZ_R - 0060 - 05



ENK.MZ_R - 0060 - 06



ENK.M_04



Ø 12-25



TOOL
STEEL

Ni-PL

R / L



INTERNAL



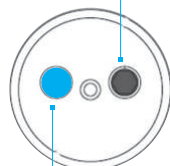
Form B
≤ Ø16

Form A
≥ Ø20

art.	D1 h6	D2	h		L1	L3	L4		St		€
ENH.MX04-UK.012.070	4	12	10		70	14	48		15,5	1	178,00
ENH.MX04-UK.016.075	4	16	14		75	14	53		17,5	2	168,00
ENH.MX04-UK.020.090	4	20	18		90	15	66		19,5	3	178,00
ENH.MX04-UK.022.110	4	22	20		110	15	86		21,5	4	190,00
ENH.MX04-UK.025.110	4	25	23		110	15	86		24,5	5	190,00

Coolant system | Sistema di refrigerazione

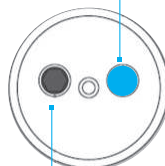
Closed with dowel
Chiuso con grano



Open | Aperto



Open | Aperto

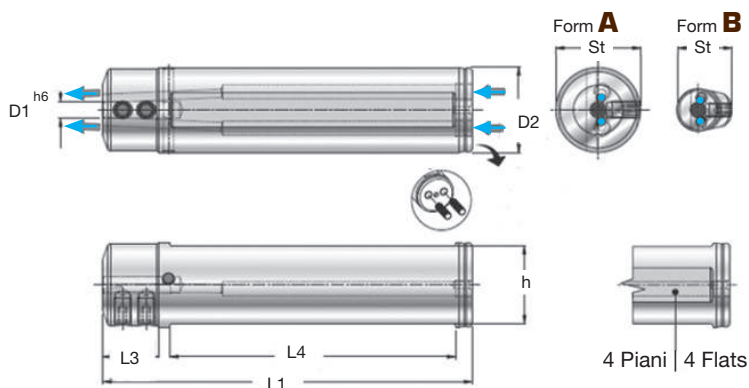


Closed with dowel
Chiuso con grano



	n.2	n.1	
1	SP-DV.M040.080.B020	SP-DV.M030.040.B020	A - W.BL.B020
2	SP-DV.M040.080.B020	SP-DV.M040.040.B020	A - W.BL.B020
3	SP-DV.M040.080.B020	SP-DV.M050.050.B025	A - W.BL.B020
4	SP-DV.M050.080.B025	SP-DV.M050.050.B025	A - W.BL.B025
5	SP-DV.M040.100.B020	SP-DV.M050.050.B025	A - W.BL.B020

ENK.M_05



Ø 12-25



TOOL
STEEL

Ni-PL

R / L



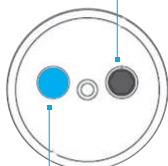
Form B
≤ Ø16

Form A
≥ Ø20

art.	D1 h6	D2	h			L1	L3	L4			St		€
ENH.MX05-UK.012.070	5	12	10			70	15	47			16,0	1	178,00
ENH.MX05-UK.016.075	5	16	14			75	15	52			18,0	2	168,00
ENH.MX05-UK.020.090	5	20	18			90	15	66			19,5	3	178,00
ENH.MX05-UK.022.110	5	22	20			110	15	86			21,5	4	190,00
ENH.MX05-UK.025.110	5	25	23			110	15	86			24,5	5	190,00

Coolant system | Sistema di refrigerazione

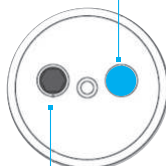
Closed with dowel
Chiuso con grano



Open | Aperto



Open | Aperto

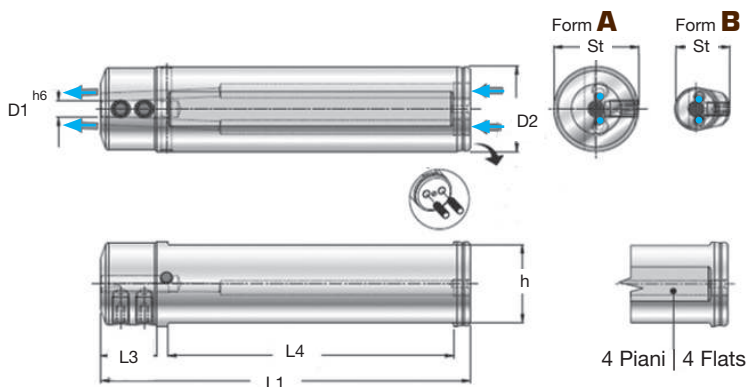


Closed with dowel
Chiuso con grano



	n.2	n.1		
1	SP-DV.M050.080.B025	SP-DV.M030.040.B020	A - W.BL.B020	A - W.BL.B025
2	SP-DV.M050.080.B025	SP-DV.M040.040.B020	A - W.BL.B020	A - W.BL.B025
3	SP-DV.M050.080.B025	SP-DV.M050.050.B025	-	A - W.BL.B025
4	SP-DV.M050.080.B025	SP-DV.M050.050.B025	-	A - W.BL.B025
5	SP-DV.M050.100.B020	SP-DV.M050.050.B025	-	A - W.BL.B025

ENK.M_06



Ø 12-25



TOOL
STEEL

Ni-PL

R / L



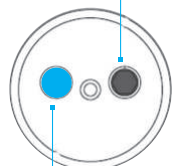
Form B
≤ Ø16

Form A
≥ Ø20

art.	D1 h6	D2	h			L1	L3	L4		St		€
ENH.MX06-UK.012.070	6	12	10			70	15	47		16,5	1	178,00
ENH.MX06-UK.016.078	6	16	14			78	15	55		18,5	2	168,00
ENH.MX06-UK.020.090	6	20	18			90	15	66		19,5	3	178,00
ENH.MX06-UK.022.110	6	22	20			110	15	86		21,5	4	190,00
ENH.MX06-UK.025.110	6	25	23			110	15	85		24,5	5	190,00

Coolant system | Sistema di refrigerazione

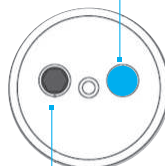
Closed with dowel
Chiuso con grano



Open | Aperto



Open | Aperto

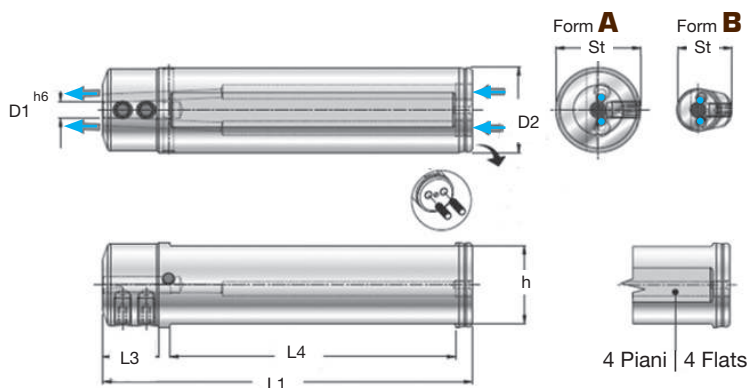


Closed with dowel
Chiuso con grano



	n.2	n.1		
1	SP-DV.M050.080.B025	SP-DV.M030.040.B020	A - W.BL.B020	A - W.BL.B025
2	SP-DV.M050.080.B025	SP-DV.M040.040.B020	A - W.BL.B020	A - W.BL.B025
3	SP-DV.M050.080.B025	SP-DV.M050.050.B025	-	A - W.BL.B025
4	SP-DV.M050.080.B025	SP-DV.M050.050.B025	-	A - W.BL.B025
5	SP-DV.M050.100.B020	SP-DV.M050.050.B025	-	A - W.BL.B025

ENK.M_07



Ø 16-25



TOOL
STEEL

Ni-PL

R / L



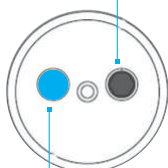
Form B
Ø16

Form A
≥ Ø20

art.	D1 h6	D2	h			L1	L3	L4			St		€
ENH.MX07-UK.016.078	7	16	14			78	15	55			19,0	1	168,00
ENH.MX07-UK.020.090	7	20	18			90	15	66			22,0	2	178,00
ENH.MX07-UK.022.110	7	22	20			110	15	86			21,7	3	190,00
ENH.MX07-UK.025.110	7	25	23			110	15	86			24,5	4	190,00

Coolant system | Sistema di refrigerazione

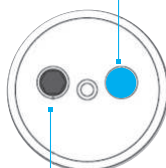
Closed with dowel
Chiuso con grano



Open | Aperto



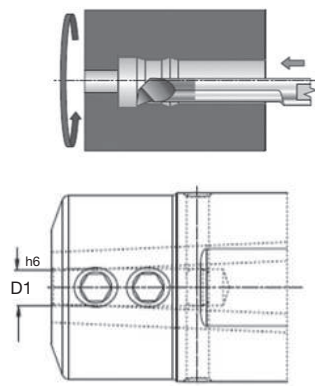
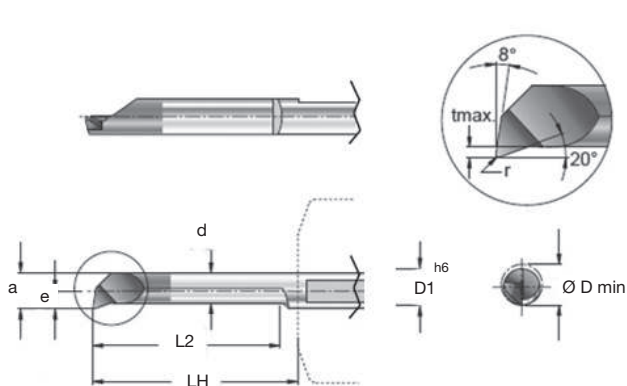
Open | Aperto



Closed with dowel
Chiuso con grano



	n.2	n.1		
1	SP-DV.M050.080.B025	SP-DV.M040.040.B020	A - W.BL.B020	A - W.BL.B025
2	SP-DV.M050.080.B025	SP-DV.M050.050.B025	-	A - W.BL.B025
3	SP-DV.M050.080.B025	SP-DV.M050.050.B025	-	A - W.BL.B025
4	SP-DV.M050.100.B025	SP-DV.M050.050.B025	-	A - W.BL.B025



ENH.MX-04



Right-hand shown
In figura utensile destro

To order right version | per ordinare utensile destro
To order left version | per ordinare utensile sinistro

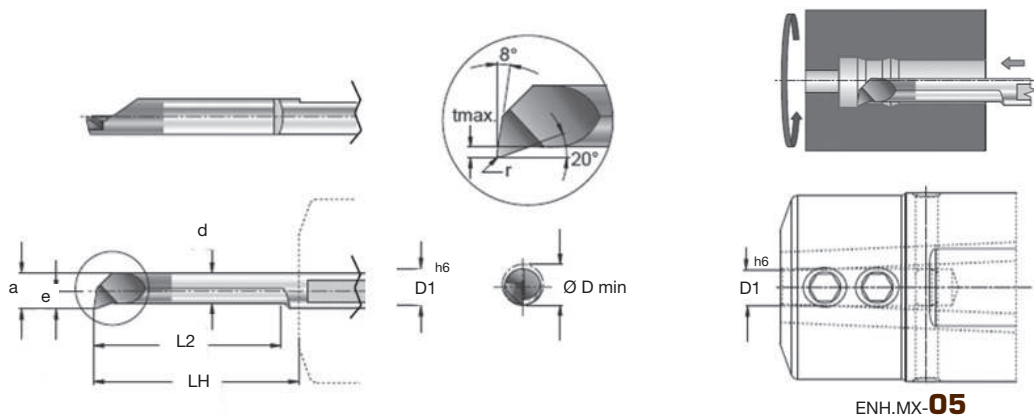
ENK.MT_0R
ENK.MT_0L

ENK.MT20		ap max = 0,18 mm				Geometry and grade application Applicazione geometria e qualità:									P	M	S	K
HM	Coated Rivestito	geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	
		P				P 1.1	80-160	0,030	P 4.2	50-100	0,020	S 2.2	20-60	0,010				
		M				≤850		0,080	12% Cr		0,060	Inconel		0,050				
		S				N/mm²					625							
		K				P 2.3	50-100	0,020	M 2.1	30-80	0,010	K 1.2	40-180	0,040				
						≤1300		0,060	Aust.		0,060			0,100				
						N/mm²												

ENK.MT10		ap max = 0,18 mm				Geometry and grade application Applicazione geometria e qualità:												K	N
HM	Uncoated Non rivestito	geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
						N 1.1	120-160	0,020	N 1.4	80-110	0,040	N 2.1	50-110	0,020					
								0,060	6-12% Si		0,100	Copper		0,060					
		K				N 1.3	90-120	0,030	N 1.5	60-100	0,050	N 4.2	20-80	0,020					
						0,080	>12% Si		0,120	POM/ PVC		0,080							
		N																	

Coated Rivestito	art.		D min	D1 h6	d		L2	LH	e	a	t max	r	€
P	ENK.MT20R/L.UK9820-015.04.032.10		3,2	4	2,55		10	13	1,45	2,95	0,2	0,15	54,00
	ENK.MT20R/L.UK9820-015.04.032.15		3,2	4	2,55		15	18	1,45	2,95	0,2	0,15	58,00
M	ENK.MT20R/L.UK9820-015.04.032.20		3,2	4	2,55		20	23	1,45	2,95	0,2	0,15	69,00
	ENK.MT20R/L.UK9820-015.04.037.10		3,7	4	3,05		10	13	1,70	3,45	0,2	0,15	55,00
S	ENK.MT20R/L.UK9820-015.04.037.15		3,7	4	3,05		15	18	1,70	3,45	0,2	0,15	58,00
	ENK.MT20R/L.UK9820-015.04.037.20		3,7	4	3,05		20	23	1,70	3,45	0,2	0,15	66,00
K	ENK.MT20R/L.UK9820-015.04.037.25		3,7	4	3,05		25	28	1,70	3,45	0,2	0,15	74,00
	ENK.MT20R/L.UK9820-015.04.042.10		4,2	4	3,45		10	13	1,95	3,95	0,3	0,15	55,00
	ENK.MT20R/L.UK9820-015.04.042.15		4,2	4	3,45		15	18	1,95	3,95	0,3	0,15	58,00
	ENK.MT20R/L.UK9820-015.04.042.20		4,2	4	3,45		20	23	1,95	3,95	0,3	0,15	66,00
	ENK.MT20R/L.UK9820-015.04.042.25		4,2	4	3,45		25	28	1,95	3,95	0,3	0,15	69,00

Uncoated Non rivestito	art.		D min	D1 h6	d		L2	LH	e	a	t max	r	€
	ENK.MT10R/L.UK9820-015.04.032.10		3,2	4	2,55		10	13	1,45	2,95	0,2	0,15	51,00
	ENK.MT10R/L.UK9820-015.04.032.15		3,2	4	2,55		15	18	1,45	2,95	0,2	0,15	55,00
	ENK.MT10R/L.UK9820-015.04.032.20		3,2	4	2,55		20	23	1,45	2,95	0,2	0,15	66,00
	ENK.MT10R/L.UK9820-015.04.037.10		3,7	4	3,05		10	13	1,70	3,45	0,2	0,15	52,00
	ENK.MT10R/L.UK9820-015.04.037.15		3,7	4	3,05		15	18	1,70	3,45	0,2	0,15	55,00
	ENK.MT10R/L.UK9820-015.04.037.20		3,7	4	3,05		20	23	1,70	3,45	0,2	0,15	62,00
K	ENK.MT10R/L.UK9820-015.04.037.25		3,7	4	3,05		25	28	1,70	3,45	0,2	0,15	70,00
	ENK.MT10R/L.UK9820-015.04.042.10		4,2	4	3,45		10	13	1,95	3,95	0,3	0,15	52,00
	ENK.MT10R/L.UK9820-015.04.042.15		4,2	4	3,45		15	18	1,95	3,95	0,3	0,15	55,00
	ENK.MT10R/L.UK9820-015.04.042.20		4,2	4	3,45		20	23	1,95	3,95	0,3	0,15	62,00
N	ENK.MT10R/L.UK9820-015.04.042.25		4,2	4	3,45		25	28	1,95	3,95	0,3	0,15	66,00

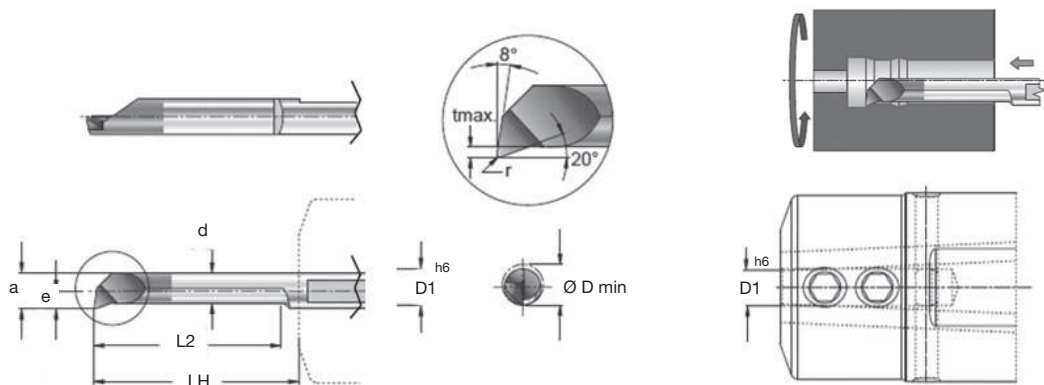


Right-hand shown
In figura utensile destro

To order right version | per ordinare utensile destro
To order left version | per ordinare utensile sinistro

ENK.MT_OR
ENK.MT_OL

ENK.MT20		ap max = 0,23 mm		Geometry and grade application Applicazione geometria e qualità:							P	M	S	K
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
	P													
	M													
	S													
Coated Rivestito	K		P 1.1 ≤850 N/mm²	80-160	0,030 0,080	P 4.2 12% Cr	50-100	0,020 0,060	S 2.2 Inconel 625	20-60	0,010 0,050			
			P 2.3 ≤1300 N/mm²	50-100	0,020 0,060	M 2.1 Aust.	30-80	0,010 0,060	K 1.2	40-180	0,040 0,100			
ENK.MT10		ap max = 0,23 mm		Geometry and grade application Applicazione geometria e qualità:									K	N
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
Uncoated Non rivestito	K		N 1.1	120-160	0,020 0,060	N 1.4 6-12% Si	80-110	0,040 0,100	N 2.1 Copper	50-110	0,020 0,060			
			N 1.3	90-120	0,030 0,080	N 1.5 >12% Si	60-100	0,050 0,120	N 4.2 POM/ PVC	20-80	0,020 0,080			
Coated Rivestito	art.			D min	D1 h6	d		L2	LH	e	a	t max	r	€
P	ENK.MT20R/L.UK9820-020.05.052.10			5,2	5	4,25		10	13	2,45	4,95	0,5	0,20	49,00
	ENK.MT20R/L.UK9820-020.05.052.15			5,2	5	4,25		15	18	2,45	4,95	0,5	0,20	52,00
M	ENK.MT20R/L.UK9820-020.05.052.20			5,2	5	4,25		20	23	2,45	4,95	0,5	0,20	61,00
	ENK.MT20R/L.UK9820-020.05.052.25			5,2	5	4,25		25	28	2,45	4,95	0,5	0,20	68,00
S	ENK.MT20R/L.UK9820-020.05.052.30			5,2	5	4,25		30	33	2,45	4,95	0,5	0,20	76,00
	ENK.MT20R/L.UK9820-020.05.052.35			5,2	5	4,25		35	38	2,45	4,95	0,5	0,20	83,00
K	ENK.MT20R/L.UK9820-020.05.052.40			5,2	5	4,25		40	43	2,45	4,95	0,5	0,20	95,00
Uncoated Non rivestito	art.			D min	D1 h6	d		L2	LH	e	a	t max	r	€
	ENK.MT10R/L.UK9820-020.05.052.10			5,2	5	4,25		10	13	2,45	4,95	0,5	0,20	46,00
	ENK.MT10R/L.UK9820-020.05.052.15			5,2	5	4,25		15	18	2,45	4,95	0,5	0,20	48,00
	ENK.MT10R/L.UK9820-020.05.052.20			5,2	5	4,25		20	23	2,45	4,95	0,5	0,20	57,00
	ENK.MT10R/L.UK9820-020.05.052.25			5,2	5	4,25		25	28	2,45	4,95	0,5	0,20	64,00
	ENK.MT10R/L.UK9820-020.05.052.30			5,2	5	4,25		30	33	2,45	4,95	0,5	0,20	73,00
	ENK.MT10R/L.UK9820-020.05.052.35			5,2	5	4,25		35	38	2,45	4,95	0,5	0,20	80,00
K	ENK.MT10R/L.UK9820-020.05.052.40			5,2	5	4,25		40	43	2,45	4,95	0,5	0,20	92,00
N														



