

HR



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ALTA RESISTENZA
High Resistance - Haute Résistance



Filettature – Thread – Filetage

M	pag	5 - 9
MF	pag	10 - 12

Materiale – Material – Matériau

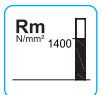
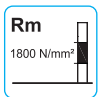
PM3	Acciaio sinterizzato ad alta % di Co & V – Powdered metallurgy high %Co and V – Acier fritté avec haute % Co et V
PM1	Acciaio sinterizzato a maggior % di Co & V – Powdered metallurgy with higher % Co and V – Acier fritté avec plus haute % Co et V

Rivestimento – Coating – Revêtement

TXC	Resistenza all'usura, all'ossidazione e migliora lo scorrimento del truciolo – Oxidation and wear resistance, better chip evacuation – Résistance à l'usure, à l'oxydation et facilite le glissement des copeaux
TiAlN	Resistenza all'usura e all'ossidazione – Oxidation and wear resistance – Résistance à l'usure et à l'oxydation

Campo applicativo – Application field - Champs d'applications

1.4 1.5 1.6 1.7	Acciaio – Steel – Acier
3.1 3.2 3.3 3.4 3.5	Ghisa – Cast iron – Fonte
4.3 4.4	Leghe alluminio Si $\leq 10\%$ ed Si $\geq 10\%$ – Aluminium alloys Si $\leq 10\%$ and Si $\geq 10\%$ Alliages aluminium Si $\leq 10\%$ ed Si $\geq 10\%$
4.5 4.6	Leghe di magnesio – Magnesium alloys – Alliages de magnésium
5.3 5.4	Leghe di rame, ottone, bronzo - Truciolo corto – Cooper alloys, brass, bronze - Short chipping – Alliages de cuivre, laiton, bronze - Copeaux courts
8.2 8.3	Mat. plastiche termoindurenti e con fibre di rinforzo – Thermosetting plastics and reinforced plastic materials Matières plastiques thermodurcissables et avec des fibres de renforcement
9.1 9.3	Materiali metallo-ceramici (Cermets) – TIC Hard materials – Matériaux métal-céramique (Cermets)
10.1	Grafite – Graphite



≤ 52HRC

Per fori ciechi e passanti – For blind and through holes – Pour trous débouchants et borgnes

K22 K23	Tagli diritti per medio alta resistenza – Straight flutes for medium - high resistance – Goujures droites pour moyenne-haute résistance
K20 K21	Tagli diritti ≤ 45 HRC – Straight flutes ≤ 45 HRC – Goujures droites < 45 HRC
XT20	Tagli diritti ≤ 52 HRC – Straight flutes ≤ 52 HRC – Goujures droites < 52 HRC

Per fori passanti – For through holes – Pour trous débouchants

K24 K25	Imbocco corretto – Spiral pointed – Goujures Droites avec entrée Gun
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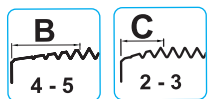
Per fori ciechi – For blind holes – Pour trous borgnes

K40 K41	Elica 15° dx – Spiral flutes 15° rh – Hélice 15° dx
K80 K81	Elica 40° dx rastremazione posteriore – Spiral flutes 40° rh, back tapered thread – Hélice 40° dx détalonnage arrière

Legenda icone – Icon description – Légende icônes

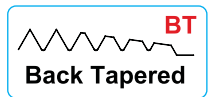


Filettatura destra – Right thread – Filetage à droite



Tipi di imbocco – Chamfer type – Nombre de filets d'entrée

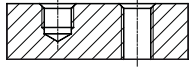
Synchro Rigid, maschiatura rigida sincronizzata
Rigid tapping Synchro
Synchro Rigid, taraudage rigide et synchronisée



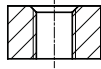
Rastremazione posteriore a botte del filetto – Back tapered thread – Détalonnage arrière

TABELLA D'IMPIEGO

APPLICATION TABLE TABLE D'OPÉRATION



Applicazione per foro cieco e passante
Blind and through hole application
Application pour trou borgne et débouchant



Applicazione per foro passante
Through hole application
Application pour trou débouchant



