Codici di identificazione degli inserti per tornitura

La norma UNI ISO 1832 stabilisce un codice per la designazione degli inserti in metallo duro o in altri materiali da taglio. Questa designazione comprende una serie di simboli alfanumerici per l'individuazione completa dell'inserto.
La simboleggiatura completa richiede un minimo di sette simboli, ognuno dei quali specifica una certa caratteristica.
La prima lettera (indicata con 1 nel prospetto) è relativa alla forma dell'inserto, l'interpretazione può essere fatta con il riquadro indicato con il numero 1.
La seconda lettera riguarda l'angolo di spoglia inferiore dell'inserto (riquadro 2). Qualora detto angolo di spoglia fosse diverso da quelli indicati, la lettera distintiva è O.
La terza lettera indica la tolleranza di costruzione dell'inserto, secondo le specifiche riportate nel riquadro 3. Le tolleranze riguardano in particolare lo spessore e la dimensione fondamentale dell'inserto.
La quarta lettera (riquadro 4) indica la forma dell'inserto. Inserti di forma non compresa in quella base vengono indicati con la lettera X.
Il simbolo successivo è un numero che rappresenta la lunghezza del tagliente, secondo quanto riportato nel riquadro 5.
Segue un ulteriore numero che indica lo spessore dell'inserto, secondo quanto riportato nel riquadro 6. Da notare che per due dimensioni di spessore (1,98 mm e 3,97 mm), l'indicazione prevede anche la lettera T.
L'ultima indicazione obbligatoria riguarda il raggio di punta dell'utensile, secondo quanto riportato nel riquadro 7.
Le indicazioni complementari indicano infine le caratteristiche del tagliente (riquadro 8), l'esecuzione (inserto destro, sinistro, frontale riquadro 9) e l'angolo dello smusso.

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Inserti per tornitura

da ISO 1832-91

T	N	G	N	11	03	08			-	PF
1	2	3	4	5	6	7	8	9		12

T	010	-	PF
8	10		12

1 Forma dell'inserto

R	S	T	C
80°			

E	D	V
75°	55°	36°

W	L	K
80°		55°

2 Angolo di spoglia inferiore dell'inserto

B	C	E
5°	7°	20°

F	N	P
25°	0°	11°

O
Per angoli di spoglia inferiori speciali

4 Tipo dell'inserto

A	F	G

M	N	R

X
Per inserti non equilateri o con forma speciale

6 Spessore dell'inserto

s

	s
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
09	9,52
10	10,00
12	12,00

7 Raggio di punta

r

	r
00	rotondo
02	0,2
04	0,4
05	0,5
08	0,8
10	1,0
12	1,2
15	1,5
16	1,6
24	2,4
32	3,2
40	4,0

8 Condizioni del tagliente

F	tagliente affilato
E	tagliente con trattamento ER
T	fascetta negativa
K	doppia fascetta negativa
S	fascetta negativa e trattamento ER

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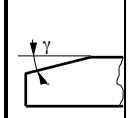
5 Dimensione inserto = lunghezza del tagliente

CI	C	D	R	S	T	V	W	K
3,97					06			
5,0			05					
5,56					09			
6,0		06			11	11		
6,35	06	07						
8,0			08					
9,0			09					16
9,525	09	11	09	09	16	16		
10,0			10					
12,0			12					
12,7	12	15	12	12	22	22	08	
15,87	16		15	15	27			
16,0			16					
19,05	19		19	19	33			
20,0			20					
25,0			25					
25,4	25		25	25				
31,75			31					
32			32					