ENH.MX-06



Right-hand shown
In figura utensile destro

To order right version | per ordinare utensile destro
To order left version | per ordinare utensile sinistro

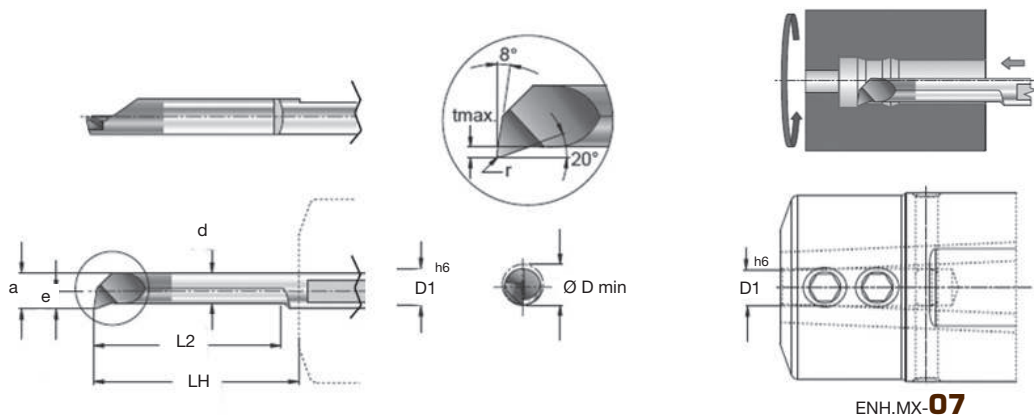
ENK.MT_0R
ENK.MT_0L

ENK.MT20		ap max = 0,23 mm				Geometry and grade application Applicazione geometria e qualità:									P	M	S	K
HM	Coated Rivestito	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
		P			P 1.1	80-160	0,030	P 4.2	50-100	0,020	S 2.2	20-60	0,010					
		M			≤850		0,080	12% Cr		0,060	Inconel		0,050					
		S			N/mm²					625								
		K			P 2.3	50-100	0,020	M 2.1	30-80	0,010	K 1.2	40-180	0,040					
					≤1300		0,060	Aust.		0,060			0,100					
					N/mm²													

ENK.MT10		ap max = 0,23 mm				Geometry and grade application Applicazione geometria e qualità:											K	N
HM	Uncoated Non rivestito	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
					N 1.1	120-160	0,020	N 1.4	80-110	0,040	N 2.1	50-110	0,020					
							0,060	6-12% Si		0,100	Copper		0,060					
		K			N 1.3	90-120	0,030	N 1.5	60-100	0,050	N 4.2	20-80	0,020					
		N				0,080	>12% Si		0,120	POM/ PVC		0,080						

Coated Rivestito	art.	D min	D1 h6	d			L2	LH	e	a	t max	r		€
P	ENK.MT20R/L.UK9820-020.06.062.15	6,2	6	5,25			15	18	2,95	5,95	0,5	0,20		53,00
	ENK.MT20R/L.UK9820-020.06.062.20	6,2	6	5,25			20	23	2,95	5,95	0,5	0,20		61,00
M	ENK.MT20R/L.UK9820-020.06.062.25	6,2	6	5,25			25	28	2,95	5,95	0,5	0,20		69,00
	ENK.MT20R/L.UK9820-020.06.062.30	6,2	6	5,25			30	33	2,95	5,95	0,5	0,20		77,00
S	ENK.MT20R/L.UK9820-020.06.062.35	6,2	6	5,25			35	38	2,95	5,95	0,5	0,20		84,00
	ENK.MT20R/L.UK9820-020.06.062.40	6,2	6	5,25			40	43	2,95	5,95	0,5	0,20		96,00
K														

Uncoated Non rivestito	art.	D min	D1 h6	d			L2	LH	e	a	t max	r		€
	ENK.MT10R/L.UK9820-020.06.062.15	6,2	6	5,25			15	18	2,95	5,95	0,5	0,20		49,00
	ENK.MT10R/L.UK9820-020.06.062.20	6,2	6	5,25			20	23	2,95	5,95	0,5	0,20		58,00
	ENK.MT10R/L.UK9820-020.06.062.25	6,2	6	5,25			25	28	2,95	5,95	0,5	0,20		65,00
	ENK.MT10R/L.UK9820-020.06.062.30	6,2	6	5,25			30	33	2,95	5,95	0,5	0,20		74,00
	ENK.MT10R/L.UK9820-020.06.062.35	6,2	6	5,25			35	38	2,95	5,95	0,5	0,20		81,00
K	ENK.MT10R/L.UK9820-020.06.062.40	6,2	6	5,25			40	43	2,95	5,95	0,5	0,20		93,00
N														



ENH.MX-07



Right-hand shown
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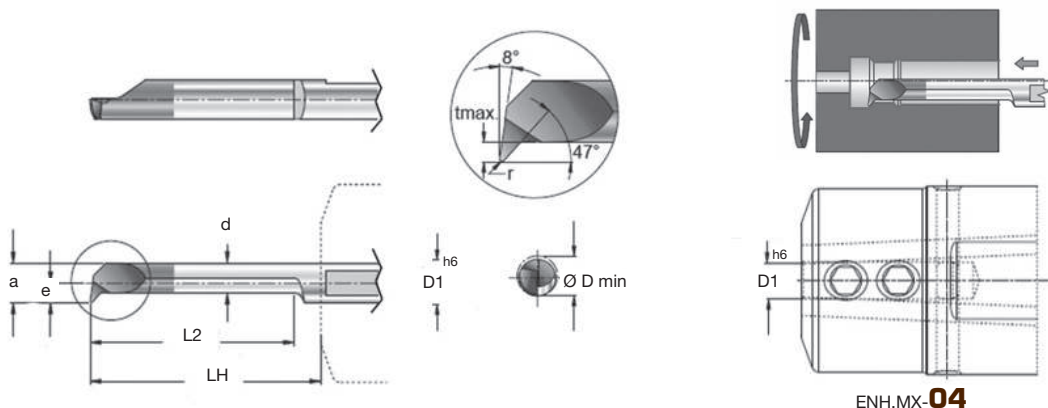
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ENK.MT_OR
ENK.MT_OL

ENK.MT20		ap max = 0,25 mm		Geometry and grade application Applicazione geometria e qualità:									P	M	S	K
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
	P															
	M															
	S															
Coated Rivestito	K		P 1.1 ≤850 N/mm²	80-160	0,030 0,080	P 4.2 12% Cr	50-100	0,020 0,060	S 2.2 Inconel 625	20-60	0,010 0,050					
			P 2.3 ≤1300 N/mm²	50-100	0,020 0,060	M 2.1 Aust.	30-80	0,010 0,060	K 1.2	40-180	0,040 0,100					

ENK.MT10		ap max = 0,25 mm		Geometry and grade application Applicazione geometria e qualità:									P	M	S	K	N
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max			
	P																
	M																
	S																
Uncoated Non rivestito	K		N 1.1	120-160	0,020 0,060	N 1.4 6-12% Si	80-110	0,040 0,100	N 2.1 Copper	50-110	0,020 0,060						
	N		N 1.3	90-120	0,030 0,080	N 1.5 >12% Si	60-100	0,050 0,120	N 4.2 POM/ PVC	20-80	0,020 0,080						

Coated Rivestito	art.		D min	D1 h6	d		L2	LH	e	a	t max	r	€
P	ENK.MT20R/L.UK9820-020.07.072.25		7,2	7	6,25		25	28	3,45	6,95	0,5	0,20	73,00
	ENK.MT20R/L.UK9820-020.07.072.30		7,2	7	6,25		30	33	3,45	6,95	0,5	0,20	81,00
	ENK.MT20R/L.UK9820-020.07.072.35		7,2	7	6,25		35	38	3,45	6,95	0,5	0,20	89,00
	ENK.MT20R/L.UK9820-020.07.072.40		7,2	7	6,25		40	43	3,45	6,95	0,5	0,20	98,00
	ENK.MT20R/L.UK9820-020.07.072.50		7,2	7	6,25		50	53	3,45	6,95	0,5	0,20	114,00
M													
S													
K													

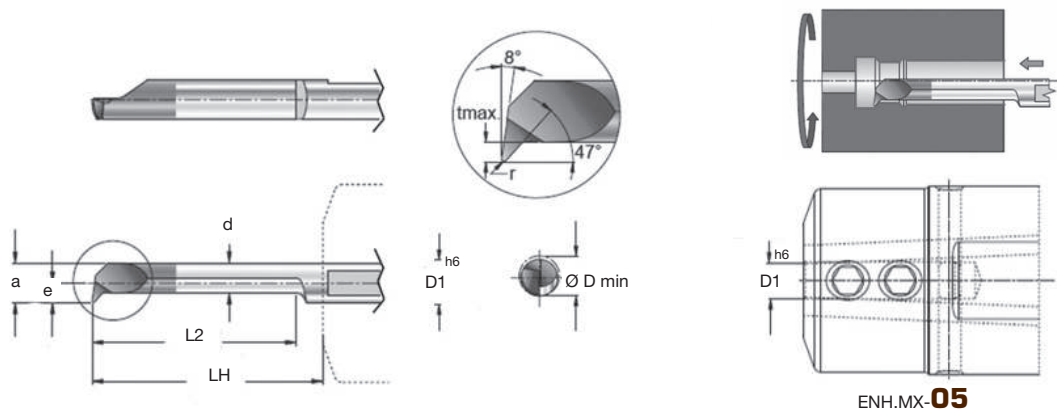


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ENK.MT_0R
ENK.MT_0L

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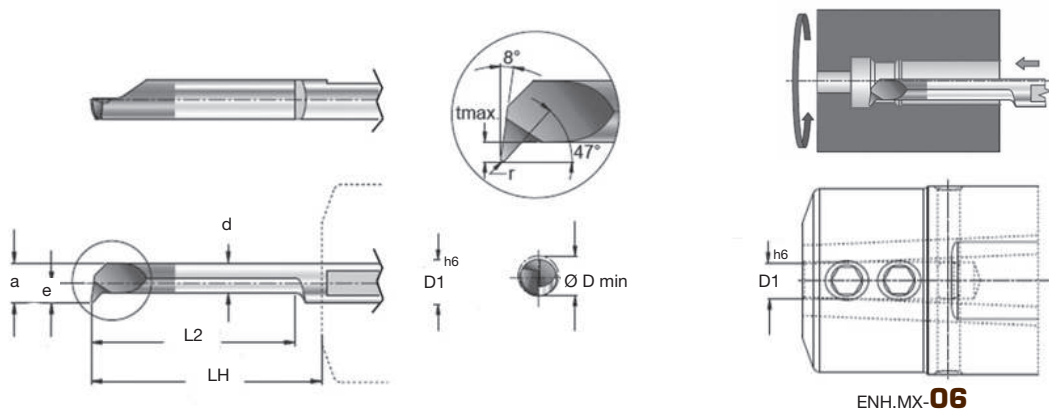
ENK.MT_OR
ENK.MT_OL

ENK.MT20		ap max = 0,18 mm				Geometry and grade application Applicazione geometria e qualità:									P	M	S	K
HM	geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
	P				P 1.1 ≤850 N/mm²	80-160	0,030 0,080	P 4.2 12% Cr	50-100	0,020 0,060	S 2.2 Inconel 625	20-60	0,010 0,050					
	M																	
	S																	
Coated Rivestito	K				P 2.3 ≤1300 N/mm²	50-100	0,020 0,060	M 2.1 Aust.	30-80	0,010 0,060	K 1.2	40-180	0,040 0,100					
																		

ENK.MT10		ap max = 0,18 mm				Geometry and grade application Applicazione geometria e qualità:									P	M	S	K	N
HM	geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max			
					N 1.1	120-160	0,020 0,060	N 1.4 6-12% Si	80-110	0,040 0,100	N 2.1 Copper	50-110	0,020 0,060						
																			
																			
Uncoated Non rivestito	K				N 1.3	90-120	0,030 0,080	N 1.5 >12% Si	60-100	0,050 0,120	N 4.2 POM/ PVC	20-80	0,020 0,080						
	N																		

Coated Rivestito	art.		D min	D1 h6	d		L2	LH	e	a	t max	r	€
P	ENK.MT20R/L.UK9847-015.05.052.15		5,2	5	3,75		15	18	2,45	4,95	1	0,15	58,00
M	ENK.MT20R/L.UK9847-015.05.052.25		5,2	5	3,75		25	28	2,45	4,95	1	0,15	65,00
S													
K													

Uncoated Non rivestito	art.		D min	D1 h6	d		L2	LH	e	a	t max	r	€
	ENK.MT10R/L.UK9847-015.05.052.15		5,2	5	3,75		15	18	2,45	4,95	1	0,15	55,00
	ENK.MT10R/L.UK9847-015.05.052.25		5,2	5	3,75		25	28	2,45	4,95	1	0,15	62,00
K													
N													



ENH.MX-06

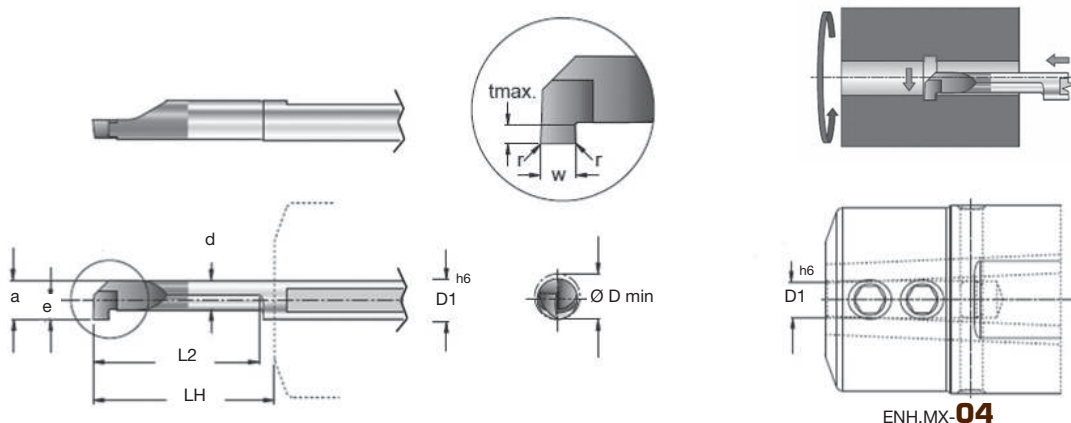


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ENK.MT_0R
ENK.MT_0L

ENK.MT20		ap max = 0,18 mm		Geometry and grade application Applicazione geometria e qualità:									P M S K		
HM	Coated Rivestito	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
				P 1.1 ≤850 N/mm²	80-160	0,030 0,080	P 4.2 12% Cr	50-100	0,020 0,060	S 2.2 Inconel 625	20-60	0,010 0,050			
				P 2.3 ≤1300 N/mm²	50-100	0,020 0,060	M 2.1 Aust.	30-80	0,010 0,060	K 1.2	40-180	0,040 0,100			
ENK.MT10		ap max = 0,18 mm		Geometry and grade application Applicazione geometria e qualità:									K N		
HM	Uncoated Non rivestito	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
				N 1.1	120-160	0,020 0,060	N 1.4 6-12% Si	80-110	0,040 0,100	N 2.1 Copper	50-110	0,020 0,060			
				N 1.3	90-120	0,030 0,080	N 1.5 >12% Si	60-100	0,050 0,120	N 4.2 POM/ PVC	20-80	0,020 0,080			
Coated Rivestito		art.		D min	D1 h6	d		L2	LH	e	a	t max	r		€
P		ENK.MT20R/L.UK9847-015.06.062.20		6,2	6	3,95		20	23	2,95	5,95	1,8	0,15		58,00
M		ENK.MT20R/L.UK9847-015.06.062.30		6,2	6	3,95		30	33	2,95	5,95	1,8	0,15		73,00
S															
K															
Uncoated Non rivestito		art.		D min	D1 h6	d		L2	LH	e	a	t max	r		€
		ENK.MT10R/L.UK9847-015.06.062.20		6,2	6	3,95		20	23	2,95	5,95	1,8	0,15		55,00
		ENK.MT10R/L.UK9847-015.06.062.30		6,2	6	3,95		30	33	2,95	5,95	1,8	0,15		70,00
K															
N															