Applicazione per foro cieco
Blind hole application
Application pour trou borgne



- LH Filettatura sinistra
Left hand thread - Filetage à gauche
- M58 Applicazione specifica per ottone Ms58
Specific application for brass Ms58 - Spécifique pour laiton Ms58
- AZ Alternatura del filetto
Interrupted threads - Taraud avec filets alternés
- SR Synchro Rigid, maschiatura rigida sincronizzata
Rigid tapping Synchro - Synchro Rigide, taraudage rigide synchronisée
- XL Maschi con gambo lungo
Taps with long shank - Tarauds série longue
- BT Back Tapered, rastremazione posteriore a botte del filetto
Back tapered thread - Détalonnage arrière
- IT Inox Tapered, rastremazione posteriore orizzontale del filetto
*Horizontal back tapered for Inox application
INOX Tapered, détalonné conique horizontale pour application Inox*
- con1:16 Maschi con filettatura conica
Taps with tapered thread - Tarauds à filetage conique
- Al Applicazione specifica per alluminio e leghe d'alluminio
*Specific application for aluminium and aluminium alloys
Application spécifique pour l'aluminium et alliages d'aluminium*
- Cu Applicazione specifica per rame e leghe rame
Specific application for cooper and cooper alloys - Application spécifique pour le cuivre et ses alliages
- Ti Applicazione specifica per titanio e leghe di titanio
Specific application for titanium and titanium alloys - Application spécifique pour titane et alliages de titane
- Ni Applicazione specifica per nichel e leghe di nichel
Specific application for nickel and nickel alloys - Application spécifique pour le nickel et ses alliages

Indicazione numero di pagina
Page number
Numéro de page

- Utilizzo raccomandato - velocità di taglio m/min
- Utilizzo accettabile - velocità di taglio m/min
- Recommended Use - cutting speed m/min
- Acceptable Use - cutting speed m/min
- Utilisation-Recommandée - vitesse de coupe m/min
- Utilisation acceptable - vitesse de coupe m/min

Descrizione Description - Description	
Tipi di foro Hole Types - Type de trous	
CODICE - CODE - CODE	
Linea - Product line - Ligne	
Elica / NOTE Flute Type / Notes - Hélice / Notes	
M	ISO2/6H
MJ	ISO1/4H
	ISO3/6G
	7G 6H+0,1
MF	ISO2/6H
MJF	ISO1/4H
	ISO3/6G
	7G 6H+0,1
UNC	2B 3BX
UNF	2B 3BX
UNEF	2B
UNS	2B
8-12-16 UN	2B
20-28-32 UN	2B
	G, (Rp)
	NPSM
	NPSF
	Rc
	NPT
	NPTF
	BSW
	PG, Tr, Rd
	EG-M
	Imbocco / Chamfer / Entrée
	Materiale / Steel tap / Matériel
	Rivestimenti / Coating / Revêtements
	Classe appl. / Appl. Class. / Classe d'appl.
	Prof. filett. / Thread depth / Profil filetage