11 Angolo dello smusso

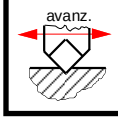


	γ
15	15°
20	20°

9 Esecuzione

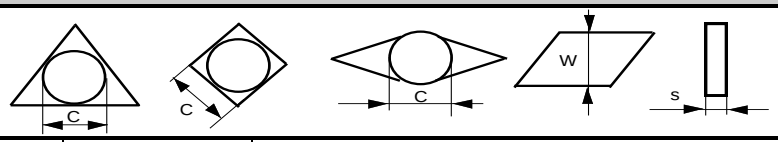
R

L



N

3 Tolleranze

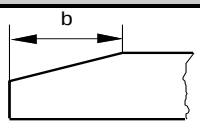


Classe	s	C/W
G	± 0,13	± 0,025
M		± 0,05 - ± 0,15[1]
U		± 0,08 - ± 0,25[1]

[1] Varia in funzione della dimensione di C. Vedere tabella sotto riportata

Cerchio inscritto	Classe di tolleranza	
C [mm]	**M**	**U**
3,97 5,0 5,56 6,0 6,35 8,0 9,525 10,0	± 0,05	± 0,08
12 12,7	± 0,08	0,13
15,875 16,0 19,05 20,0	± 0,10	0,18
25,0 25,4	± ,13	± 0,25
31,75 32	± 0,15	± 0,25

10 Larghezza dello smusso



010	b = 0,10 mm
025	b = 0,25 mm
070	b = 0,70 mm
150	b = 1,50
200	b = 2,00

12 Indicazioni del costruttore

Il codice ISO consiste in nove simboli, di cui 8 e 9 sono supplementari: il costruttore, inoltre può aggiungere altri due simboli, ad es.:
PF = ISO finitura
PR = ISO sgrossatura

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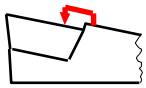
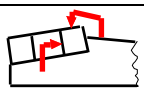
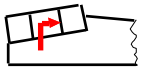
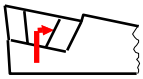
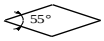
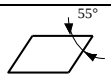
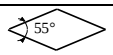
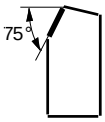
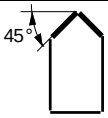
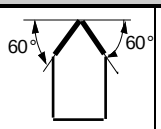
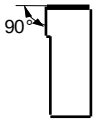
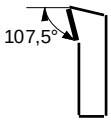
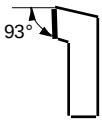
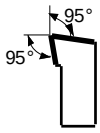
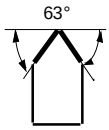
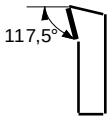
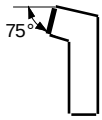
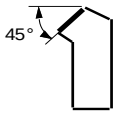
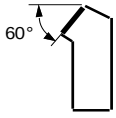
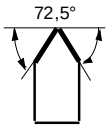
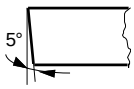
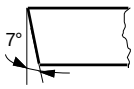
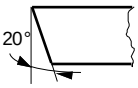
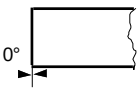
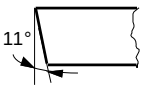
Utensili per tornitura esterna

P	C	L	N	R	16	16	H	09	–	10
1	2	3	4	5	6	7	8	9		IC 11

1 Sistema di bloccaggio			
A staffa	A staffa - cuneo	A leva	A vite
			
C	M	P	S

2 Forma dell'inserto	
C	 D
 K	R
S	T
 V	W

3 Tipo di attacco				
				
B	D	E	F	G
				
H	J	K	L	N
				
Q	R	S	T	V

4 Angolo di spoglia inferiore dell'inserto	
	
B	C
	
E	N
	Descrizione specifica
P	O

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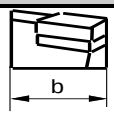
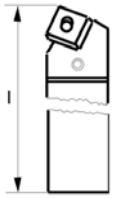
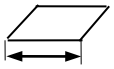
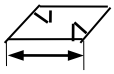
5 Tipo di esecuzione		
R	**L**	**N**