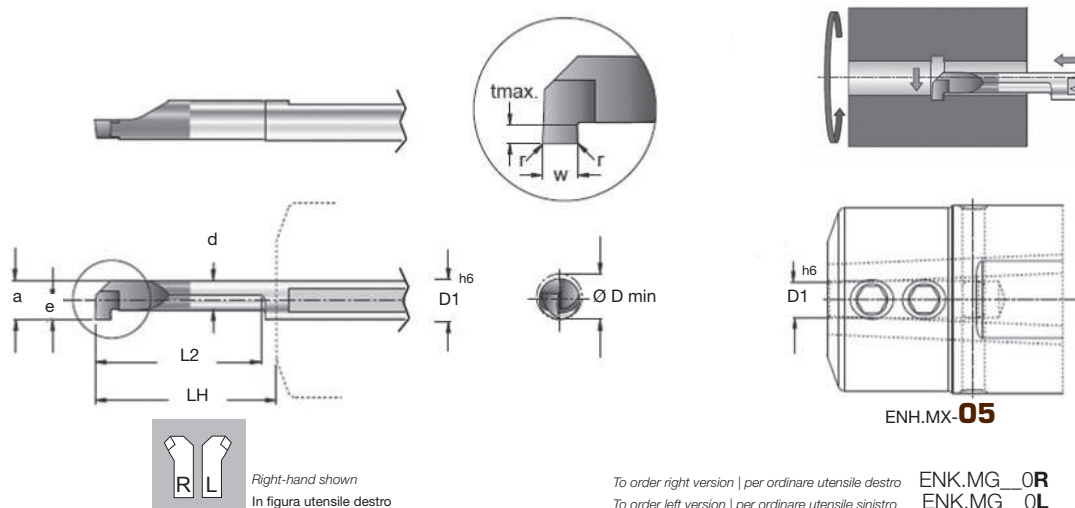


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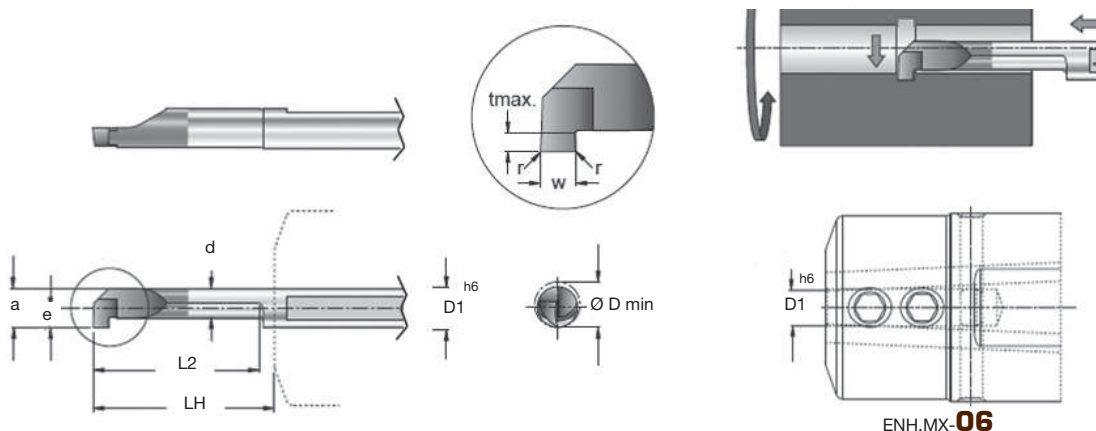
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ENK.MG__OR
ENK.MG__OL

ENK.MG20			Geometry and grade application Applicazione geometria e qualità:									P M S K		
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
			P 1.1 ≤850 N/mm ²	80-160	0,010 0,030	P 4.2 12% Cr	50-100	0,008 0,025	S 2.2 Inconel 625	20-60	0,003 0,015			
Coated Rivestito			P 2.3 ≤1300 N/mm ²	50-100	0,008 0,025	M 2.1 Aust.	30-80	0,005 0,018	K 1.2	40-180	0,010 0,040			
ENK.MG10			Geometry and grade application Applicazione geometria e qualità:									K N		
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
			N 1.1	120-160	0,008 0,025	N 1.4 6-12% Si	80-110	0,010 0,040	N 2.1 Copper	50-110	0,008 0,025			
Uncoated Non rivestito			N 1.3	90-120	0,010 0,030	N 1.5 >12% Si	60-100	0,010 0,040	N 4.2 POM/ PVC	20-80	0,008 0,030			
Coated Rivestito	art.		D min	D1 h6	d	L2	LH	e	a	t max	r	W	€	
	ENK.MG20R/L.UK0070-060.04.030.08		3	4	1,95	8	13	1,35	2,75	0,6	-	0,7	58,00	
	ENK.MG20R/L.UK0100-080.04.042.10		4,2	4	2,95	10	13	1,95	3,95	0,8	-	1,0	55,00	
	ENK.MG20R/L.UK0100-080.04.042.20		4,2	4	2,95	20	23	1,95	3,95	0,8	-	1,0	68,00	
Uncoated Non rivestito	art.		D min	D1 h6	d	L2	LH	e	a	t max	r	W	€	
	ENK.MG10R/L.UK0070-060.04.030.08		3	4	1,95	8	13	1,35	2,75	0,6	-	0,7	55,00	
	ENK.MG10R/L.UK0100-080.04.042.10		4,2	4	2,95	10	13	1,95	3,95	0,8	-	1,0	51,00	
	ENK.MG10R/L.UK0100-080.04.042.20		4,2	4	2,95	20	23	1,95	3,95	0,8	-	1,0	64,00	



ENK.MG20		Geometry and grade application Applicazione geometria e qualità:									P	M	S	K		
		geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
HM	P M S K					P 1.1 ≤850 N/mm²	80-160	0,010 0,030	P 4.2 12% Cr	50-100	0,008 0,025	S 2.2 Inconel 625	20-60	0,003 0,015		
Coated Rivestito				P 2.3 ≤1300 N/mm²	50-100	0,008 0,025	M 2.1 Aust.	30-80	0,005 0,018	K 1.2	40-180	0,010 0,040				
ENK.MG10		Geometry and grade application Applicazione geometria e qualità:													K	N
		geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
HM						N 1.1	120-160	0,008 0,025	N 1.4 6-12% Si	80-110	0,010 0,040	N 2.1 Copper	50-110	0,008 0,025		
Uncoated Non rivestito	K N			N 1.3	90-120	0,010 0,030	N 1.5 >12% Si	60-100	0,010 0,040	N 4.2 POM/ PVC	20-80	0,008 0,030				
Coated Rivestito	art.					D min	D1 h6	d	L2	LH	e	a	t max	r	W	€
P M S K	ENK.MG20R/L.UK0150-100.05.050.10					5	5	3,3	10	13	1,9	4,4	1	-	1,5	52,00
	ENK.MG20R/L.UK0079-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	0,79	52,00
	ENK.MG20R/L.UK0100-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	1,0	52,00
	ENK.MG20R/L.UK0100-100.05.052.20					5,2	5	3,75	20	23	2,45	4,95	1	-	1,0	67,00
	ENK.MG20R/L.UK0100-100.05.052.30					5,2	5	3,75	30	33	2,45	4,95	1	-	1,0	82,00
	ENK.MG20R/L.UK0150-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	1,5	52,00
	ENK.MG20R/L.UK0150-100.05.052.20					5,2	5	3,75	20	23	2,45	4,95	1	-	1,5	67,00
	ENK.MG20R/L.UK0150-100.05.052.25					5,2	5	3,75	25	28	2,45	4,95	1	-	1,5	75,00
	ENK.MG20R/L.UK0150-100.05.052.30					5,2	5	3,75	30	33	2,45	4,95	1	-	1,5	82,00
	ENK.MG20R/L.UK0200-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	2,0	52,00
	ENK.MG20R/L.UK0200-100.05.052.15					5,2	5	3,75	15	18	2,45	4,95	1	-	2,0	61,00
	ENK.MG20R/L.UK0200-100.05.052.20					5,2	5	3,75	20	23	2,45	4,95	1	-	2,0	67,00
	ENK.MG20R/L.UK0200-100.05.052.30					5,2	5	3,75	30	33	2,45	4,95	1	-	2,0	82,00
	art.					D min	D1 h6	d	L2	LH	e	a	t max	r	W	€
	ENK.MG10R/L.UK0150-100.05.050.10					5	5	3,3	10	13	1,9	4,4	1	-	1,5	49,00
	ENK.MG10R/L.UK0079-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	0,79	49,00
	ENK.MG10R/L.UK0100-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	1,0	49,00
	ENK.MG10R/L.UK0100-100.05.052.20					5,2	5	3,75	20	23	2,45	4,95	1	-	1,0	64,00
	ENK.MG10R/L.UK0100-100.05.052.30					5,2	5	3,75	30	33	2,45	4,95	1	-	1,0	79,00
	ENK.MG10R/L.UK0150-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	1,5	49,00
K	ENK.MG10R/L.UK0150-100.05.052.20					5,2	5	3,75	20	23	2,45	4,95	1	-	1,5	64,00
	ENK.MG10R/L.UK0150-100.05.052.25					5,2	5	3,75	25	28	2,45	4,95	1	-	1,5	71,00
	ENK.MG10R/L.UK0150-100.05.052.30					5,2	5	3,75	30	33	2,45	4,95	1	-	1,5	79,00
	ENK.MG10R/L.UK0200-100.05.052.10					5,2	5	3,75	10	13	2,45	4,95	1	-	2,0	49,00
	ENK.MG10R/L.UK0200-100.05.052.15					5,2	5	3,75	15	18	2,45	4,95	1	-	2,0	57,00
	ENK.MG10R/L.UK0200-100.05.052.20					5,2	5	3,75	20	23	2,45	4,95	1	-	2,0	64,00
	ENK.MG10R/L.UK0200-100.05.052.30					5,2	5	3,75	30	23	2,45	4,95	1	-	2,0	79,00

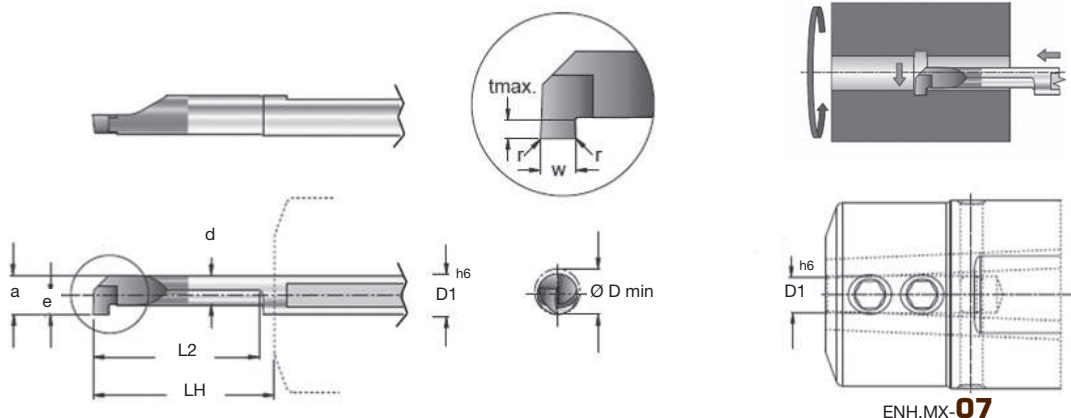


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ENK.MG__OR
ENK.MG__OL

ENK.MG20				Geometry and grade application Applicazione geometria e qualità:									P	M	S	K
HM	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	
	P			P 1.1 ≤850 N/mm²	80-160	0,010 0,030	P 4.2 12% Cr	50-100	0,008 0,025	S 2.2 Inconel 625	20-60	0,003 0,015				
	M															
	S															
Coated Rivestito	K			P 2.3 ≤1300 N/mm²	50-100	0,008 0,025	M 2.1 Aust.	30-80	0,005 0,018	K 1.2	40-180	0,010 0,040				

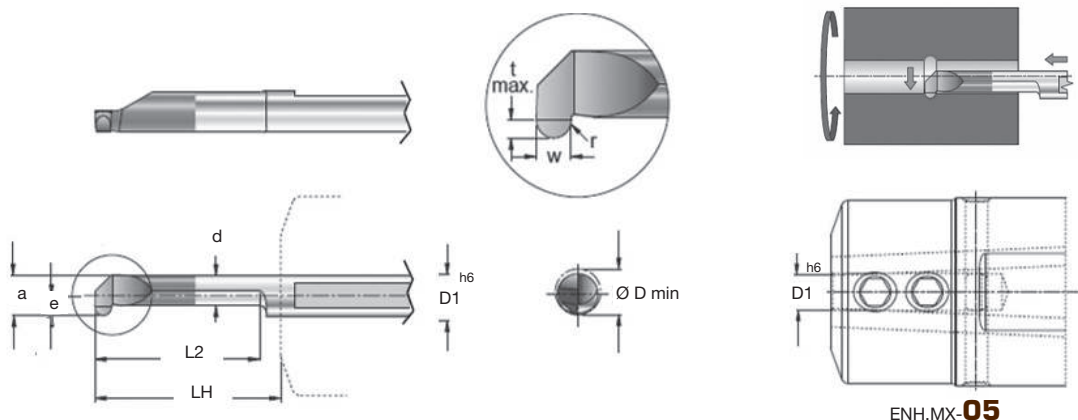


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ENK.MG__OR
ENK.MG__OL

ENK.MG20			Geometry and grade application Applicazione geometria e qualità:									P	M	S	K	
HM	geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
	P	M	S	K	P 1.1 ≤850 N/mm²	80-160	0,010 0,030	P 4.2 12% Cr	50-100	0,008 0,025	S 2.2 Inconel 625	20-60	0,003 0,015			
Coated Rivestito					P 2.3 ≤1300 N/mm²	50-100	0,008 0,025	M 2.1 Aust.	30-80	0,005 0,018	K 1.2	40-180	0,010 0,040			
ENK.MG10			Geometry and grade application Applicazione geometria e qualità:													N
HM	geometry		toughness		Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
					N 1.1	120-160	0,008 0,025	N 1.4 6-12% Si	80-110	0,010 0,040	N 2.1 Copper	50-110	0,008 0,025			
Uncoated Non rivestito					N 1.3	90-120	0,010 0,030	N 1.5 >12% Si	60-100	0,010 0,040	N 4.2 POM/ PVC	20-80	0,008 0,030			
Coated Rivestito	art.				D min	D1 h6	d	L2	LH	e	a	t max	r	W	€	
P	ENK.MG20R/L.UK0100-250.07.072.15				7,2	7	4,25	15	18	3,45	6,95	2,5	-	1,0	63,00	
	ENK.MG20R/L.UK0100-250.07.072.25				7,2	7	4,25	25	28	3,45	6,95	2,5	-	1,0	79,00	
M	ENK.MG20R/L.UK0100-250.07.072.35				7,2	7	4,25	35	38	3,45	6,95	2,5	-	1,0	95,00	
	ENK.MG20R/L.UK0150-250.07.072.15				7,2	7	4,25	15	18	3,45	6,95	2,5	-	1,5	63,00	
S	ENK.MG20R/L.UK0150-250.07.072.25				7,2	7	4,25	25	28	3,45	6,95	2,5	-	1,5	79,00	
	ENK.MG20R/L.UK0150-250.07.072.35				7,2	7	4,25	35	38	3,45	6,95	2,5	-	1,5	95,00	
K	ENK.MG20R/L.UK0200-250.07.072.10				7,2	7	4,25	10	13	3,45	6,95	2,5	-	2,0	56,00	
	ENK.MG20R/L.UK0200-250.07.072.15				7,2	7	4,25	15	18	3,45	6,95	2,5	-	2,0	63,00	
	ENK.MG20R/L.UK0200-250.07.072.20				7,2	7	4,25	20	23	3,45	6,95	2,5	-	2,0	71,00	
	ENK.MG20R/L.UK0200-250.07.072.25				7,2	7	4,25	25	28	3,45	6,95	2,5	-	2,0	79,00	
	ENK.MG20R/L.UK0200-250.07.072.30				7,2	7	4,25	30	33	3,45	6,95	2,5	-	2,0	87,00	
	ENK.MG20R/L.UK0200-250.07.072.35				7,2	7	4,25	35	38	3,45	6,95	2,5	-	2,0	95,00	
Uncoated Non rivestito	art.				D min	D1 h6	d	L2	LH	e	a	t max	r	W	€	
	ENK.MG10R/L.UK0100-250.07.072.15				7,2	7	4,25	15	18	3,45	6,95	2,5	-	1,0	60,00	
	ENK.MG10R/L.UK0100-250.07.072.25				7,2	7	4,25	25	28	3,45	6,95	2,5	-	1,0	76,00	
	ENK.MG10R/L.UK0100-250.07.072.35				7,2	7	4,25	35	38	3,45	6,95	2,5	-	1,0	91,00	
	ENK.MG10R/L.UK0150-250.07.072.15				7,2	7	4,25	15	18	3,45	6,95	2,5	-	1,5	60,00	
	ENK.MG10R/L.UK0150-250.07.072.25				7,2	7	4,25	25	28	3,45	6,95	2,5	-	1,5	76,00	
	ENK.MG10R/L.UK0150-250.07.072.35				7,2	7	4,25	35	38	3,45	6,95	2,5	-	1,5	91,00	
K	ENK.MG10R/L.UK0200-250.07.072.10				7,2	7	4,25	10	13	3,45	6,95	2,5	-	2,0	52,00	
	ENK.MG10R/L.UK0200-250.07.072.15				7,2	7	4,25	15	18	3,45	6,95	2,5	-	2,0	60,00	
	ENK.MG10R/L.UK0200-250.07.072.20				7,2	7	4,25	20	23	3,45	6,95	2,5	-	2,0	68,00	
	ENK.MG10R/L.UK0200-250.07.072.25				7,2	7	4,25	25	28	3,45	6,95	2,5	-	2,0	76,00	
N	ENK.MG10R/L.UK0200-250.07.072.30				7,2	7	4,25	30	33	3,45	6,95	2,5	-	2,0	83,00	
	ENK.MG10R/L.UK0200-250.07.072.35				7,2	7	4,25	35	38	3,45	6,95	2,5	-	2,0	91,00	



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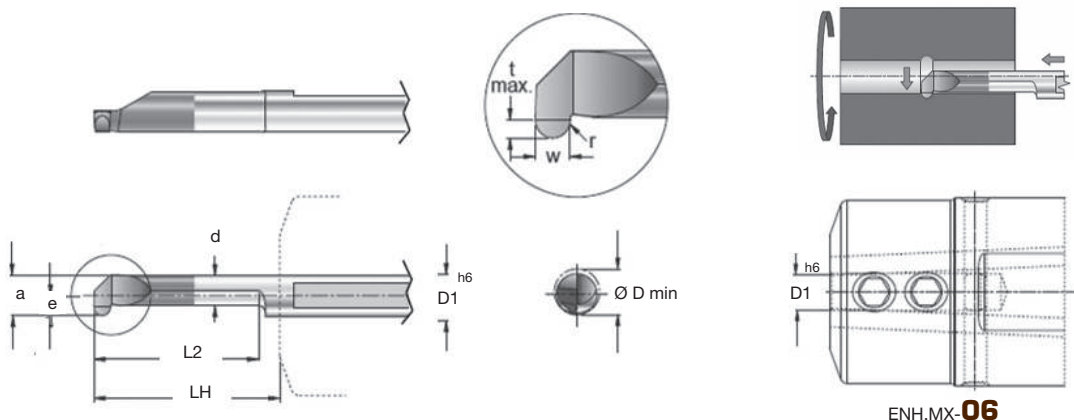
ENK.MS__OR
ENK.MS__OL

ENK.MS20			Geometry and grade application Applicazione geometria e qualità:								
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
			P 1.1 ≤850 N/mm ²	80-160	0,010 0,030	P 4.2 12% Cr	50-100	0,008 0,025	S 2.2 Inconel 625	20-60	0,003 0,015
Coated Rivestito			P 2.3 ≤1300 N/mm ²	50-100	0,008 0,025	M 2.1 Aust.	30-80	0,005 0,018	K 1.2	40-180	0,010 0,040

ENK.MS10			Geometry and grade application Applicazione geometria e qualità:								
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
			N 1.1	120-160	0,008 0,025	N 1.4 6-12% Si	80-110	0,010 0,040	N 2.1 Copper	50-110	0,008 0,025
Uncoated Non rivestito			N 1.3	90-120	0,010 0,030	N 1.5 >12% Si	60-100	0,010 0,040	N 4.2 POM/ PVC	20-80	0,008 0,030

Coated Rivestito	art.	D min	D1 h6	d	L2	LH	e	a	t max	r	W	€
	ENK.MS20R/L.UK0100-100.05.052.20	5,2	5	3,75	20	23	2,45	4,95	1	0,50	1,0	65,00
	ENK.MS20R/L.UK0200-100.05.052.20	5,2	5	3,75	20	23	2,45	4,95	1	1,00	2,0	65,00