				HB < 120	Rm N/mm² < 400
1. Acciaio Steel Acier	1.1 Acciaio dolce magnetico	Magnetic soft steel	Acier doux magnétique		
	1.2 Acciaio da costruzione, cementazione, automatico	Structural, case carburizing and free cutting steel	Acier de construction, trempé et automatique	< 200	< 700
	1.3 Acciaio al carbonio	Plain carbon steel	Acier au carbone	< 250	< 850
	1.4 Acciaio legato - Bonificato, fusioni d'acciaio	Alloyed steel - Tempered steel, steel castings	Acier allié, trempé et revenu, moulages d'acier	< 250	< 850
	1.5 Acciaio legato - Bonificato	Alloyed steel - Tempered steel	Acier allié, trempé et revenu	250÷350	850÷1200
	1.6 Acciaio legato - Alta resistenza	Alloyed steel - High strength steel	Acier allié, haute résistance	38÷45 HRC	1200÷1400
	1.7 Acciaio legato - Alta resistenza	Alloyed steel - High strength steel	Acier allié, haute résistance	45÷49 HRC	1400÷1600
	1.8 Acciaio legato - Temprato	Hardened steel	Acier trempé	49÷62 HRC	
2. Acciaio INOX Stainless Steel Acier inoxydable	2.1 Acciaio inox automatico	Free machining stainless steel	Acier inoxydable, automatique	< 250	< 850
	2.2 Austenitico	Austenitic	Austénitique	< 250	< 850
	2.3 Ferritico, Ferritico + Austenitico, Martensitico	Ferritic, Ferritic + Austenitic, Martensitic	Ferritique, austénitique + ferritiques, martensitiques	< 320	< 1100
	2.4 Leghe Cr-Ni resistenti alle alte temperature	Cr-Ni alloys high temperatures resistant	Alliège Cr-Ni résistant à des températures élevées	330÷410	1100÷1400
3. Ghisa Cast iron Fonte	3.1 Ghisa grigia lamellare	Lamellar grey cast iron	Fonte grise lamellaire	< 180	< 600
	3.2 Ghisa grigia lamellare	Lamellar grey cast iron	Fonte grise lamellaire	180÷300	600÷1000
	3.3 Ghisa sferoidale	Nodular cast iron	Fonte ductile	< 300	< 1000
	3.4 Ghisa malleabile	Malleable cast iron	Fonte malleable	< 210	< 700
	3.5 Ghisa vermicolare a grafite compatta	Compacted cast iron with vermicular graphite	Fonte vermiculaire à graphite compacté	200÷300	700÷1000
	4.1 Alluminio / Magnesio non legato	Aluminium / Magnesium unalloyed	Aluminium / Magnésium non allié	< 100	< 350
	4.2 Leghe di Al, Si < 0,5% - Truciolo lungo	Al alloys, Si < 0,5% - Long chipping	Alliège Al, Si <0,5% copeaux longs	< 150	< 500
	4.3 Leghe di Al, Si < 10% - Truciolo medio	Al alloys, Si < 10% - Medium chipping	Alliège Al, Si <10% copeaux moyens	< 150	< 500
	4.4 Leghe Al, Si > 10% - Truciolo corto	Al alloys, Si > 10% - Short chipping	Alliège Al, Si >10% copeaux courts	< 180	< 600
	4.5 Leghe standard di magnesio	Magnesium standard alloys	Alliages de magnésium standards		120÷300
	4.6 Leghe di magnesio ad alta resistenza	High strength magnesium alloys	Alliages de magnésium de haute résistance	70÷120	240÷400
	5. Rame Cooper Cuivre	5.1 Rame puro, Rame elettrolitico - Truciolo lungo	Cooper unalloyed - Long chipping	Cuivre pur, cuivre électrolytique, copeaux longs	< 100
5.2 Leghe di rame, α-ottone - Truciolo lungo		Cooper alloys, soft brass - Long chipping	Alliages de cuivre, α-laiton copeaux longs	< 200	< 700
5.3 Leghe di rame, β-ottone, Bronzo - Truciolo corto		Cooper alloys, hard brass, bronze - Short chipping	Alliages de cuivre, β-laiton, bronze copeaux courts	< 200	< 700
5.4 Bronzo ad alta resistenza		High strength bronze	Bronze haute résistance	< 440	< 1500
6. Titanio Titanium Titane	6.1 Titanio non legato	Titanium unalloyed	Titane non allié	< 200	< 700
	6.2 Leghe di titanio	Titanium alloys	Alliages de titane	< 270	< 900
	6.3 Leghe di titanio	Titanium alloys	Alliages de titane	< 410	< 1400
7. Nichel Nickel	7.1 Nichel non legato	Nickel unalloyed	Nickel non allié	< 150	< 500
	7.2 Leghe di Nichel	Nickel alloys	Alliages de nickel	< 270	< 900
	7.3 Leghe di Nichel	Nickel alloys	Alliages de nickel	< 470	< 1600
8. Materie plastiche Synthetic Material Matériaux Plastiques	8.1 Materiali termoplastici - Truciolo extralungo	Thermoplastics - Extra long chipping	Matériaux thermoplastique copeaux extra-longues		< 80
	8.2 Materiali termoindurenti - Truciolo corto	Thermosetting plastics - Short chipping	Matériaux thermodurcissables copeaux courts		< 110
	8.3 Materie plastiche con fibre di rinforzo	Reinforced plastic materials	Plastiques avec fibres de renfort	240÷440	800÷1500
9. Materiali speciali Special materials Matériaux spéciaux	9.1 Materiali metallo - Ceramic (Cermets)	TIC - Hard materials	Matériaux métalliques, céramiques (Cermet)	< 51 HRC	< 1700
	9.2 Leghe a base cobalto	Alloys on cobalt base	Alliages à base de cobalt	< 350	< 1200
	9.3 Leghe di tungsteno	Tungsten alloys	Alliages de tungstène	< 52 HRC	< 1800
10. Grafite / Graphite	10.1 Grafite	Graphite	Graphite		< 100