6 Altezza dello stelo
Valori inferiori a 10 preceduti da 0

7 Larghezza dello stelo

Valori inferiori a 10 preceduti da 0

8 Lunghezza dello stelo l [mm]			
	**A** = 32 **B** = 40 **C** = 50 **D** = 60 **E** = 70 **F** = 80 **G** = 90 **H** = 100	**J** = 110 **K** = 125 **L** = 140 **M** = 150 **N** = 160 **P** = 170 **Q** = 180 **R** = 200	**S** = 250 **T** = 300 **U** = 350 **V** = 400 **W** = 450 **Y** = 500 **X** Speciale

9 Lunghezza del tagliente [mm]			
	R		**W**
	S		**CDV**
	T		**K**

10 Indicazioni del costruttore
Se necessario, il costruttore può aggiungere un simbolo supplementare, consistente in un massimo di tre lettere, separata dalla designazione standardizzata per mezzo di un trattino (per esempio **W** per disegno a cuneo)

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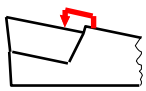
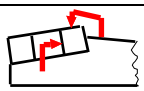
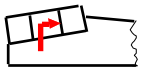
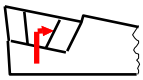
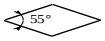
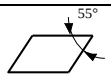
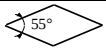
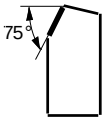
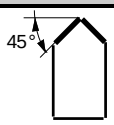
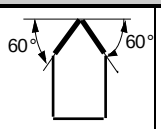
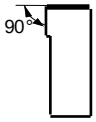
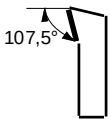
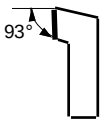
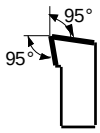
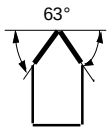
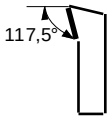
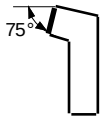
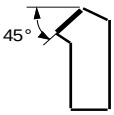
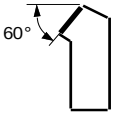
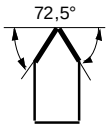
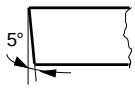
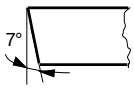
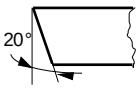
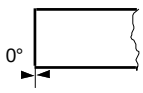
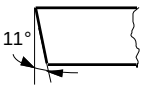
Utensili per tornitura esterna

P	C	L	N	R	16	16	H	09	–		
1	2	3	4	5	6	7	8	9		10	11
											IC

1 Sistema di bloccaggio			
A staffa	A staffa - cuneo	A leva	A vite
			
C	M	P	S

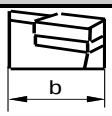
2 Forma dell'inserto	
C	 D
 K	R
S	T
 V	W

3 Tipo di attacco				
				
B	D	E	F	G
				
H	J	K	L	N
				
Q	R	S	T	V

4 Angolo di spoglia inferiore dell'inserto	
	
B	C
	
E	N
	Descrizione specifica
P	O

5 Tipo di esecuzione		
R	L	N

6 Altezza dello stelo
Valori inferiori a 10 preceduti da 0

7 Larghezza dello stelo

Valori inferiori a 10 preceduti da 0

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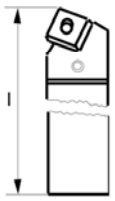
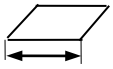
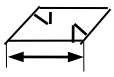
8 Lunghezza dello stelo l [mm]			
	**A** = 32 **B** = 40 **C** = 50 **D** = 60 **E** = 70 **F** = 80 **G** = 90 **H** = 100	**J** = 110 **K** = 125 **L** = 140 **M** = 150 **N** = 160 **P** = 170 **Q** = 180 **R** = 200	**S** = 250 **T** = 300 **U** = 350 **V** = 400 **W** = 450 **Y** = 500 **X** Speciale