Uncoated Non rivestito	art.	D min	D1 h6	d	L2	LH	e	a	t max	r	W	€
	ENK.MS10R/L.UK0100-100.05.052.20	5,2	5	3,75	20	23	2,45	4,95	1	0,5	1,0	62,00
	ENK.MS10R/L.UK0200-100.05.052.20	5,2	5	3,75	20	23	2,45	4,95	1	1	2,0	62,00

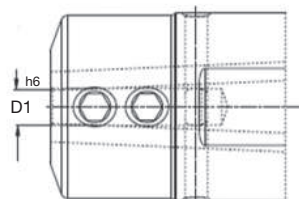
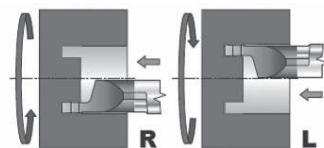
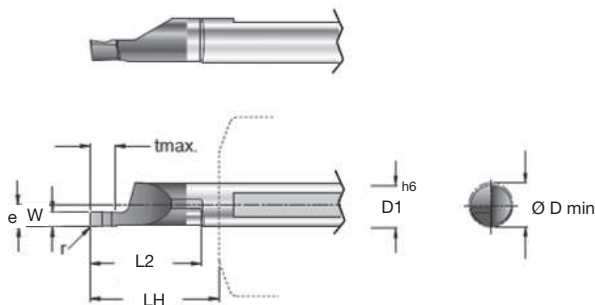


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ENK.MS_0R
ENK.MS_0L

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ENH.MX-06

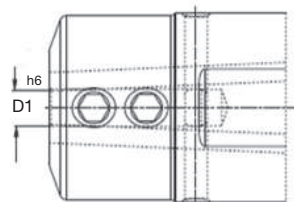
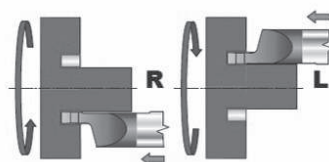


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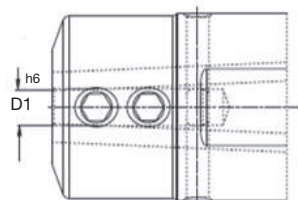
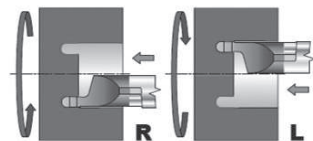
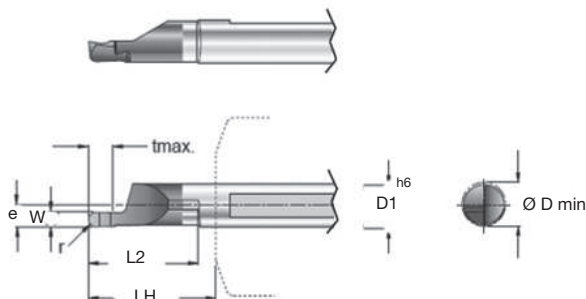
ENK.MI__OR
ENK.MI__OL

ENK.MI20			Geometry and grade application Applicazione geometria e qualità:									P	M	S	K
HM	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	
	P M S K														



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ENK.ME20				Geometry and grade application Applicazione geometria e qualità:							P	M	S	K
HM	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
	P			P 1.1 ≤850 N/mm²	80-160	0,010 0,050	P 4.2 12% Cr	50-100	0,008 0,030	S 2.2 Inconel 625	20-60	0,005 0,020		
	M													
	S													
Coated Rivestito	K			P 2.3 ≤1300 N/mm²	50-100	0,008 0,030	M 2.1 Aust.	30-80	0,005 0,025	K 1.2	40-180	0,012 0,050		
ENK.ME10				Geometry and grade application Applicazione geometria e qualità:									K	N
HM	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
				N 1.1	120-160	0,012 0,035	N 1.4 6-12% Si	80-110	0,012 0,050	N 2.1 Copper	50-110	0,012 0,035		
Uncoated Non rivestito	K			N 1.3	90-120	0,015 0,045	N 1.5 >12% Si	60-100	0,012 0,050	N 4.2 POM/ PVC	20-80	0,010 0,050		
	N													
Coated Rivestito	art.			D min	D1 h6		L2	LH	e		t max	r	W	€
P	ENK.ME20R/L.UK0100-200.06.062.15			6,2	6		15	18	2,95		2	0,15	1,0	79,00
	ENK.ME20R/L.UK0150-300.06.062.15			6,2	6		15	18	2,95		3	0,15	1,5	79,00
	ENK.ME20R/L.UK0200-400.06.062.15			6,2	6		15	18	2,95		4	0,15	2,0	79,00
	ENK.ME20R/L.UK0239-500.06.062.15			6,2	6		15	18	2,95		5	0,15	2,39	79,00
	ENK.ME20R/L.UK0250-500.06.062.15			6,2	6		15	18	2,95		5	0,15	2,5	79,00
	ENK.ME20R/L.UK0300-600.06.062.15			6,2	6		15	18	2,95		6	0,15	3,0	79,00
M														
S														
K														
Uncoated Non rivestito	art.			D min	D1 h6		L2	LH	e		t max	r	W	€
	ENK.ME10R/L.UK0100-200.06.062.15			6,2	6		15	18	2,95		2	0,15	1,0	76,00
	ENK.ME10R/L.UK0150-300.06.062.15			6,2	6		15	18	2,95		3	0,15	1,5	76,00
	ENK.ME10R/L.UK0200-400.06.062.15			6,2	6		15	18	2,95		4	0,15	2,0	76,00
	ENK.ME10R/L.UK0239-500.06.062.15			6,2	6		15	18	2,95		5	0,15	2,39	76,00
	ENK.ME10R/L.UK0250-500.06.062.15			6,2	6		15	18	2,95		5	0,15	2,5	76,00
	ENK.ME10R/L.UK0300-600.06.062.15			6,2	6									



ENH.MX-06



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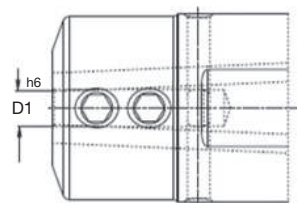
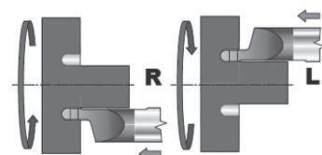
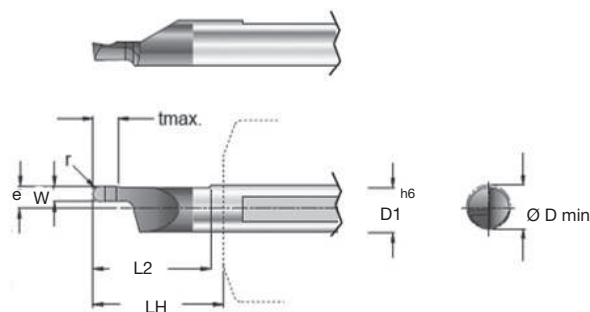
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ENK.ML_0R
ENK.ML_0L

ENK.ML20			Geometry and grade application Applicazione geometria e qualità:						P	M	S	K	
	geometry	toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
HM	P		P 1.1 ≤850 N/mm²	80-160	0,010 0,050	P 4.2 12% Cr	50-100	0,008 0,030	S 2.2 Inconel 625	20-60	0,005 0,020		
	M												
Coated Rivestito	S		P 2.3 ≤1300 N/mm²	50-100	0,008 0,030	M 2.1 Aust.	30-80	0,006 0,025	K 1.2	40-180	0,012 0,050		
	K												

ENK.ML10				Geometry and grade application Applicazione geometria e qualità:								
	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max
HM												
Uncoated Non rivestito												
												

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ENH.MX-06

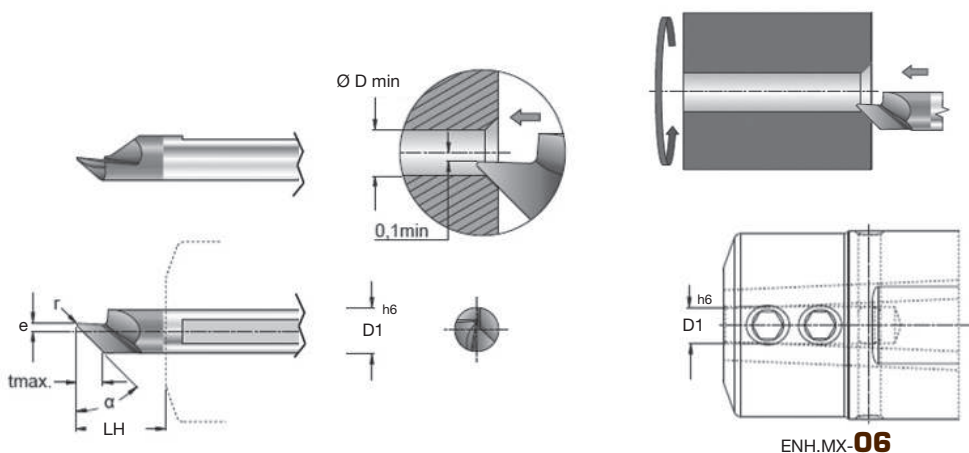


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ENK.MF__OR
ENK.MF__OL

ENK.MF20				Geometry and grade application Applicazione geometria e qualità:									P	M	S	K			
HM	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	
	P			P 1.1 ≤850 N/mm²	80-160	0,010 0,050	P 4.2 12% Cr	50-100	0,008 0,030	S 2.2 Inconel 625	20-60	0,005 0,020							
	M																		
	S																		
	K																		
Coated Rivestito				P 2.3 ≤1300 N/mm²	50-100	0,008 0,030	M 2.1 Aust.	30-80	0,005 0,025	K 1.2	40-180	0,012 0,050							
ENK.MF10				Geometry and grade application Applicazione geometria e qualità:														K	N
HM	geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max	
				N 1.1	120-160	0,012 0,035	N 1.4 6-12% Si	80-110	0,012 0,050	N 2.1 Copper	50-110	0,012 0,035							
	K																		
	N																		
Uncoated Non rivestito				N 1.3	90-120	0,015 0,045	N 1.5 >12% Si	60-100	0,012 0,050	N 4.2 POM/ PVC	20-80	0,010 0,050							
Coated Rivestito	art.				D min	D1 h6		L2	LH	e		t max	r	W	€				
P	ENK.MF20R/L.UK0100-200.06.062.15				6,2	6		15	18	2,95		2	0,50	1,0	82,00				
	ENK.MF20R/L.UK0160-300.06.062.15				6,2	6		15	18	2,95		3	0,8	1,6	82,00				
	ENK.MF20R/L.UK0200-400.06.062.15				6,2	6		15	18	2,95		4	1,00	2,0	82,00				
M																			
S																			
K																			
Uncoated Non rivestito	art.				D min	D1 h6		L2	LH	e		t max	r	W	€				
	ENK.MF10R/L.UK0100-200.06.062.15				6,2	6		15	18	2,95		2	0,5	1,0	78,00				
	ENK.MF10R/L.UK0160-300.06.062.15				6,2	6		15	18	2,95		3	0,8	1,6	78,00				
	ENK.MF10R/L.UK0200-400.06.062.15				6,2	6		15	18	2,95		4	1	2,0	78,00				
K																			
N																			

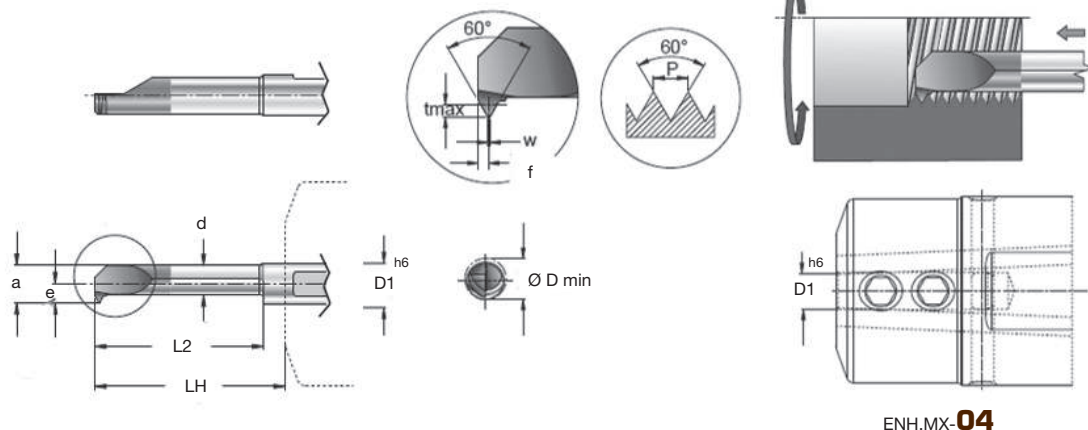


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ENK.MC_0R
ENK.MC_0L

ENK.MC20				Geometry and grade application Applicazione geometria e qualità:											
HM Coated Rivestito		geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
		P			P 1.1 ≤850 N/mm²	80-160	0,010 0,050	P 4.2 12% Cr	50-100	0,008 0,030	S 2.2 Inconel 625	20-60	0,005 0,020		
		M													
		S													
		K													
			P 2.3 ≤1300 N/mm²	50-100	0,008 0,030	M 2.1 Aust.	30-80	0,006 0,025	K 1.2	40-180	0,012 0,050				
ENK.MC10				Geometry and grade application Applicazione geometria e qualità:											
HM Uncoated Non rivestito		geometry		toughness	Mat.	Vt	f min/max	Mat.	Vt	f min/max	Mat.	Vt	f min/max		
					N 1.1	120-160	0,012 0,035	N 1.4 6-12% Si	80-110	0,012 0,050	N 2.1 Copper	50-110	0,012 0,035		
		K													
		N													
			N 1.3	90-120	0,015 0,045	N 1.5 >12% Si	60-100	0,012 0,050	N 4.2 POM/ PVC	20-80	0,010 0,050				
Coated Rivestito	art.				D min	D1			LH	e		t max	r	α	€
P	ENK.MC20R/L.UK0045-350.06.011.13				1	6			13	1,1		3,5	0,20	45°	79,00
M	ENK.MC20R/L.UK0060-400.06.005.13				1	6			13	0,5		4	0,20	60°	79,00
S															
K															
Uncoated Non rivestito	art.				D min	D1			LH	e		t max	r	α	€
	ENK.MC10R/L.UK0045-350.06.011.13				1	6			13	1,1		3,5	0,2	45°	76,00
	ENK.MC10R/L.UK0060-400.06.005.13				1	6			13	0,5		4	0,2	60°	76,00
K															
N															



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ENK.MZ_0R
ENK.MZ_0L

ENK.MZ20			Geometry and grade application Applicazione geometria e qualità:								
HM	geometry		toughness			P			M		
	P	M	S	K		Mat.	Vt	step*	Mat.	Vt	step*
Coated Rivestito	P	M	S	K		P 1.1 ≤850 N/mm²	80-160	7 18	P 4.2 12% Cr	50-100	10 22
	P	M	S	K		P 2.3 ≤1300 N/mm²	50-100	10 22	M 2.1 Aust.	30-80	10 22
ENK.MZ10			Geometry and grade application Applicazione geometria e qualità:								
HM	geometry		toughness			N			K		
	P	M	S	K		Mat.	Vt	step*	Mat.	Vt	step*
Uncoated Non rivestito	P	M	S	K		N 1.1	120-160	10 22	N 1.4 6-12% Si	80-110	7 18
	P	M	S	K		N 1.3	90-120	7 18	N 1.5 >12% Si	60-100	7 18

NUMBER OF RUNS AND FEED DEPTH

- For many applications use an average value and a good starting point
- In the case of tough materials you will have to use a greater number of runs
- As a general rule, less runs are to be preferred to a higher speed

- Detailed steps parameters on page 140

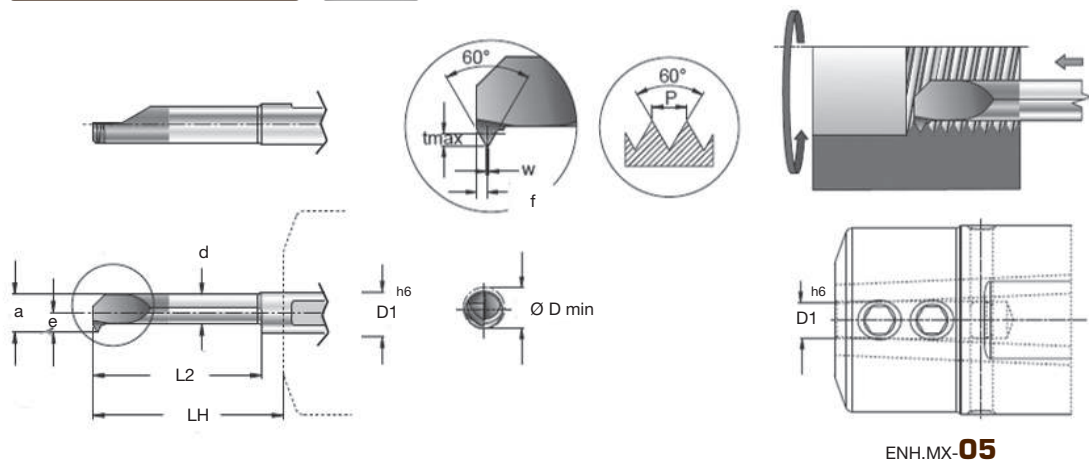
NUMERO DI PASSATE E PROFONDITÀ DI AVANZAMENTO

- Per molte applicazioni utilizzare un valore medio è un buon punto di partenza
- Per materiali tenaci si deve adottare il numero più alto di passate
- Come regola generale minori passate sono da preferirsi a maggiore velocità

- Parametri di passata dettagliati a pag. 140

Coated Rivestito	art.	D min	D1	P min	P max	d	L2	LH	e	a	t max	f	W	€
P	ENK.MZ20R.UK0060-050.04.042.15	4,2	4	0,5	0,7	2,95	15	18	1,95	3,95	0,4	0,35	0,06	61,00
M														
S														
K														

Uncoated Non rivestito	art.	D min	D1	P min	P max	d	L2	LH	e	a	t max	f	W	€
P	ENK.MZ10R.UK0060-050.04.042.15	4,2	4	0,5	0,7	2,95	15	18	1,95	3,95	0,4	0,35	0,06	58,00
M														
S														
K														
N														



Right-hand shown
In figura utensile destro

To order right version | per ordinare utensile destro
To order left version | per ordinare utensile sinistro

ENK.MZ_0R
ENK.MZ_0L

ENK.MZ20			Geometry and grade application Applicazione geometria e qualità:								
HM	geometry	toughness	Mat.	Vt	step*	Mat.	Vt	step*	Mat.	Vt	step*
	P M S K		P 1.1 ≤850 N/mm²	80-160	7 18	P 4.2 12% Cr	50-100	10 22	S 2.2 Inconel 625	20-60	10 22
Coated Rivestito			P 2.3 ≤1300 N/mm²	50-100	10 22	M 2.1 Aust.	30-80	10 22	K 1.2	40-180	7 18

ENK.MZ10			Geometry and grade application Applicazione geometria e qualità:								
HM	geometry	toughness	Mat.	Vt	step*	Mat.	Vt	step*	Mat.	Vt	step*
			N 1.1	120-160	10 22	N 1.4 6-12% Si	80-110	7 18	N 2.1 Copper	50-110	10 22
Uncoated Non rivestito	K N		N 1.3	90-120	7 18	N 1.5 >12% Si	60-100	7 18	N 4.2 POM/ PVC	20-80	10 22