Series K22/K23

HR

ALTA RESISTENZA

High Resistance - Haute Résistance

Per la filettatura di materiali a medio – alta resistenza

For threading medium - high resistance materials

Pour le filetage de matériaux de haute résistance

FOR

Lubrificazione interna con uscita assiale.

Through coolant, axial flow.

Lubrification interne à sortie axiale.

Materiale

Material - Matériau

PM3 Acciaio super rapido sinterizzato ad alto contenuto di vanadio e cobalto.

PM3 Powdered metallurgy high speed steel with high contents of vanadium and cobalt.

Acier super rapide fritté PM3 à haute teneur en vanadium et cobalt.

Scanalature diritte

Straight Flutes

Goujures droites

La particolare geometria di taglio, in abbinamento alla lubrificazione interna, favoriscono l'evacuazione e la regolarità del truciolo. Per profondità fino a 3,5xD.

The special cutting geometry, combined with the internal coolant, facilitate the evacuation and the regularity of the chip. For thread depth up to 3,5xD.

La géométrie de coupe spéciale, en combinaison avec la lubrification interne, favorisent l'évacuation et la régularité des copeaux. Pour des profondeurs allant jusqu'à 3,5xD.

Rivestimento

Coating - Revêtement

TXC Doppio rivestimento, conferisce resistenza all'usura e favorisce lo scorrimento del truciolo.

TXC Double coating with good properties of wear resistance and chip evacuation.

Double revêtement TXC qui garantit la résistance à l'usure et facilite le glissement des copeaux.

FOR Y

Lubrificazione interna con uscita radiale

Through coolant, radial flow

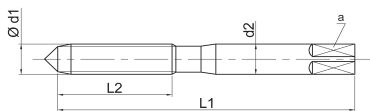
Lubrification interne à sortie radiale



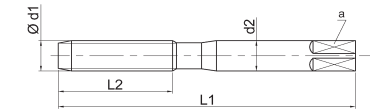
MASCHI A MACCHINA

MACHINE TAPS - TARAUDS MACHINE

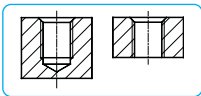
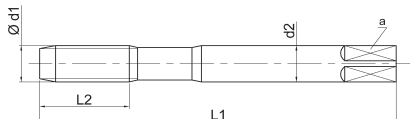
~DIN 371



~DIN 371



UFS norm



TOP



≤ 52HRC

TOP



≤ 52HRC

Profond. di filettatura - Thread depth - Profond. de filetage

Materiale - Material - Matériau

Tolleranza - Tolerance - Tolérance

Trattamento superficiale - Surface treatment - Revêtement

Numero gruppi materiali

Material's groups number

Nombre de groupes du matériau

2xD

1,5xD

PM1

PM1

6HX

6HX

TiAlN

TiAlN

1.6 1.7

1.6 1.7

5.4

5.4

9.1 9.3

9.1 9.3

~DIN 371	Ød1 M	P mm	L ₁	L ₂	d ₂ h9	a h12	Z	
◀	4	0,7	63	13	4,5	3,4	4	3,3
◀	5	0,8	70	13	6	4,9	4	4,2
◀	6	1	80	16	6	4,9	4	5
	8	1,25	90	18	8	6,2	5	6,8
	10	1,5	100	20	10	8	5	8,5
	6	1	80	18	6	4,9	4	5
	8	1,25	90	25	8	6,2	5	6,8
	10	1,5	100	30	10	8	5	8,5

UFS norm	Ød1 M	P mm	L ₁	L ₂	d ₂ h9	a h12	Z	
	12	1,75	110	25	9	7	5	10,3
	12	1,75	110	30	12	9	5	10,3

CODE - CODE

XT20M...