9 Lunghezza del tagliente [mm]			
	R		**W**
	S		**CDV**
	T		**K**

10 Indicazioni del costruttore
Se necessario, il costruttore può aggiungere un simbolo supplementare, consistente in un massimo di tre lettere, separata dalla designazione standardizzata per mezzo di un trattino (ad esempio **W** per disegno a cuneo)

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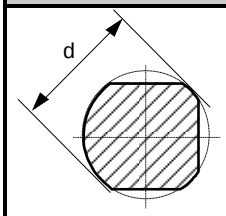
Utensili per la tornitura interna

S	40	V	S	C	L	C	R	12	-	
1	2	3	4	5	6	7	8	9		10

1 Tipo di barra

A barra di acciaio con adduzione interna di refrigerante
E barra di metallo duro
F barra antivibrante
S barra integrale di acciaio

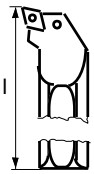
2 Diametro dello stelo



D = Diametro minimo di lavoro

d = 16 D = 20
d = 20 D = 25

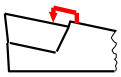
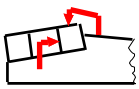
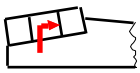
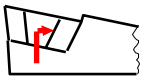
3 Lunghezza



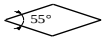
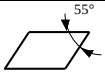
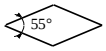
Lunghezza l [mm]

F = 80	**S** = 259
H = 100	**T** = 300
K = 125	**U** = 350
M = 150	**V** = 400
P = 170	**W** = 450
Q = 180	**Y** = 500
R = 200	**X** = spec.

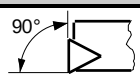
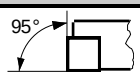
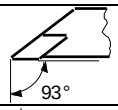
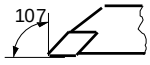
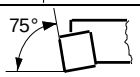
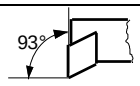
4 Sistema di bloccaggio

A staffa **C** 	A staffa -cuneo **M** 
A leva **P** 	A vite **S** 

5 Forma dell'inserto

C	 **D**
 **K**	**R**
S	**T**
 **V**	**W**

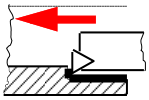
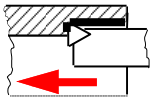
6 Tipo di barra

 **F**	 **L**
 **J**	 **Q**
 **K**	 **U**

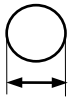
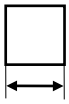
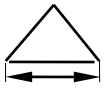
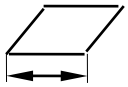
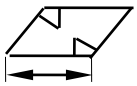
7 Angolo di spoglia inferiore dell'inserto

B	**C**	**E**
		Per angoli di spoglia inferiori speciali
N	**P**	**O**

8 Tipo di esecuzione


R

L

9 Lunghezza del tagliente l [mm]

		
R	**S**	**T**
		
C-D-V	**K**	**W**

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Inserti per filettatura

da catalogo SANDVIK-Coromant

R	166.0	G	–	16	MMO	1	–	150
1	2	3		4	5	6	7	8

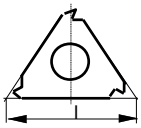
1 Versione dell'inserto	
R	inserto destro
L	inserto sinistro

2 Codice principale	
166.0	T-MAX U - Lock

3 Tipo di lavorazione	
G	inserti per filettatura esterna
L	inserti per filettatura interna

4 Dimensioni dell'inserto

lunghezza l, in mm
11 = 6,35 mm
16 = 9,52 mm
22 = 12,7 mm



5 Profilo del filetto

VMO = profilo a V 60°
VWO = Profilo a V 55°
MM0 = metrico 60°
WHO = Whitworth 55
RNO = rotondo 30°
TRO = trapezoidale

6 Numero di punte per tagliente

Varia da 1 a 3 punte

7 Condizione del tagliente

- = arrotondato
F = affilato
C = geometria con formatrucioli

8 Passo

mm = passo × 100
pollice = numero di filetti/pollice × 10

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