NUMBER OF RUNS AND FEED DEPTH

- For many applications use an average value and a good starting point
- In the case of tough materials you will have to use a greater number of runs
- As a general rule, less runs are to be preferred to a higher speed

- Detailed steps parameters on page 140



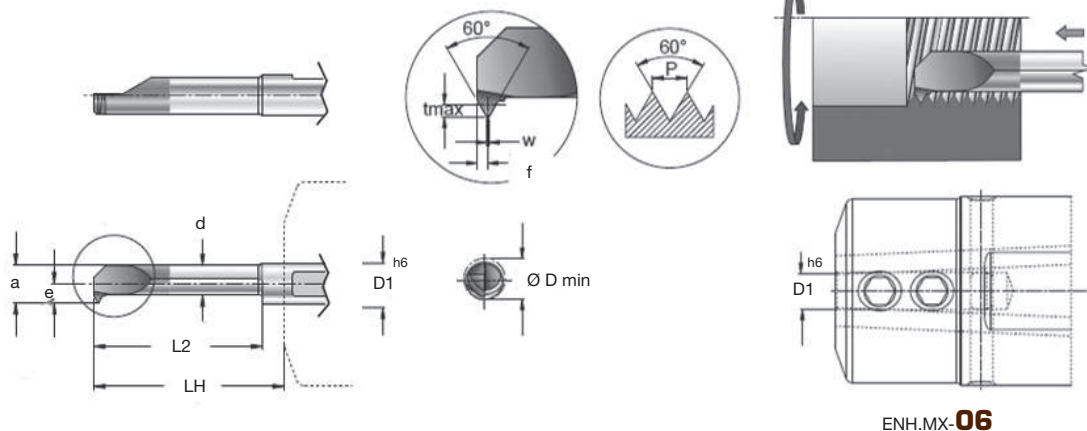
NUMERO DI PASSATE E PROFONDITÀ DI AVANZAMENTO

- Per molte applicazioni utilizzare un valore medio è un buon punto di partenza
- Per materiali tenaci si deve adottare il numero più alto di passate
- Come regola generale minori passate sono da preferirsi a maggiore velocità

- Parametri di passata dettagliati a pag. 140

Coated Rivestito	art.	D min	D1	P min	P max	d	L2	LH	e	a	t max	f	W	€
P	ENK.MZ20R.UK0060-100.05.048.15	4,8	5	1	1,25	3,55	15	18	2,25	4,55	0,7	0,55	0,12	60,00
M	ENK.MZ20R.UK0060-100.05.048.20	4,8	5	1	1,25	3,55	20	23	2,25	4,55	0,7	0,55	0,12	69,00
S														
K														

Uncoated Non rivestito	art.	D min	D1	P min	P max	d	L2	LH	e	a	t max	f	W	€
	ENK.MZ10R.UK0060-100.05.048.15	4,8	5	1	1,25	3,55	15	18	2,25	4,55	0,7	0,55	0,12	57,00
	ENK.MZ10R.UK0060-100.05.048.20	4,8	5	1	1,25	3,55	20	23	2,25	4,55	0,7	0,55	0,12	65,00
K														
N														



Right-hand shown
In figura utensile destro

To order right version | per ordinare utensile destro
To order left version | per ordinare utensile sinistro

ENK.MZ_0R
ENK.MZ_0L

ENK.MZ20				Geometry and grade application Applicazione geometria e qualità:								
HM	geometry		toughness	Mat.	Vt	step*	Mat.	Vt	step*	Mat.	Vt	step*
	P	M		P 1.1	80-160	7 18	P 4.2	50-100	10 22	S 2.2	20-60	10 22
Coated Rivestito	S			P 2.3	50-100	10 22	M 2.1	30-80	10 22	K 1.2	40-180	7 18
	K			≤850 N/mm²			12% Cr			Inconel 625		
				≤1300 N/mm²			Aust.					

ENK.MZ10				Geometry and grade application Applicazione geometria e qualità:								
HM	geometry		toughness	Mat.	Vt	step*	Mat.	Vt	step*	Mat.	Vt	step*
				N 1.1	120-160	10 22	N 1.4	80-110	7 18	N 2.1	50-110	10 22
Uncoated Non rivestito	K			N 1.3	90-120	7 18	N 1.5	60-100	7 18	N 4.2	20-80	10 22
	N						6-12% Si			POM/ PVC		
							>12% Si					



NUMBER OF RUNS AND FEED DEPTH

- For many applications use an average value and a good starting point
- In the case of tough materials you will have to use a greater number of runs
- As a general rule, less runs are to be preferred to a higher speed

- Detailed steps parameters on page 140



NUMERO DI PASSATE E PROFONDITÀ DI AVANZAMENTO

- Per molte applicazioni utilizzare un valore medio è un buon punto di partenza
- Per materiali tenaci si deve adottare il numero più alto di passate
- Come regola generale minori passate sono da preferirsi a maggiore velocità

- Parametri di passata dettagliati a pag. 140

Coated Rivestito		art.	D min	D1	P min	P max	d	L2	LH	e	a	t max	f	W	€
P M S K		ENK.MZ20R.UK0060-125.06.062.15	6,2	6	1,25	1,50	3,95	15	18	2,95	5,95	0,84	0,75	0,16	61,00
		ENK.MZ20R.UK0060-125.06.062.25	6,2	6	1,25	1,50	3,95	25	28	2,95	5,95	0,84	0,75	0,16	61,00
		ENK.MZ20R.UK0060-150.06.062.15	6,2	6	1,50	1,75	3,95	15	18	2,95	5,95	0,98	0,80	0,18	78,00
		ENK.MZ20R.UK0060-150.06.062.25	6,2	6	1,50	1,75	3,95	25	28	2,95	5,95	0,98	0,80	0,18	78,00

Uncoated Non rivestito		art.	D min	D1	P min	P max	d	L2	LH	e	a	t max	f	W	€
		ENK.MZ10R.UK0060-125.06.062.15	6,2	6	1,25	1,50	3,95	15	18	2,95	5,95	0,84	0,75	0,16	58,00
		ENK.MZ10R.UK0060-125.06.062.25	6,2	6	1,25	1,50	3,95	25	28	2,95	5,95	0,84	0,75	0,16	58,00
		ENK.MZ10R.UK0060-150.06.062.15	6,2	6	1,50	1,75	3,95	15	18	2,95	5,95	0,98	0,80	0,18	74,00
		ENK.MZ10R.UK0060-150.06.062.25	6,2	6	1,50	1,75	3,95	25	28	2,95	5,95	0,98	0,80	0,18	74,00

Table for incremental threading step

Tabella incrementale per le passate di filettatura

Passo / Pitch	mm	3,0		2,5		2,0		1,75		1,50		-1,25		1,0		0,80		0,50	
	Gg/TPI	8		10		12 - 11		14		16		20 - 19		24		32		48	
Prof.tot. / total depth (mm)		1,78		1,48		1,17		1,05		0,85		0,75		0,60		0,49		0,31	
Materiale / Material		P1.1	P3.2	P1.1	P3.2	P1.1	P3.2	P1.1	P3.2	P1.1	P3.2	P1.1	P3.2	P1.1	P3.2	P1.1	P3.2	P1.1	P3.2
		K1.2	M2.1	K1.2	M2.1	K1.2	M2.1	K1.2	M2.1	K1.2	M2.1	K1.2	M2.1	K1.2	M2.1	K1.2	M2.1	K1.2	M2.1
		N1.4	N1.1	N1.4	N1.1	N1.4	N1.1	N1.4	N1.1	N1.4	N1.1	N1.4	N1.1	N1.4	N1.1	N1.4	N1.1	N1.4	N1.1
N° di passata* / N° of Step		18	22	17	20	15	17	14	16	12	14	10	12	9	10	8	10	7	10
1		0,25	0,22	0,22	0,20	0,20	0,18	0,20	0,18	0,18	0,15	0,18	0,15	0,15	0,12	0,12	0,10	0,09	0,06
2		0,23	0,20	0,18	0,18	0,18	0,16	0,16	0,15	0,15	0,12	0,15	0,12	0,12	0,12	0,10	0,08	0,07	0,05
3		0,20	0,18	0,18	0,16	0,15	0,14	0,14	0,12	0,12	0,10	0,12	0,10	0,10	0,10	0,10	0,08	0,06	0,04
4		0,18	0,16	0,16	0,14	0,12	0,12	0,10	0,10	0,10	0,10	0,10	0,10	0,08	0,08	0,07	0,07	0,04	0,04
5		0,16	0,14	0,14	0,12	0,10	0,10	0,08	0,08	0,08	0,08	0,08	0,08	0,05	0,06	0,05	0,05	0,02	0,03
6		0,14	0,12	0,12	0,10	0,08	0,08	0,08	0,08	0,06	0,07	0,05	0,06	0,05	0,05	0,03	0,04	0,02	0,03
7		0,12	0,10	0,10	0,08	0,07	0,07	0,06	0,06	0,05	0,06	0,03	0,05	0,03	0,03	0,01	0,03	0,01	0,02
8		0,10	0,09	0,08	0,08	0,06	0,06	0,06	0,06	0,04	0,05	0,02	0,03	0,01	0,02	0,01	0,02	-	0,02
9		0,08	0,08	0,06	0,06	0,05	0,06	0,05	0,05	0,03	0,03	0,01	0,02	0,01	0,01	-	0,01	-	0,01
10		0,08	0,07	0,06	0,06	0,05	0,04	0,05	0,05	0,02	0,03	0,01	0,02	-	0,01	-	0,01	-	0,01
11		0,06	0,06	0,05	0,05	0,04	0,04	0,03	0,03	0,01	0,02	-	0,01	-	-	-	-	-	-
12		0,05	0,06	0,04	0,05	0,03	0,03	0,02	0,03	0,01	0,02	-	0,01	-	-	-	-	-	-
13		0,04	0,05	0,03	0,04	0,02	0,03	0,01	0,02	-	0,01	-	-	-	-	-	-	-	-
14		0,03	0,05	0,02	0,04	0,01	0,02	0,01	0,02	-	0,01	-	-	-	-	-	-	-	-
15		0,02	0,04	0,02	0,03	0,01	0,02	-	0,01	-	-	-	-	-	-	-	-	-	-
16		0,02	0,04	0,01	0,03	-	0,01	-	0,01	-	-	-	-	-	-	-	-	-	-
17		0,01	0,03	0,01	0,02	-	0,01	-	-	-	-	-	-	-	-	-	-	-	-
18		0,01	0,03	-	0,02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19		-	0,02	-	0,01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20		-	0,02	-	0,01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21		-	0,01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22		-	0,01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

 *n° 2 finishing steps included

 *n° 2 passate di finitura comprese



Materials list	
Lista dei materiali	142

Codes index	
Indice dei codici	164

Hardness table	
Tabella delle durezza	165



EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
P Free-machining steels Acciai alta velocità								
1.1	> 500	9			1.0711	9 S 20	-	
	380-570	8			1.0715	9 SMn 28	S 250	
	380-570	8			1.0718	9 SMnPb 28	S 250 Pb	
	360-530	9			1.0721	10 S 20	10 F 1	
	360-530	9			1.0722	10 SPb 20	10 PbF 2	
	380-570	8			1.0723	15 S 20	-	
	390-590	7			1.0736	9 SMn 36	S 300	
	390-580	7			1.0737	9 SMnPb 36	S 300 Pb	
	580-730	8			1.0726	35 S 20	35 MF 4	
	660-800	7			1.0727	45 S 20	45 MF 4	
	740-880	7			1.0728	60 S 20	60 MF 4	
P Alloyed structural steels Acciai da costruzione								
1.1	440-590	24			1.5415	15 Mo 3	15 D 3	
	450-590	21			1.5423	16 Mo 5	-	
	490-640	20			1.5622	14 Ni 6	16 N 6	
	530-710	20			1.5680	12 Ni 19	Z 18 N 5	
	450-660	20			1.7335	13 CrMo 4 4	15 CD 3.5	
	540-690	20			1.7337	16 CrMo 4 4	15 CD 4.5	
	480-630	18			1.7380	10 CrMo 9 10	10 CD 9.10	
	700-850	16			1.7709	21 CrMoV 5 7	-	
	490-640	20			1.7715	14 MoV 6 3	14 Mo 6	
P Construction steels Acciai da costruzione non legati								
1.1	> 500	25			1.0037	St 37-2	-	
	410-560	21			1.0044	St 44-2	E 28-2	
	340-470	25			1.0116	St 37-3	E 24-3; E 24-4	
	410-560	21			1.0144	St 44-3	E 28-3; E 28-4	
	470-610	19			1.0050	St 50-2	A 50-2	
	490-630	21			1.0570	St 52-3	E 36-3; E 36-4	
	570-710	15			1.0060	St 60-2	A 60-2	
	340-470	25		< 82	1.0038	RSt37-2	E24-2 Ne	
P Steel castings Ghise d'acciaio								
1.2	> 380	25			1.0420	GS-38	-	
	700-800				1.1118	GS-24 Mn 6	-	
	480-620	20			1.1120	GS-20 Mn 5	-	
	>500	22			1.5419	GS-22 Mo 4	-	
	>500				1.5633	GS-24 Ni 8	-	
	>500				1.5681	GS-10 Ni 19	-	
	>500				1.6309	GS-20 Mn MoNi 5 5	-	
	<850	10			1.6582	GS-34 CrNiMo 6	-	
	>800	11			1.6748	GS-40 NiCrMo 6 5 6	-	
	>800				1.6750	GS-20 NiCrMo 3 7	-	
	>800				1.6760	GS-22 NiMoCr 5 6	-	
	490-640	20			1.7357	GS-17 CrMo 5 5	-	
	>500	18			1.7379	GS-18 CrMo 9 10	-	

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	220 M 07	-	CF 9 S 22	-	SUM 21	-	1212
	230 M 07	-	CF 9 SMn 28	11SMn28	SUM 22	1912	1213
	-	-	CF 9 SMnPb 2	11SMnPb28	SUM 22 L	1914	12 L 13
	210 M 15	-	CF 10 S 20	10S20	-	-	1108
	-	-	CF 10 SPb 20	10SPb20	-	-	11 L 08
	210 A 15	-	-	F210,F	SUM 32	1922	-
	240 M 07	1B	CF 9 SMn 36	12SMn36	-	-	1215
	-	-	CF 9 SMnPb 36	12SMNPb36	-	1926	12 L 14
	212 M 36	8M	-	F210G	-	1957	1140
	212 M 44	-	-	-	-	1973	1146
	-	-	-	-	-	-	-
	1501-240	-	16 Mo 3	16Mo3	-	2912	A 204 Gr. A
	1503-245-420	-	16 Mo 5	16Mo5	-	-	4520
	-	-	14 Ni 6	15Ni6	-	-	A 350-LF 5
	-	-	-	-	-	-	2515
	1501-620 Gr. 27	-	14 CrMo 4 5	14CrMo45	-	2216	A 182-F11; F12
	1501-620 Gr. 27	-	15 CrMo 4 5	-	-	2216	A 387 Gr. 12 C
	1501-622 Gr. 31; 45	-	12 CrMo 9 10	-	-	2218	A 182-F22
	-	-	-	-	-	-	-
	1503-660-440	-	-	13MoCrV6	-	-	-
	-	-	-	-	STKM 12 C	-	-
	4360-43 B	-	Fe 430 B FN	-	SM 41 B	1412	A 570 Gr. 40
	4360-40 C	-	Fe 360 D FF	-	-	1312; 1313	A 573 Gr. 58
	4360-43 C	-	Fe 430 D FF	-	SM 41 C	1412; 1414	A 573 Gr. 70
	4360-50 B	-	Fe 490	-	SS 50	2172	A 570 Gr. 50
	4360-50 B	-	Fe 510 B; C; D	-	SM 50 YA	2132	-
	4360-SSE; SS	-	Fe 590; Fe 600	-	SM 58	-	-
	4360 40C	1A	-	-	STKM 12A;C	1311	A570.36
	AM 1	-	-	-	-	-	A 27
	-	-	-	-	-	-	-
	-	-	-	F.8310	-	-	-
	245	-	-	-	SCPH 11	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	A 757
	-	-	-	-	-	-	-
	-	24	-	-	SNM 9	2541	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	621	-	-	F-8383	SCPH 21	-	A 217
	622	-	-	-	SCPH 32	-	-



EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
P Case hardening steels Acciai da cementazione								
1.1	<500	15		< 82	1.0301	C 10	AF 34 C 10; XC 10	
	<500	13		< 82	1.0401	C 15	AF 34 C 12; XC 18	
	<500	14		< 82	1.1121	CK 10	XC 10	
	<500	13		< 82	1.1141	CK 15	XC 15; XC 18	
	<500	15		< 82	1.7012	13 Cr 2	-	
	500-700	10		82-96	1.7015	15 Cr 3	12 C 3	
	500-700	11		82-96	1.5732	14 NiCr 10	14 NC 11	
	700-850	10	<24		1.5752	14 NiCr 14	12 NC 15	
	700-850	7	<24		1.5860	14 NiCr 18	-	
	700-850	9	< 24		1.5919	15 CrNi 6	16 NC 6	
	700-850	7	< 24		1.5920	18 NiCr 8	20 NC 6	
	700-850	10	< 24		1.6523	21 NiCrMo 2	20 NCD 2	
	700-850	8	< 24		1.6587	17 CrNiMo 6	18 NCD 6	
	700-850	10	< 24		1.7131	16 MnCr 5	16 MC 5	
	700-850	10	< 24		1.7139	16 MnCrS 5	-	
	700-850	8	< 24		1.7147	20 MnCr 5	20 MC 5	
	700-850	8	< 24		1.7149	20 MnCrS 5	-	
	700-850	10	< 24		1.7262	15 CrMo 5	12 CD 4	
	700-850	8	< 24		1.7264	20 CrMo 5	18 CD 4	
	700-850	8	< 24		1.7271	23 CrMoB 3 3	-	
	500-700	10	< 24		1.7311	20 CrMo 2	-	
	700-850	10	< 24		1.7321	20 MoCr 4	-	
	700-850	10	< 24		1.7323	20 MoCrS 4	-	
	700-850	8	< 24		1.7325	25 MoCr 4	-	
	700-850	8	< 24		1.7326	25 MoCrS 4	-	
	<500	13		< 82	1.0402	C22	CC20	
P Spring steels Acciai per molle								
2.1	< 850	6	< 24		1.0904	55 Si 7	55 S 7	
	< 850	6	< 24		1.0961	60 SiCr 7	60 SC 7	
	< 850	6	< 24		1.1231	CK 67	XC 68	
	< 850	6	< 24		1.1248	CK 75	XC 75	
	< 850	6	< 24		1.1274	CK 101	XC 100	
	< 850	5	< 24		1.7103	67 SiCr 5	-	
	< 850	6	< 24		1.7176	55 Cr 3	55 C 3	
	<850	10	< 24		1.8159	50 CrV 4	50 CV 4	
	< 850	6	< 24		1.5026	55 Si 7	55 S 7	
P Alloyed heat-treatable steels Acciai da bonifica legati								
2.2	<800	22	< 21		1.1133	20 Mn 5	20 M 5	
	<800	11	< 21		1.7735	14 CrMoV 6 9	15 CDV 6	
	<800		< 21		1.3505	100 Cr 6	100 C 6	
	<800	12	< 21		1.5120	38 MnSi 4	-	
	<800	12	< 21		1.5121	46 MnSi 4	-	
	<800	12	< 21		1.5141	53 MnSi 4	-	
	<800	13	< 21		1.5710	36 NiCr 6	35 NC 6	
	<800		< 21		1.6546	40 NiCrMo 2 2	40 NCD 2	
	<800		< 21		1.6565	40 NiCrMo 6	-	