○

○

○

○

○

XT20M...TX

-

-

-

CODE - CODE

XT21M...

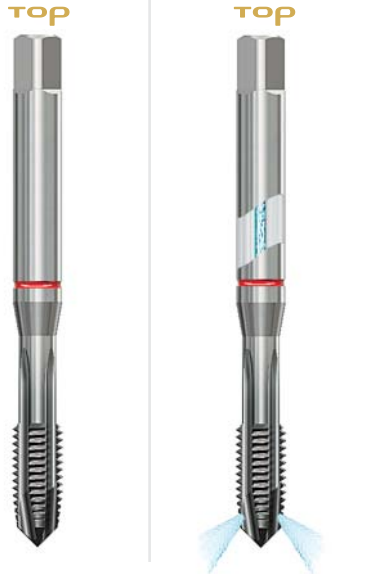
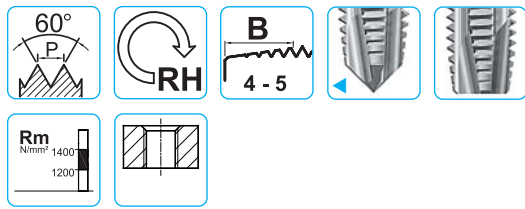
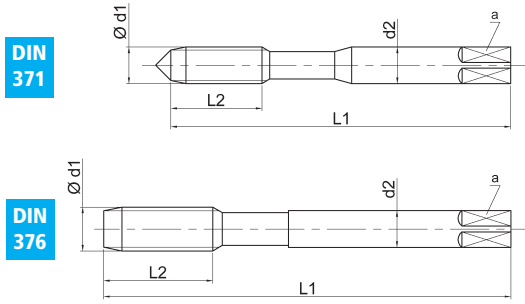
○

XT20M...TX

-

HR **ALTA RESISTENZA**
 High Resistance - Haute Résistance

MASCHI A MACCHINA
 MACHINE TAPS - TARAUDS MACHINE



Profond. di filettatura - Thread depth - Profond. de filetage
 Materiale - Material - Matériau
 Tolleranza - Tolerance - Tolérance
 Trattamento superficiale - Surface treatment - Revêtement

Numero gruppi materiali
 Material's groups number
 Nombre de groupes du matériau

3xD	3,5xD
PM3	PM3
6HX	6HX
TXC	TXC
1.5 1.6	1.5 1.6
3.3 3.4	3.3 3.4
4.4 5.3	4.4 5.3

DIN 371	Ød1 M	P mm	L ₁	L ₂	d ₂ h9	a h12	Z	
3	0,5	56	10	3,5	2,7	3	2,5	
4	0,7	63	13	4,5	3,4	3	3,3	
5	0,8	70	13	6	4,9	3	4,2	
6	1	80	16	6	4,9	3	5	
8	1,25	90	18	8	6,2	3	6,8	
10	1,5	100	20	10	8	3	8,5	

CODE - CODE	
K24M...TXC	K24M...FORY-TXC
•	-
•	-
•	-
•	○
•	○
•	○

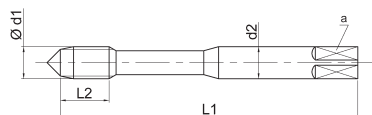
DIN 376	Ød1 M	P mm	L ₁	L ₂	d ₂ h9	a h12	Z	
12	1,75	110	25	9	7	4	10,3	
14	2	110	28	11	9	4	12	
16	2	110	28	12	9	4	14	