Materials list | Lista dei materiali

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	045 M 10	-	C 10	-	S 10 C	-	1010
	080 M 15	-	C 15; C 16	F.111	-	1350	1015
	045 M 10	-	C 10	-	S 10 C; S 9 CK	1265	1010
	080 M 15	32C	C 15; C 16	C15K	S 15 C; S 15 CK	1370	1015
	-	-	-	-	-	-	-
	523 M 15	-	-	-	SCR 415 (H)	-	5015
	-	-	16 NiCr 11	15NiCr11	SNC 415 (H)	-	3415
	655 M 13	36A	-	-	SNC 815 (H)	-	3310; 9314
	-	-	-	-	-	-	-
	S 107	-	16 CrNi 4	-	-	-	-
	-	-	-	-	-	-	-
	805 M 20	362	20 NiCrMo 2	20NiCrMo2	SNM 220 (H)	2506	8620
	820 A 16	-	18 NiCrMo 7	14NiCrMo13	-	-	-
	527 M 17	-	16 MnCr 5	16MnCr5	SCR 415	2511	5115
	-	-	-	-	-	-	-
	-	-	20 MnCr 5	-	SMnC 420 (H)	-	5120
	-	-	-	-	-	-	-
	-	-	12 CrMo 4	F.155	SCM 415 (H)	-	-
	-	-	-	-	SCM 421	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	050 A 20	2C	C20;C21	F.112	-	1450	1020
	250 A 53	45	55 Si 8	-	-	2085; 2090	9255
	-	-	60 SiCr 8	-	SUP 7	-	9262
	060 A 67	-	C 70	-	-	1770	1070
	060 A 78	-	C 75	-	-	1774; 1778	1078; 1080
	060 A 96	-	-	-	SUP 4	1870	1095
	-	-	-	-	-	-	-
	527 A 60	48	55 Cr 3	-	SUP 9 (A)	2253	5155
	735 A 50	47	51 CrV 4	51CrV4	SUP 10	2230	6150
	250 A 53	-	55 Si 8	-	-	2085; 2090	9255
	120 M 19	-	G 22 Mn 3	-	-	-	1022; 1518
	-	-	-	-	-	-	-
	534 A 99	31	100 Cr 6	-	SUJ 2	2258	52100
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	640 A 35	111A	-	-	SNC 236	-	3135
	311-Type7	-	40 NiCrMo 2 (KB)	40NiCrMo2	SNM 240	-	8740
	311-Type6	-	-	-	SNM 439	-	4340



EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.			
						DIN	AFNOR	
P Alloyed heat-treatable steels Acciai da bonifica legati								
2.2	<800	14	< 21		1.7003	38 Cr 2	38 C 2	
	<800	12	< 21		1.7006	46 Cr 2	42 C 2	
	<800	15	< 21		1.7020	32 Cr 2	-	
	<800	14	< 21		1.7030	28 Cr 4	-	
	<800	14	< 21		1.7033	34 Cr 4	32 C 4	
	<800	14	< 21		1.7218	25 CrMo 4	25 CD 4 S	
	<800	12	< 21		1.7220	34 CrMo 4	35 CD 4	
	<800	10	< 21		1.7223	41 CrMo 4	42 CD 4 TS	
	<800	10	< 21		1.7225	42 CrMo 4	42 CD 4 TS	
	<800	9	< 21		1.7228	50 CrMo 4	-	
	>800-1000	12	> 21 - 30		1.1157	40 Mn 4	35 M 5	
	>800-1000	14	> 21 - 30		1.1165	30 Mn 5	35 M 5	
	>800-1000	10	> 21 - 30		1.1167	36 Mn 5	40 M 5	
	>800-1000	13	> 21 - 30		1.1170	28 Mn 5	20 M 5	
	>800-1000	12	> 21 - 30		1.3561	44 Cr 2		
	>800-1000	12	> 21 - 30		1.3563	43 CrMo 4	-	
	>800-1000	11	> 21 - 30		1.3565	48 CrMo 4	-	
	>800-1000	12	> 21 - 30		1.5120	38 MnSi 4	-	
	>800-1000	12	> 21 - 30		1.5121	46 MnSi 4	-	
	>800-1000	12	> 21 - 30		1.5122	37 MnSi 4	-	
	>800-1000	11	> 21 - 30		1.5131	50 MnSi4	-	
	>800-1000	12	> 21 - 30		1.5141	53 MnSi 4	-	
	>800-1000	11	> 21 - 30		1.5223	42 MnV 7	-	
	>800-1000	13	> 21 - 30		1.5710	36 NiCr 6	35 NC 6	
	>800-1000	12	> 21 - 30		1.5736	36 NiCr 10	30 NC 11	
	>800-1000	11	> 21 - 30		1.5755	31 NiCr 14	18 NC 13	
	>800-1000	11	> 21 - 30		1.6511	36 CrNiMo 4	40 NCD 3	
	>800-1000	13	> 21 - 30		1.6513	28 NiCrMo 4	-	
	>800-1000	14	> 21 - 30		1.7003	38 Cr 2	38 C 2	
	>800-1000	13	> 21 - 30		1.7006	46 Cr 2	42 C 2	
	>800-1000	12	> 21 - 30		1.7030	28 Cr 4	-	
	>800-1000	14	> 21 - 30		1.7033	34 Cr 4	32 C 4	
	>800-1000	13	> 21 - 30		1.7034	37 Cr 4	38 C 4	
	>800-1000	12	> 21 - 30		1.7035	41 Cr 4	42 C 4	
	>800-1000	14	> 21 - 30		1.7218	25 CrMo 4	25 CD 4 S	
	>800-1000	14	> 21 - 30		1.7220	34 CrMo 4	35 CD 4	
	>800-1000		> 21 - 30		1.7223	41 CrMo 4	42 CD 4 TS	
	>800-1000	12	> 21 - 30		1.7225	42 CrMo 4	42 CD 4 TS	
	>800-1000	13	> 21 - 30		1.7228	50 CrMo 4	-	
	>800-1000	13	> 21 - 30		1.7561	42 CrV 6	-	
	>800-1000	11	> 21 - 30		1.7735	14 CrMoV 6 9	15 CDV 6	
	>800-1000	10	> 24 - 30		1.8159	50 CrV 4	50 CV 4	
2.3	>1000 -1300	10	> 30 - 40		1.3563	43 CrMo 4	-	
	>1000 -1300	9	> 30 - 40		1.3565	48 CrMo 4	-	
	>1000 -1300	11	> 30 - 40		1.5120	38 MnSi 4	-	
	>1000 -1300	11	> 30 - 40		1.5121	46 MnSi 4	-	
	>1000 -1300	11	> 30 - 40		1.5122	37 MnSi 4	-	

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	-	-	38 Cr 2	-	-	-	-
	-	-	45 Cr 2	-	-	-	5045
	-	-	-	-	-	-	-
	530 A 30	-	-	-	-	-	5130
	530 A 32	18B	34 Cr 4 (KB)	35Cr4	SCr 430 (H)	-	5132
	1717 CDS 110	-	25 CrMo 4 (KB)	55Cr3	SCM 420; SCM 430	2225	4130
	708 A 37	19B	35 CrMo4	34CrMo4	SCM 432; SCCrM 3	2234	4135; 4137
	708 M 40	19A	41 CrMo 4	42CrMo4	SCM 440	2244	4142; 4140
	708 M 40	19A	41 CrMo 4	F-1252	SCM 440	2244	4142; 4140
	708 A 47	-	-	-	SCM 445 (H)	-	4150
	150 M 36	15	-	-	-	-	1039
	120 M 36	-	-	-	SMn 433 H; SCMn 2	-	1330
	150 M 36	-	-	-	SMn 438 H; SCMn 3	2120	1335
	150 M 28	14A	C 28 Mn	-	SCMn 1	-	1330
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	817 M 40	-	-	-	SNC 836	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	640 A 35	111A	-	-	SNC 236	-	3135
	-	-	35 NiCr 9	-	SNC 631 (H)	-	3435
	653 M 31	-	-	-	SNC 836	-	-
	816 M 40	110	38 NiCrMo 4 (KB)	33NiCrMo4	SNC 836	-	9840
	-	-	-	-	-	-	-
	-	-	38 Cr 2	-	-	-	-
	-	-	45 Cr 2	-	-	-	5045
	530 A 30	-	-	-	-	-	5130
	530 A 32	18B	34 Cr 4 (KB)	35Cr4	SCr 430 (H)	-	5132
	530 A 36	-	38 Cr 4	-	SCr 435 (H)	-	5135
	530 M 40	18	41 Cr 4	42Cr4	SCr 440 (H)	-	5140
	1717 CDS 110	-	25 CrMo 4 (KB)	55Cr3	SCM 420; SCM 430	2225	4130
	708 A 37	19B	35 CrMo4	34CrMo4	SCM 432; SCCrM 3	2234	4135; 4137
	708 M 40	19A	41 CrMo 4	42CrMo4	SCM 440	2244	4142; 4140
	708 M 40	19A	41 CrMo 4	F-1252	SCM 440	2244	4142; 4140
	708 A 47	-	-	-	SCM 445 (H)	-	4150
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	735 A 50	47	51 CrV 4	51CrV4	SUP 10	2230	6150
	-	-	-	-	-	-	-
	817 M 40	-	-	-	SNC 836	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-



EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
P Alloyed heat-treatable steels Acciai da bonifica legati								
2.3	>1000 -1300	10	> 30 - 40		1.5223	42 MnV 7	-	
	>1000 -1300	11	> 30 - 40		1.5710	36 NiCr 6	35 NC 6	
	>1000 -1300		> 30 - 40		1.5736	36 NiCr 10	30 NC 11	
	>1000 -1300	7	> 30 - 40		1.5864	35 NiCr 18	-	
	>1000 -1300	10	> 30 - 40		1.6511	36 CrNiMo 4	40 NCD 3	
	>1000 -1300	9	> 30 - 40		1.6580	30 CrNiMo 8	30 CND 8	
	>1000 -1300	9	> 30 - 40		1.6582	34 CrNiMo 6	35 NCD 6	
	>1000 -1300	12	> 30 - 40		1.7033	34 Cr 4	32 C 4	
	>1000 -1300	11	> 30 - 40		1.7034	37 Cr 4	38 C 4	
	>1000 -1300	11	> 30 - 40		1.7035	41 Cr 4	42 C 4	
	>1000 -1300		> 30 - 40		1.7045	42 Cr 4	42 C 4 TS	
	>1000 -1300	12	> 30 - 40		1.7218	25 CrMo 4	25 CD 4 S	
	>1000 -1300	11	> 30 - 40		1.7220	34 CrMo 4	35 CD 4	
	>1000 -1300	11	> 30 - 40		1.7223	41 CrMo 4	42 CD 4 TS	
	>1000 -1300	10	> 30 - 40		1.7225	42 CrMo 4	42 CD 4 TS	
	>1000 -1300	9	> 30 - 40		1.7228	50 CrMo 4	-	
	>1000 -1300	9	> 30 - 40		1.7361	32 CrMo 12	30 CD 12	
	>1000 -1300	10	> 30 - 40		1.7561	42 CrV 6	-	
	>1000 -1300	9	> 30 - 40		1.7707	30 CrMoV 9	-	
	>1000 -1300	10	> 30 - 40		1.7735	14 CrMoV 6 9	15 CDV 6	
	>1000 -1300	9	> 30 - 40		1.8159	50 CrV 4	50 CV 4	
	>1000 -1300	8	> 30 - 40		1.8161	58 CrV 4	-	
P Unalloyed heat-treatable steels Acciai da bonifica non legati								
2.2	<800	20	< 21		1.0402	C 22	AF 42 C 20	
	<800	19	< 21		1.0406	C 25	AF 50 C 30	
	<800	17	< 21		1.0501	C 35	AF 55 C 35	
	<800	14	< 21		1.0503	C 45	AF 65 C 45	
	<800	16	< 21		1.0511	C 40	AF 60 C 40	
	<800	18	< 21		1.0528	C 30	-	
	<800	20	< 21		1.1151	Ck 22	XC 25; XC 18	
	<800	19	< 21		1.1158	Ck 25	XC 25	
	<800	18	< 21		1.1178	Ck 30	-	
	<800	17	< 21		1.1181	Ck 35	XC 38 H1; XC 32	
	<800	16	< 21		1.1186	Ck 40	XC 42 H1	
	<800	14	< 21		1.1191	Ck 45	XC 42	
	>800-1000	12	> 21 - 30		1.0535	C 55	-	
	>800-1000	13	> 21 - 30		1.0540	C 50	-	
	>800-1000	11	> 21 - 30		1.0601	C 60	CC 55	
	>800-1000	12	> 21 - 30		1.1203	Ck 55	XC 55	
	>800-1000	13	> 21 - 30		1.1206	Ck 50	XC 48 H1	
	>800-1000	11	> 21 - 30		1.1221	Ck 60	XC 60	
P Cold work tool steels Acciai da utensili per lavorazione a freddo								
4.2	760		19		1.2067	100 Cr 6	Y 100 C 6	
	750		99	99	1.2101	62 SiMnCr 4	-	
	760		19		1.2103	58 SiCr 8	-	
	760		19		1.2108	90 CrSi 5	-	
	720			97	1.2162	21 MnCr 5	20 NC 5	

Materials list | Lista dei materiali

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	-	-	-	-	-	-	-
	640 A 35	111A	-	-	SNC 236	-	3135
	-	-	35 NiCr 9	-	SNC 631 (H)	-	3435
	-	-	-	-	-	-	-
	816 M 40	110	38 NiCrMo 4 (KB)	33NiCrMo4	SNC 836	-	9840
	823 M 30	-	30 NiCrMo 8		SNCM 431	-	-
	817 M 40	24	35 NiCrMo 6 (KW)		SNCM 447	2541	4340
	530 A 32	18B	34 Cr 4 (KB)	35Cr4	SCr 430 (H)	-	5132
	530 A 36	-	38 Cr 4	-	SCr 435 (H)	-	5135
	530 M 40	18	41 Cr 4	42Cr4	SCr 440 (H)	-	5140
	530 A 40	-	41 Cr 4	42Cr4	SCr 440	2245	5140
	1717 CDS 110	-	25 CrMo 4 (KB)	55Cr3	SCM 420; SCM 430	2225	4130
	708 A 37	19B	35 CrMo4	34CrMo4	SCM 432; SCCrM 3	2234	4135; 4137
	708 M 40	19A	41 CrMo 4	42CrMo4	SCM 440	2244	4142; 4140
	708 M 40	19A	41 CrMo 4	F-1252	SCM 440	2244	4142; 4140
	708 A 47	-	-	-	SCM 445 (H)	-	4150
	722 M 24	40B	31 CrMo 12	F.124.A	-	2240	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	735 A 50	47	51 CrV 4	51CrV4	SUP 10	2230	6150
	-	-	-	-	-	-	-
	050 A 20	2D	C 20; C 21	F.112	-	1450	1020
	070 M 26	-	C 25	-	-	-	1025
	060 A 35	-	C 35	F.113	-	1550	1035
	080 M 46	-	C 45	F.114	-	1650	1045
	-	-	C 40	-	-	-	1040
	-	-	-	-	-	-	-
	050 A 20	-	C 20	-	S 20 C; S 20 CK	-	1023
	070 M 26	-	C 25	-	S 25 C	-	1025
	-	-	-	-	-	-	-
	080 M 36	-	C 35	-	S 35 C	1572	1035
	080 M 40	-	C 40	-	S 40 C	-	1040
	080 M 46	-	C 45	C45K	S 45 C	1672	1045
	070 M 55	-	C 55	-	-	1655	1055
	-	-	-	-	-	-	-
	080 A 62	43D	C 60	-	-	-	1060
	070 M 55	-	C 50	C55K	S 55 C	-	1055
	080 M 50	-	-	-	-	-	1050
	080 A 62	43D	C 60	-	S 58 C	1665; 1678	1060
	BL 3	-	-	100Cr6	-	-	L 3
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	SCR 420 H	-	-



EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
P Cold work tool steels Acciai da utensili per lavorazione a freddo								
4.2	730			98	1.2210	115 CRV 3	100 C 3	
	730			98	1.2330	35 CrMo 4	34 CD 4	
	750			99	1.2332	47 CrMo 4	42 CD 4	
	760		19		1.2419	105 WC 6	105 WC 13	
	720			97	1.2510	100 MnCrW 4	90 MWCV 5	
	730			98	1.2516	120 W 4	110 WC 20	
	750			99	1.2542	45 WCrV 7	-	
	750			99	1.2550	60 WCrV 7	55 WC 20	
	830		23		1.2721	50 NiCr 13	-	
	670			95	1.2735	15 NiCr 14	10 NC 12	
	710			97	1.2762	75 CrMoNiW 6 7	-	
	750			99	1.2826	60 MnSiCr 4	-	
	760		19		1.2833	100 V 1	Y1 105 V	
	730			98	1.2842	90 MnCrV 8	90 MV 8	
	830		23		1.2080	X 210 Cr 12	Z 200 C 12	
	380			63	1.2341	X 6 CrMo 4	-	
	760		19		1.2363	X 100 CrMoV 5 1	Z 100 CDV 5	
	640-840	18			1.5662	X8 Ni9	9 Ni	
	760		19		1.2379	X 155 CrVMo12 1	Z 160 CDV 12	
	760		19		1.2436	X 210 CrW 12	-	
	760		19		1.2601	X 165 CrMoV 12	-	
P Unalloyed tool steels Acciai da utensili non legato								
4.1	640			93	1.1520	C 70 W1	-	
	640			93	1.1525	C 80 W1	Y1 90; Y1 80	
	640			93	1.1545	C 105 W1	Y1 105	
	640			93	1.1620	C 70 W2	-	
	640			93	1.1625	C 80 W2	Y1 80	
	640			93	1.1645	C105 W2	Y1 105	
	660			94	1.1654	C 110 W	-	
	710			97	1.1663	C 125 W	Y2 120	
	760		19		1.1673	C 135 W	Y2 140	
	640			93	1.1730	C 45 W	Y3 42	
	760		19		1.1740	C 60 W	Y3 55	
	730			98	1.1744	C 67 W	-	
	730			98	1.1750	C 75 W	-	
	570			88	1.1820	C 55 W	-	
	750			99	1.1830	C 85 W	Y3 90	
P Hot work tool steels Acciai da utensili per lavorazione a caldo								
3.1	<770				1.2311	40 CrMnMo 7	-	
	<770				1.2312	40 CrMnMoS 8 6	-	
	<770				1.2711	54 NiCrMoV 6	55 NCDV 6	
	<800				1.2713	55 NiCrMoV 6	55 NCDV 7	
	>800				1.2738	40 CrMnNiMo 8	-	
	<840				1.2744	57 NiCrMoV 77	-	
	>860				1.2764	X 19 NiCrMo 4	-	
	<870				1.2767	X 45 NiCrMo 4	Y 35 NCD 16	
	<770				1.2083	X 42 Cr 13	Z 40 C 14	

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	-	-	107 CrV 3 KU	-	-	-	L 2
708 A 37	-	-	35 CrMo4	-	-	2234	4135
709 M 40	-	-	40 CrMo 4	-	-	2244	4142
-	-	-	107 WvV 5 KU	105WCr5	SKS 31	-	-
BO 1	-	-	95 MnWCr 5 KU	-	SKS 3	2140	O 1
BF 1	-	-	110 W 4 KU	-	-	-	-
BS 1	-	-	45 WCrV 8 KU	45WCrSi8	-	2710	S 1
-	-	-	55 WCrV 8 KU	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	SNC 22	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
BW 2	-	-	102 V 2 KU	-	SKS 43	-	W 210
BO 2	-	-	90 MnVCr 8 KU	-	-	-	O 2
BD 3	-	-	X 210 Cr 13 KU	X210Cr12	SKD 1	-	D 3
-	-	-	-	-	-	-	-
BA 2	-	-	X 100 CrMoV 5 1KU	-	SKD 12	2260	A 2
1501.509	-	-	X 10Ni9	XBNI09	STBL 690	-	A353
BD 2	-	-	X 155 CrVMo 12 1KU	-	SKD 11	-	D 2
-	-	-	X 215 CrW 12 1 KU	X210CrW12	SKD 2	2312	-
-	-	-	X 165 CrMoV 12 KU	X160crMoV12	-	2310	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	C 80 KU	-	-	-	W 108
-	-	-	C 100 KU	-	-	-	W 110
-	-	-	-	-	-	-	-
BW 1B	-	-	C 80 KU	-	SKC 3; SK 5; SK 6	-	W 1
-	-	-	C 100 KU	-	SK 3	-	-
-	-	-	-	-	-	-	-
-	-	-	C 120 KU	-	SK 2	-	W 112
-	-	-	C 140 KU	-	SK 1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	SK 7	-	-
-	-	-	-	-	-	-	-
BW 1A	-	-	-	-	-	-	W 1
-	-	-	-	-	-	-	-
-	-	-	-	-	SK 5	-	-
-	-	-	-	-	-	-	-
-	-	-	35 CrMo8	-	-	-	-
-	-	-	40 CrMnMo 7	F-5302	-	-	-
-	-	-	-	-	-	-	-
Bh 224	-	-	-	F.520.S	SKT 4	-	L 6
-	-	-	-	-	-	-	P20
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	42 NiCrMo 15 7	-	-	-	-
-	-	-	X 41 Cr 13 KU	F-5263	SUS 420 J 2	-	-



Materials list | Lista dei materiali

EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
P Hot work tool steels Acciai da utensili per lavorazione a caldo								
3.1	<800				1.2343	X 38 CrMoV 5 1	Z 38 CDV 5	
	<800				1.2344	X 40 CrMoV 5 1	Z 40 CDV 5	
	<800				1.2365	X 32 CrMoV 3 3	Z 32 CDV 28	
	<800				1.2567	X 30 WCrV 5 3	Z 32 WCV 5	
	<800				1.2581	X 30 WCrV 9 3	Z 30 WCV 9	
	<770				1.2885	X 32 CrMoV 3 3 3	-	
	<840				1.2316	X 36 CrMo 17	-	
	1080	16	>29		Toolox 33	-	-	
	1250	10	43		Hardox 400	-	-	
	1450	13	45		Toolox 44	-	-	
P Nitriding steels Acciai da nitrurazione								
3.2	<1000	14	< 30		1.8504	34 CrAl 6	-	
	<1000	12	< 30		1.8506	34 CrAlS 5	-	
	<1000	14	< 30		1.8507	34 CrAlMo 5	30 CAD 6.12	
	<1000	12	< 30		1.8509	41 CrAlMo 7	40 CAD 6.12	
	>1000	10	> 30		1.8515	31 CrMo 12	30 CD 12	
	>1000	9	> 30		1.8519	31 CrMoV 9	-	
	>1000	10	> 30		1.8521	15 CrMoV 5 9	-	
	>1000	8	>30		1.8523	39 CrMoV 13 9	-	
	>1000	12	> 30		1.8550	34 CrAlNi 7	-	
M Stainless steels - ferritic Acciai inox ferritici								
1.1	400-600	17			1.4002	X 6 CrAl 13	Z 6 CA 13	
	380-560	25			1.4512	X 5 CrTi 12	Z 6 CT 12	
	400-600	19			1.4000	X 6 Cr 13	Z 6 C 13	
	450-600	18			1.4016	X 6 Cr 17	Z 8 C 17	
	500-700	12			1.4742	X 10 CrAlSi 18	Z 10 CAS 18	
	450-630	18			1.4113	X 6 CrMo 17	Z 8 CD 17.01	
	420-600	23			1.4510	X 3 CrTi 17	Z 8 CT 17	
	400-600	20			1.4521	X 2 CrMoTi 18-2	Z 3 CDT 18-02	
	450-650	15			1.4724	X 10 CrAlSi 13	Z 13 C 13	
	520-720	15			1.4762	X 10 CrAl 24	Z 10 CAS 24	
M Stainless steels - austenitic Acciai inox austenitici								
2.1	750-950	40			1.4372	X 12 CrMnNiN 17-7-5	Z 12 CMN 17-07 Az	
	680-880	35			1.4373	X 12 CrMnNiN 18-9-5	-	
	600-950	40			1.4310	X 10 CrNi 18-8; X 12 CrNi 17 7	Z 11 CN 17-08	
	630-850	35			1.4318	X 2 CrNiN 18-7	Z 3 CN 18-07 Az	
	500-700	35			1.4305	X 10 CrNiS 18 9	Z 10 CNF 18.09	
	600-951	36			1.4350	X 5 CrNi18 9	Z 6 CN 18.09	
	520-720	45			1.4301	X 5 CrNi 18 9	Z 6 CN 18.09	
	460-680	45			1.4306	X 2 CrNi 19 11	Z 2 CN 18.10	
	550-750	40			1.4311	X 2 CrNiN 18 10	Z 2 CN 18.10	
	510-710	45			1.4948	X 6 CrNi 18-11	-	
	520-700	45			1.4307	X 2 CrNi 18-9	Z 2 CN 19-09	
	500-750	40			1.4315	X 5 CrNiN 19-9	-	
	500-650	45			1.4303	X 5 CrNi 18 12	Z 8 CN 18.12	
	500-700	33			1.4833	X 12 CrNi 23-13	Z 15 CN 23-13	
	500-700	33			1.4845	X 8 CrNi 25-21	Z 8 CN 25-20	

Materials list | Lista dei materiali

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	BH 11	-	X 37 CrMoV 5 1 KU	F-5317	SKD 6	-	H 11
	BH 13	-	X 40 CrMoV 5 1 1 KU	F-5318	SKD 61	-	H 13
	BH 10	-	X 30 CrMoV 12 27 KU	F-5313	SKD 7	-	H 10
	-	-	X 30 WCrV 5 3 KU	-	SKD 4	-	-
	BH 21	-	X 30 WCrV 9 3 KU	X30WCrV9	SKD 5	-	H 21
	BH 10 A	-	-	F-5314	-	-	-
	-	-	X 38 CrMo 16 1 KU	F-5267	-	-	-
	-	-	-	-	-	-	Toolox 33
	-	-	-	-	-	-	Hardox 400
	-	-	-	-	-	-	Toolox 44
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	905 M 31	-	34 CrAlMo 7	-	-	-	A 355 Cl. D
	905 M 39	41B	41 CrAlMo 7	41CrAlMo7	SACM 645	2940	A 355 Cl. A
	722 M 24	-	31 CrMo 12	-	-	2240	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	897 M 39	40C	39 CrMoV 13 9	-	-	-	-
	-	-	-	-	-	-	-
	405 S 17	-	X 6 CrAl 13	-	SUS 405	2302	405
	409 S 19	-	X 6 CrTi 12	-	SUH 409	-	409
	403 S 17	-	X 6 Cr 13	F.3110	SUS 403	2301	403
	430 S 15	960	X 8 Cr 17	F.3113	SUS 430	2320	430
	430 S 15	60	X 8 Cr 17	F-3153	SUS 430; SUH 21	-	430
	434 S 17	-	X 8 CrMo 17	F.3116	SUS 434	2325	434
	-	-	X 6 CrTi 17	-	SUS 430 LX	-	XM 8; 430 Ti
	-	-	-	F-3123	SUS 444	2326	444
	-	-	-	F-3152	-	-	-
	-	-	X 16 Cr 26	F.3154	SUH 446	-	446
	-	-	-	-	-	-	201
	284 S 16	-	-	-	-	-	202
	301 S 21	-	X10CrNi18-8	F-3517	SUS 301	2331	301
	-	-	-	-	-	-	301LN
	303 S 21	58M	X 10 CrNi 18 9	F.3508	SUS 303	2346	303
	304 S 31	58E	X 5 CrNi 18 10	F.3551	SUS 302	-	304
	304 S 15	58E	X 5 CrNi 18 10	F.3551	SUS 304	2332; 2333	304; 304 H
	304 S 12	-	X 2 CrNi 18 11	F.3503	SCS 19	2352; 2333	304 L
	304 S 62	-	X 2 CrNiN 18 11	-	SUS 304 LN	2371	304 LN
	304 S 50	-	-	-	-	-	304H
	-	-	-	-	-	-	304 L
	-	-	-	-	-	-	304 N
	305 S 19	-	X 8 CrNi 19 10	-	SUS 305	-	308; 305
	309 S 24	-	X 6 CrNi 23 14	-	SUS 309S	-	309 S
	310 S 24	-	X 6 CrNi 25 20	F.331	SUS 310S	2361	310 S



EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.			
						DIN	AFNOR	
M	Stainless steels - austenitic Acciai inox austenitici							
2.1	550-750	30			1.4841	X 15 CrNiSi 25-21	Z 15 CNS 25-20	
	520-680	40			1.4401	X 5 CrNiMo 18 10	Z 6 CND 17.11	
	530-730	40			1.4436	X 5 CrNiMo 17 13 3	Z 6 CND 17.12	
	520-680	40			1.4404	X 2 CrNiMo 17 13 2	Z 2 CND 17.12	
	520-700	40			1.4435	X 2 CrNiMo 18 14 3	Z 2 CND 17.13	
	520-700	40			1.4432	X 2 CrNiMo 17-12-3	Z 3 CND 17-02-03	
	580-780	40			1.4406	X 2 CrNiMoN 17 12 2	Z 2 CND 17.12 AZ	
	580-780	35			1.4429	X 2 CrNiMoN 17 13 3	Z 2 CND 17.13 AZ	
	490-740	40			1.4573	X 10 CrNiMoTi 18 12	-	
	520-690	40			1.4571	X 6 CrNiMoTi 17 12 2	Z 6 CNT 17.12	
	520-720	40			1.4580	X 6 CrNiMoNb 17 12 2	Z 6 CNDNb 17.12	
	550-700	35			1.4438	X 2 CrNiMo 18 16 4	Z 2 CND 19.15	
	580-780	35			1.4439	X 2 CrNiMoN 17-13-5	Z 3 CND 18-14-05 Az	
	490-740	40			1.4583	X 10 CrNiMoNb 18 12	-	
	500-720	40			1.4541	X 6 CrNiTi 18 10	Z 6 CNT 18.10	
	500-720	40			1.4878	X 8 CrNiTi 18-10	Z 6 CNT 18-10	
	500-720	40			1.4550	X 6 CrNiNb 18 10	Z 6 CNNb 18.10	
	500-700	40			1.4563	X 1 NiCrMoCu 31-27-4	Z 2 NCDU 31-27	
	520-730	35			1.4539	X 1 NiCrMoCu 25-20-5	Z 2 NCDU 25-20	
	550-750	30			1.4864	X12NiCrSi35-16	Z 20 NCS 33-16	
620-880	20			1.4460	X 8 CrNiMo 27 5	Z 5 CND 27-05		
500-740	30			1.4546	X 5 CrNiNb 18 10	Z 6 CNNb 18.10		
M	Stainless steels - DUPLEX Acciai inox DUPLEX							
3.1	340-950	20			1.4462	X 2 CrNiMoN 22-5-3	Z 3 CND 22-05 Az	
	630-850	20			1.4362	X 2 CrNiN 23-4	Z 3 CN 23-04 Az	
	730-1000	15			1.4410	X 2 CrNiMoN 25-7-4	Z 3 CND 25-06	
	730-1000	17			1.4507	X 2 CrNiMoCuN 25-6-3	Z 3 CNDU 25-06	
	730-1000	17			1.4507	X 2 CrNiMoCuN 25-6-3	Z 3 CNDU 25-06	
M	Stainless steels - martensitic Acciai inox martensitici							
1.2	>600	20			1.4006	X 10 Cr 13	Z 12 C 13	
	650-850	12			1.4005	X 12 CrS 13	Z 12 CF 13	
	>700	15			1.4021	X 20 Cr 13	Z 20 C 13	
	>740	15			1.4028	X 30 Cr 13	Z 30 C 13	
	>760	12			1.4031	X 38 Cr 13	Z 40 C 14	
	>780	12			1.4034	X 46 Cr 13	Z 40 CM	
	>850	12			1.4116	X 50 CrMoV 15	Z 50 CD 15	
	>900	12			1.4122	X 39 CrMo 17-1	Z 38 CD 16-01	
	780-1100	11			1.4313	X 5 CrNi 13 4	Z 5 CN 13.4	
	840-1100	14			1.4418	X 4 CrNiMo 6-5-1	Z 6 CND 16-05-01	
	>650	14			1.4024	X15Cr13	Z 12 C 13 M	
	640-840	11			1.4104	X 14 CrMoS 17	Z 13 CF 17	
	750-950	14			1.4057	X 17 CrNi 16 2	Z 15 CN 16.02	
					1.4747	X 80 CrNiSi 20	Z 80 CSN 20.02	
		<900			1.4125	X 105 CrMo 17	Z 100 CD 17	
M	Stainless steels - hardened Acciai inox induriti							
1.3	>1275	5			1.4542	X5CrNiCuNb16-4	Z 7 CNU 15-05	
	>1030	19			1.4568	X7CrNiAl17-7	Z 9 CNA 17-07	

Materials list | Lista dei materiali

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	314 S 25	-	-	F.3310	SUH 310	-	314
	316 S 16	58J	X 5 CrNiMo 17 12	F.3543	SUS 316	2347	316
	316 S 16	-	X 5 CrNiMo 17 13	F.3538	SUS 316	2343	316
	316 S 11	-	X 2 CrNiMo 17 12	F.3533	SUS 316 L	2348	316 L
	317 S 12	-	X 2 CrNiMo 17 13	-	SCS 16; SUS 316 L	2353	316 L
	316 S 13	-	X 2 CrNiMo 17-12-3	F-3537	-	-	316 L
	316 S 61	58C	X 2 CrNiMoN 17 12	F-3542	SUS 316 LN	-	316 LN
	316 S 62	-	X 2 CrNiMoN 17 13	F-3543	SUS 316 LN	2375	316 LN
	320 S 33	-	X 6 CrNiMoTi 17 13	-	SUS 316 Ti	-	316 Ti
	320 S 31	58J	X 6 CrNiMoTi 17 12	F.3535	SUS 316 Ti	2350	316 Ti
	318 S 17	-	X 6 CrNiMoNb 17 12	F.3536	-	-	316 Cb
	317 S 12	-	X 2 CrNiMo 18 15	F-3539	SUS 317 L	2367	317 L
	-	-	-	F-3544	-	-	317 LMN
	-	-	X 6 CrNiMoNb 17 13	-	-	-	318
	321 S 12	58B	X 6 CrNiTi 18 11	F.3553; F.3523	SUS 321	2337	321
	321 S 31	-	-	-	SUS 321	-	321 H
	347 S 17	58F	X 6 CrNiNb 18 11	F.3552; F.3524	SUS 347	2338	347
	-	-	-	-	-	2584	B 668
	904 S 13	-	-	-	-	2562	904 L
	NA 17	-	-	F.3313	SUH 330	-	330
	-	-	-	F-3552	SUS 329 J 1	2324	329
	347 S 18	58F	X 6 CrNiNb 18 11	F-3524	SUS 347	2338	348
	318 S 13	-	-	-	SUS 329J3L	2377	2205
	-	-	-	-	-	2327	2304
	-	-	-	-	SCS 14A	2328	2507
	-	-	-	-	-	-	255
	-	-	-	-	-	-	255
	410 S 21	56A	X 12 Cr 13	F.3401	SUS 410	2302	410; CA-15
	416 S 21	-	X 12 CrS 13	-	SUS 416	2380	416
	420 S 37	-	X 20 Cr 13	-	SUS 420 J 1	2303	420
	420 S 45	-	X 30 Cr 13	-	SUS 420 J 2	2304	420
	-	-	X 40 Cr 14	-	SUS 420 J 2	2304	420
	420 S 45	56D	X 40 Cr 14	F.3405	SUS 420 J 2	2304	420
	-	-	-	F-3422	-	-	-
	-	-	-	-	-	-	-
	425 C 11	-	X 6 CrNi 13 04	-	SCS 5	2385	CA 6-NM
	-	-	-	-	-	2387	-
	420 S 29	56B	-	-	SUS 410J1	-	420
	-	-	X 14 CrS 17	F-3431	SUS 430 F	2383	430 F
	431 S 29	57	X 16 CrNi 16	F-3427	SUS 431	2321	431
	443 S 65	59	X 80 CrSiNi 20	F.320.B	SUH 4	-	HNV 6
	-	-	X 105 CrMo 17	-	SUS 440 C	-	440 C
	-	-	-	-	SCS 630	-	630
	301 S 81	-	-	-	SUS 631	2388	631



Materials list | Lista dei materiali

EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
S Nickel- /Cobalt- alloys Leghe nichel/cobalto resistenti al calore								
2.1	900-1100	14			1.4718	X 45 CrSi 9 3	Z 45 CS 9	
	500-750	30			1.4828	X 15 CrNiSi 20 12	Z 15 CNS 20.12	
	550-800	30			1.4841	X 15 CrNiSi 25 20	Z 15 CNS 25.20	
	500-750	35			1.4845	X 12 CrNi 25 21	Z 12 CN 25.20	
	550-800	30			1.4864	X 12 NiCrSi 36 16	Z 12 NCS 37.18	
	950-1200	8			1.4871	X 53 CrMnNiN 21 9	Z 52 CMN 21.09	
	500-750	30			1.4876	X 10 NiCrAlTi 33 20	Z 8 NC 32.21	
	500-750	40			1.4878	X 12 CrNiTi 18 9	Z 6 CNT 18.12 (B)	
	500-700	35			2.4360	NiCu30Fe	Nu 30	
	620-850	17			2.4375	NiCu30Al	Nu 30 AT	
	>690	40			2.4685	G-NiMo28	-	
	>740	42			2.4610	NiMo16Cr16Ti	-	
	>760	40			2.4617	G-NiMo30	-	
	700-800	26			2.4630, 2.4951	NiCr20Ti	NC 20 T	
	800-1000	12			2.4631	NiCr20TiAl	-	
2.2	1200	17			2.4632	NiCr20Co18Ti	-	
	1180	25			2.4634	NiCo20Cr15MoAlTi	-	
	<770	15			2.4662	NiCr13Mo6Ti3	-	
	900-1200				2.4670	-	-	
	900-1200				2.4674	-	-	
	1270	23			2.6554	-	-	
	890	50			2.4856	NiCr22Mo9Nb	NC 22 FeDNb	
2.3	<1400	25			2.4668	NiCr19FeNbMo	NC 19Fe Nb	
S Pure titanium, Titanium alloys Titanio puro, Leghe di titanio								
1.1	290-410	30			3.7025	Ti99.5 / Ti Gr.1	-	
1.2	380-540	20			3.7035	Ti99.4 / Ti Gr.2	-	
	460-590	18			3.7055	Ti99.3 / Ti Gr.3	-	
	540-740	16			3.7065	Ti99.2 / Ti Gr.4	-	
	390-540	20			3.7235	Ti 2 Pd / Ti Gr.2Pd	-	
1.3	>890	>10			3.7165	TiAl6V4 / Ti Gr. 5	T-A6V	
	>1000	9			3.7185	TiAl 4 Mo 4 Sn 2	-	
K Cast iron - lamellar graphite Ghise con grafite lamellare								
1.1	100-200				0.6010	EN-JL 100 (GG-10)	Ft 10 D	
	150-250				0.6015	EN-JL 150 (GG-15)	Ft 15 D	
	200-300				0.6020	EN-JL 200 (GG-20)	Ft 20 D	
	250-350				0.6025	EN-JL 250 (GG-25)	Ft 25 D	
	300-400				0.6030	EN-JL 300 (GG-30)	Ft 30 D	
	350-450				0.6035	EN-JL 350 (GG-35)	Ft 35 D	
	400-500				0.6040	EN-JL Z (GG-40)	Ft 40 D	
	>170				0.6655	GGL-NiCuCr 15 6 2	L-NUC 15 6 2	
	>170	2			0.6660	GGL-NiCr 20-2	L-NC 20 2	
	>190	1			0.6676	GGL-NiCr 30-3	L-NC 30 3	
	>170				0.6680	GGL-NiSiCr 30-5-5	L-NSC 30 5 5	
K Cast iron - nodular graphite Ghise con grafite sferoidale								
1.2	370-400	14			0.7040	EN-GJS-400-15 (GGG-40)	FGS 400-12	
	420-500	7			0.7050	EN-GJS-500-7 (GGG-50)	FGS 500-7	
	550-600	3			0.7060	EN-GJS-600-3 (GGG-60)	FGS 600-3	