CODE - CODE	
K25M...TXC	K25M...FORY-TXC
•	○
•	○
•	○

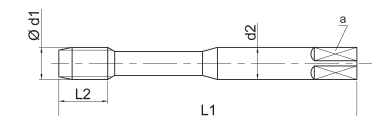
MASCHI A MACCHINA

MACHINE TAPS - TARAUDS MACHINE

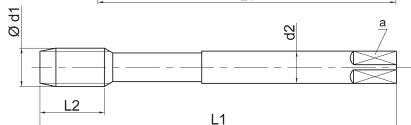
DIN 371



DIN 371



DIN 376



TOP



R15°

TOP



R15°

Profond. di filettatura - Thread depth - Profond. de filetage

Materiale - Material - Matériau

Tolleranza - Tolerance - Tolérance

Trattamento superficiale - Surface treatment - Revêtement

Numero gruppi materiali

Material's groups number

Nombre de groupes du matériau

1,5xD

2,5xD

PM3

PM3

6HX

6HX

TXC

TXC

1.5 1.6

1.5 1.6

3.3 3.4

3.3 3.4

4.4 4.5 4.6

4.4 4.5 4.6

5.3

5.3

DIN 371	$\varnothing d_1$ M	P mm	L_1	L_2 10xP	d_2 h9	a h12	Z	
◀	3	0,5	56	5	3,5	2,7	3	2,5
◀	4	0,7	63	7	4,5	3,4	3	3,3
◀	5	0,8	70	8	6	4,9	3	4,2
◀	6	1	80	10	6	4,9	3	5
	8	1,25	90	13	8	6,2	3	6,8
	10	1,5	100	15	10	8	3	8,5

CODE - CODE	
K40M...TXC	K40M...FOR-TXC
●	-
●	-
●	-
●	○
●	○
●	○

DIN 376	$\varnothing d_1$ M	P mm	L_1	L_2 10xP	d_2 h9	a h12	Z	
	12	1,75	110	18	9	7	4	10,3
	14	2	110	20	11	9	4	12
	16	2	110	20	12	9	4	14

CODE - CODE	
K41M...TXC	K41M...FOR-TXC
●	○
○	○
○	○

Conditionnement / Box:
M3 - M10: 10 pièces / pcs
M12 - M16: 5 pièces / pcs

€ Pag. listino - Price list - Liste des prix

25

25

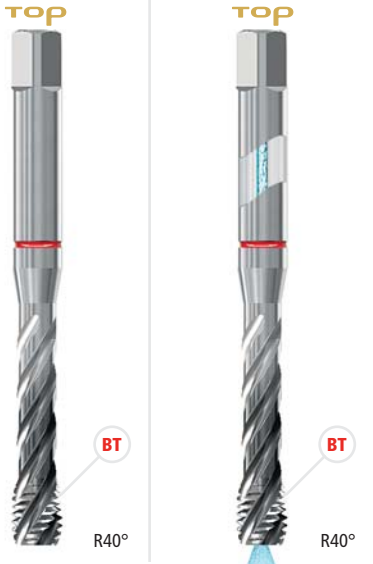
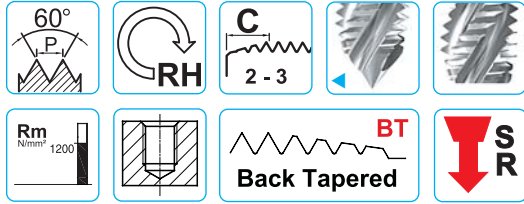
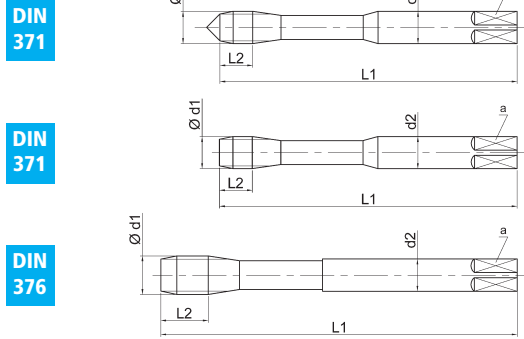
- Norme
- Standard