Materials list | Lista dei materiali

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	401 S 45	52	X 45 CrSi 8	-	SUH 1	-	HNV 3
	309 S 24	-	-	-	SUH 309	-	309
	-	-	X 16 CrNiSi 25 20	-	SUH 310	-	314; 310
	310 S 24	-	X 6 CrNi 26 20	F.331	SUH 310; SUS 310 S	-	310 S
	NA 17	-	-	-	SUH 330	-	330
	349 S 54	-	X 53 CrMnNiN 21 9	-	SUH 35; SUH 36	-	EV 8
	NA 15 (H)	-	-	-	NCF 800	-	B 163
	321 S 20	-	X 6 CrNiTi 18 11	-	SUS 321	2337	321
	NA 13	-	-	-	-	-	Monel 400
	NA 18	-	-	-	-	-	Monel K-500
	-	-	-	-	-	-	Hastelloy B
	-	-	-	-	-	-	Hastelloy C-4
	-	-	-	-	-	-	Hastelloy B-2
	HR 5	-	-	-	-	-	Nimonic 75
	HR 401; 601	-	-	-	NCF 80 A	-	Nimonic 80 A
	-	-	-	-	-	-	Nimonic 90
	-	-	-	-	-	-	Nimonic 105
	HR 53	-	-	-	-	-	Nimonic 901
	-	-	-	-	-	-	Nimocast 713
	-	-	-	-	-	-	Nimocast PK 24
	-	-	-	-	-	-	Waspaloy
	NA 21	-	-	-	-	-	Inconel 625
	-	-	-	-	-	-	Inconel 718
	-	-	-	-	-	-	-
	TA 1	-	-	-	-	-	-
	TA 2	-	-	-	-	-	-
	TA 3	-	-	-	-	-	-
	-	-	-	-	-	-	-
	TA 28	-	-	-	-	-	R56400
	-	-	-	-	-	-	-
	-	-	G 10	-	FC 10	01 10-00	A48-20 B
	Grade 150	-	G 15	FG 15	FC 15	01 15-00	A48-25 B
	Grade 220	-	G 20	FG 20	FC 20	01 200	A48-30 B
	Grade 260	-	G 25	FG 25	FC 25	01 250	A48-40 B
	Grade 300	-	G 30	FG 30	FC 30	1 300	A48-45 B
	Grade 350	-	G 35	FG 35	FC 35	1 350	A48-50 B
	Grade 400	-	-	-	-	1 400	A48-60 B
	L-NUC 15 6 2	-	-	-	-	-	A-436 Type 1
	L-NC 20 2	-	-	-	-	-	A-436 Type 2
	L-NC 30 3	-	-	-	-	-	A-436 Type 3
	L-NSC 30 5 5	-	-	-	-	-	A-436 Type 4
	SNG 420/12	-	GS 400-12	GGG 40	FCD 40	0717-02	60-40-18
	SNG 500/7	-	GS 500/7	GGG 50	FCD 50	0727-02	65-45-12
	SNG 600/3	-	GS 600/3		FCD 60	0732-03	80-55-06



EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
K Cast iron - nodular graphite Ghise con grafite sferoidale								
1.2	660-700	2			0.7070	EN-GJS-700-2 (GGG-70)	FGS 700-2	
	800	2			0.7080	EN-GJS-800-2 (GGG-80)	FGS 800-2	
	370-480	7			0.7660	GGG-NiCr 20 2	S-NC 20 2	
	>390	7			0.7661	GGG-NiCr 20 3	S-NC 20 3	
	370-450	20			0.7670	EN-GJSA-XNi22	S-N 22	
	440-480	25			0.7673	EN-GJSA-XNiMn23-4	S-NM 23 4	
	370-480	7			0.7676	EN-GJSA-XNiCr30-3	S-NC 30 3	
	>370	13			0.7677	GGG-NiCr 30 1	S-NC 30 1	
	390-500	1			0.7680	EN-GJSA-XNiSiCr30-5-5	S-NSC 30 5 5	
	370-420	20			0.7683	EN-GJSA-XNi35	S-N 35	
	370-450	7			0.7685	EN-GJSA-XNiCr35-3	S-NC 35 3	
K Cast iron - vermicular graphite Ghise con grafite vermicolare								
1.3	300-375	1,5				EN-GJV 300	-	
	350-425	1,5				EN-GJV 350	-	
	400-475	1				EN-GJV 400	-	
	450-525	1				EN-GJV 450	-	
	500-575	0,5				EN-GJV 500	-	
K Malleable cast iron Ghise malleabili								
2.1	>350	10			0.8135	EN-GJMB 350-10	MN35-10	
	>450	6			0.8145	EN-GJMB 450-6	-	
	>550	4			0.8155	EN-GJMB 550-4	MP50-5	
	>650	2			0.8165	EN-GJMB 650-2	MP60-3	
	>700	2			0.8170	EN-GJMB 700-2	M870-2	
	270-360	3			0.8035	EN-GJMW-350-4	MB35-7	
	300-420	4			0.8040	EN-GJMW-400-5	MB40-10	
	330-480	4			0.8045	EN-GJMW-450-7	-	
	490-570	3			0.8055	EN-GJMW-550-4	-	
K Hard casting Ghise in conchiglia								
3.1	<1400		<45		0.9620	GJH-X 260 NiCr 4-2	-	
	<1400		<45		0.9625	GJH-X 330 NiCr 4-2	-	
	<1400		<45		0.9630	GJH-X 300 CrNiSi 9-5-2	-	
	<1400		<45		0.9635	GJH-X 300 CrMo 15-3	-	
	1000	5				GJS-1000-5	-	
	1200	2				GJS-1200-2	-	
	1400	1				GJS-1400-1	-	
H Hardened steels Acciai temprati								
1.1	1250-1550	8	<50		Weldox 1100	-	-	
1.2	1600-1800		<55		Hardox 500	-	-	
	1820-1900		<55		Hardox 550	-	-	
1.3	~1860		<55		1.2713	55 NiCrMoV 6	55 NCDV 7	
	1995-2300		<60		Armox 600T	-	-	
	~2100		<60		1.2542	45 WCrV 7	-	
1.4			<63		Ferro-Titanit	-	-	
			<63		1.2379	X 155 CrVMo12 1	Z 160 CDV 12	
			<66		HSSE	-	-	
			<66		1.2436	X 210 CrW 12	-	



Materials list | Lista dei materiali

EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
N	Aluminum unalloyed Alluminio non legato							
1.1	65-150	<40			3.0225	Al99,5	A5	
	40-100	<33			3.0305	Al99,9	A9	
N	Aluminum wrought alloys - not hardened Leghe malleabili - non indurite							
1.1	100-125	>1			3.0505	AlMn0,5Mg0,5	-	
	80-230	>2			3.0515	AlMn1	-	
	115-290	4			3.0525	AlMn1Mg0,5	A-M1G0,5	
	100-205	>4			3.3315	AlMg1	A-G0,6	
	180-310	>3			3.3535	AlMg3	A-G3M	
N	Aluminum wrought alloys - hardened Leghe malleabili di alluminio - indurite							
1.2	150-400	>2			3.1325	AlCuMg1	A-U4G	
	180-460	>3			3.1355	AlCuMg2	A-U4G1	
	130-360	>2			3.2315	AlMgSi1	A-SGM0,7	
	130-270	>8			3.3206	AlMgSi0,5	-	
	120-300	>2			3.3211	AlMg1SiCu	-	
	410-490	>3			3.4345	AlZnMgCu0,5	AZ 4 GU/9051	
	180-560	>1			3.4365	AlZnMgCu1,5	AZ 4 GU/9050 C	
N	Aluminum cast alloys Si <5% Leghe fuse di alluminio con Si <5%							
1.3	280-300	<1			3.2134	G-AlSi5Cu1Mg	-	
	140-300	>2			3.3241	G-AlMg3Si	-	
	200	1			3.3292	GD-AlMg9	A-G10S	
	140-210	>4			3.3541	GD-AlMg3	A-G3T	
N	Aluminum cast alloys Si <5-12% Leghe fuse di alluminio con Si <5-12%							
1.4	160-200	1			3.2161	G-AlSi8Cu3	-	
	230-360	>2			3.2373	G-AlSi9Mg	A-S9G	
	240-350	<3			3.2163	G-AlSi9Cu3	A-S9U3	
	150-340	>1			3.2381	G-AlSi10Mg	A-S10G	
	160	1			3.2383	G-AlSi10Mg(Cu)	A-S10GU	
	150-170	5			3.2581	G-AlSi12	A-S13	
	150-290	>1			3.2583	G-AlSi12(Cu)	A-S12U	
N	Aluminum cast alloys Si >12% Leghe fuse di alluminio con Si >12%							
1.5	165-370	<1				G-AlSi 17 Cu 4 Mg	-	
	180-220	<1				G-AlSi 18 CuNiMg	-	
	200-240	<1				G-AlSi 21 CuNiMg	-	
	230-300	<1,5				G-AlSi 25 CuNiMg	-	
N	Pure copper, low alloyed copper Rame puro, Rame poco legato							
2.1	<600	>10			2.0240	CuZn15	CuZn15	
	<800	>10			2.0265	CuZn30	CuZn30	
N	Copper-zinc alloys (brass) (long-chipping) Leghe rame-zinco (ottone) (truciolo lungo)							
2.2	<800	>10			2.0321	CuZn37	CuZn37	
	<800	>12			2.0335	CuZn36	Ms63	
	340-480	25			2.0360	CuZn40	Ms60	
N	Copper-zinc alloys (brass) (short-chipping) Leghe rame-zinco (ottone) (truciolo corto)							
2.2	340-570	>11			2.0401	CuZn39Pb3	Ms58	
N	Copper-tin alloys (bronze) (long-chipping) Leghe rame-stagno (bronzo) (truciolo lungo)							
2.4	<900	50			2.1016	CuSn4	-	
	390-620	>15			2.1030	CuSn8P	-	

Materials list | Lista dei materiali

							
	BS	EN	UNI	UNE	JIS	SIS	AISI/SAE/ASTM
	1B	-	4507	L-3051	A1x1	-	-
	-	-	-	-	-	-	-
	N31	-	-	-	-	-	3105
	N3	-	3568	L-3810	144054	-	-
	-	-	-	-	-	-	-
	N41	-	5764	L-3350	A2x8	144106	-
	N5	-	3575	L-3390	-	-	-
	H14	-	3579	L-3120	-	-	-
	2L97	-	3579	L-3140	A3x4	-	-
	H30	-	3571	L-3451	-	144212	-
	H9	-	3569	L-3441	A2x5	144103	-
	H20	-	-	-	-	-	-
	L86	-	811-04	-	-	-	7050
	L87	-	811-05	-	-	-	7075
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	5080	-	-	-	-
	-	-	3059	-	ADC6	-	-
	-	-	-	-	-	-	-
	-	-	3051	-	AC4A	-	-
	LM24	-	5075	-	-	-	-
	LM9	-	3051	L-2560	-	4253	-
	LM 9	-	-	-	-	4253	A 360.2
	LM 6	-	3051	-	AC3	4261	A 413.2
	LM 20	-	3048	-	-	4260	A 413.1
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	CZ 102	-	-	-	C2300	-	C23000
	CZ 106	-	-	-	C2600	-	C26000
	CZ 108	-	-	-	C 2700	-	C27200
	CZ 108	-	P-CuZn35	-	C 2700	-	C27000
	DCB1	-	-	-	-	-	C28000
	-	-	-	-	-	-	C38500
	-	-	-	-	C 5111	-	C51100
	-	-	-	-	C5210	-	C52100



EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	
N	Copper-zinc alloys (bronze) (short-chip.) Leghe rame-zinco (bronzo) (truciolo corto)							
2.3	200-250	6			2.1097	G-CuSn5ZnPb	Rg5	
	230-320	12			2.1090.01	G-CuSn7ZnPb	Rg7	
	280	18			2.1086.01	G-CuSn10Zn	Rg10	
	600-650	7			2.0975	G-CuAl10Ni	CuNiAl11	
N	Copper-Aluminum alloys Leghe rame-alluminio							
2.5	>550	40			Ampco 8	-	-	
	>750	1			Ampco 21	-	-	
	>500	0			Ampco 25	-	-	
	>810	15			Ampco 45	-	-	
	>1000	8			Ampco M-4	-	-	
N	Magnesium, wrought alloys Leghe malleabili di magnesio							
3.1	>270	6			3.5612	MgAl 6 Zn	-	
	>240	2			3.5912	G-MgAl9Zn1	-	
N	Synthetics Materie plastiche							
4.1					Bakelit	-	-	
					Pertinax	-	-	
4.2					PMMA	-	-	
					POM	-	-	
					PVC	-	-	
N	Fibre-reinforced synthetics Resine epossidiche rinforzate							
4.3	155-365				GFK	Fiberglass Vetroresina Fibra di Vetro		
	190-210				CFK uni.	Carbon fiber Fibra di Carbonio		
	190-210				CFK multi.	Carbon fiber Fibra di Carbonio		
					AFK	Aramide fiber Fibra di Aramide		
					BFK	Boro fiber Fibra di Boro		
					MFK	Metal fiber Fibre Metalliche		
					SFK	Synthetic fiber Fibre Sintetiche		
N	Sandwich							
4.5					P-M-H	Plastic-Metal-Wood Plastica-Metallo-Legno		
					Honeycomb	-		
					Metall	-		
N	Graphite							
5.0						Graphite standard Grafite standard		
5.1						Wear-resistant Graphite Grafite resistente all'usura		

[illegible]

Cod.	
ENH.A_MVPCR/L	50
ENH.A_MCLNR/L	30
ENH.A_MDUNR/L	35
ENH.A_MTFNR/L	43
ENH.A_MVUNR/L	50
ENH.A_MVZNR/L	50
ENH.A_MWLNRL	47
ENH.A_PCLNR/L	31
ENH.A_PDUNR/L	35
ENH.A_PSKNR/L	39
ENH.A_PTFNR/L	43
ENH.A_PWLNRL	47
ENH.A_SCLCR/L	62
ENH.A_SDNCR/L	68
ENH.A_SDQCR/L	69
ENH.A_SDUCR/L	67
ENH.A_SDXCR/L	68
ENH.A_SSKCR/L	71
ENH.A_STFCR/L	74
ENH.A_STUCR/L	74
ENH.A_SVOCR/L	82
ENH.A_SVQBR/L	77
ENH.A_SVQCR/L	80
ENH.A_SVUCR/L	80
ENH.A_SVXCR/L	80
ENH.DCLNR/L	27
ENH.DDJNR/L	33
ENH.E_SCLCE/L	63
ENH.E_SDQCR/L	69
ENH.E_SDUCR/L	67

Cod.	
ENH.E_SVUCR/L	81
ENH.GP_	85
ENH.MTJNR/L	42
ENH.MVJNR/L	49
ENH.MVPCR/L	49
ENH.MVVNN	49
ENH.MWLNRL	46
ENH.PCBNR/L	29
ENH.PCKNR/L	29
ENH.PCLNR/L	28
ENH.PCSNR/L	29
ENH.PDJNR/L	34
ENH.PDNNR/L	34
ENH.PSBNR/L	37
ENH.PSDNN	38
ENH.PSKNR/L	37
ENH.PSSNR/L	38
ENH.PTFNR/L	42
ENH.PTGNR/L	42
ENH.PWLNRL	46
ENH.SCLCR/L	62
ENH.SDHCR/L	66
ENH.SDJCR/L	66
ENH.SDNCR	66
ENH.SSSCR/L	71
ENH.STFCR/L	73
ENH.STGCR/L	73
ENH.SVHCR/L	79
ENH.SVJBR/L	77
ENH.SVJCR/L	79

Cod.	
ENH.SVBN	77
ENH.SVCN	79
ENH.SVXCR/L	79
ENK.CCGW	95 - 102
ENK.CCMT	60
ENK.CNGA	92
ENK.CNGM	92
ENK.CNMG	24
ENK.CNMM	26
ENK.DCGT	95
ENK.DCGW	103
ENK.DCMT	64
ENK.DNMG	32
ENK.GP_	84
ENK.SCMT	70
ENK.SNMG	36
ENK.SNMM	36
ENK.TCGT	96
ENK.TCGW	104
ENK.TCMT	72
ENK.TNGA	93
ENK.TNMA	41
ENK.TNMG	40
ENK.VBMT	76
ENK.VCMT	78
ENK.VNMG	48
ENK.WNGM	94
ENK.WNMG	44
ENK.M	110

R _m [N/mm²]	HV 10	HB	HRC
255	80	76	
270	85	81	
285	90	86	
305	95	90	
320	100	95	
335	105	100	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	157	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	
785	245	233	
800	250	238	22
820	255	242	23
835	260	247	24
860	268	255	25
870	272	258	26
900	280	266	27

R _m [N/mm²]	HV 10	HB	HRC
920	287	273	28
940	293	278	29
970	302	287	30
995	310	295	31
1020	317	301	32
1050	327	311	33
1080	336	319	34
1110	345	328	35
1140	355	337	36
1170	364	346	37
1200	373	354	38
1230	382	363	39
1260	392	372	40
1300	403	383	41
1330	413	393	42
1360	423	402	43
1400	434	413	44
1440	446	424	45
1480	458	435	46
1530	473	449	47
1570	484	460	48
1620	497	472	49
1680	514	488	50
1730	527	501	51
1790	544	517	52
1845	560	532	53
1910	578	549	54
1980	596	567	55
2050	615	584	56
2140	639	607	57
	655	622	58
	675		59
	698		60
	720		61
	745		62
	773		63
	800		64
	829		65
	864		66
	900		67



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