- Disponibilità sur demande, liste des prix
- Lead time on enquiry, standard price-list

- ★ Uniquement sur demande
- ★ Only on request

HR **ALTA RESISTENZA**
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 MACHINE TAPS - TARAUDS MACHINE



Profond. di filettatura - Thread depth - Profond. de filetage
 Materiale - Material - Matériau
 Tolleranza - Tolerance - Tolérance
 Trattamento superficiale - Surface treatment - Revêtement
 Numero gruppi materiali
 Material's groups number
 Nombre de groupes du matériau

2,5xD	3xD
PM3	PM3
6HX	6HX
TXC	TXC
1.4 1.5	1.4 1.5
3.3 3.4	3.3 3.4

DIN 371	Ød1 M	P mm	L ₁	L ₂ 10xP	d ₂ h9	a h12	Z	
3	0,5	56	5	3,5	2,7	3	2,5	●
4	0,7	63	7	4,5	3,4	3	3,3	●
5	0,8	70	8	6	4,9	3	4,2	●
6	1	80	10	6	4,9	3	5	●
8	1,25	90	13	8	6,2	3	6,8	●
10	1,5	100	15	10	8	3	8,5	●

CODE - CODE	
K80M...TXC	K80M...FOR-TXC
●	-
●	-
●	-
●	○
●	○
●	○

DIN 376	Ød1 M	P mm	L ₁	L ₂ 10xP	d ₂ h9	a h12	Z	
12	1,75	110	18	9	7	4	10,3	●
14	2	110	20	11	9	4	12	●
16	2	110	20	12	9	4	14	●

CODE - CODE	
K81M...TXC	K81M...FOR-TXC
●	○
●	○
●	○

RACCOMANDATO per filettatura rigida
 We recommend Syncro rigid threading
 Recommandé pour le taraudage rigide

1		Acciaio - Steel - Acier		
Acciaio legato Alloyed steel Acier allié	1.4	Acciaio legato - bonificato, fusioni d'acciaio Rm < 850 N/mm², < 250 HB		
		<i>Alloyed steel, tempered steel, steel castings - Acier allié, trempé et revenu, fusion d'acier</i>		
	1.5	Acciaio legato - bonificato Rm 850 ÷ 1200 N/mm², 250 ÷ 350 HB		
		<i>Alloyed steel, tempered steel - Acier allié, trempé et revenu</i>		
	1.6	Acciaio legato - alta resistenza Rm 1200 ÷ 1400 N/mm², 38 ÷ 45 HRC		
		<i>Alloyed steel, high strength steel - Acier allié - haute résistance</i>		
	1.7	Acciaio legato - alta resistenza Rm 1400 ÷ 1600 N/mm², 45 ÷ 49 HRC		
		<i>Alloyed steel, high strength steel - Acier allié - haute résistance</i>		
		W-Nr.	DIN - Germany	UNI - Italy
Da bonifica <i>Heat-treatable steel</i> <i>De revenu</i>		1.7035	41Cr4	41Cr4
		1.8159	50CrV4, 51CrV4	51CrV4
		1.7218	25CrMo4	25CrMo4
		1.7220	34CrMo4	35CrMo4
		1.7225	42CrMo4	42CrMo4
		1.7228	50CrMo4	-
		1.7242	16CrMo4	18CrMo4
		1.6580	30CrNiMo8	30NiCrMo8
		1.6582	34CrNiMo6	35NiCrMo6 (KW)
		1.6511	36CrNiMo4	38NiCrMo4 (KB)
		1.6773	36NiCrMo16	34NiCrMo16
		1.6565	40NiCrMo6	-
	Da nitrurazione <i>Nitriding steel</i> <i>De nitruration</i>		1.8515	31CrMo12
		1.8519	31CrMoV9	-
		1.8507	34CrAlMo7	34CrAlMo7
		1.8509	41CrAlMo7	41CrAlMo7
Da cuscinetti <i>Ball bearing steel - Roulements</i>		1.3505	100Cr6	100Cr6
		1.3537	100CrMo7	100CrMo7
Per molle <i>Spring steel</i> <i>Ressorts</i>		1.5025	51Si7	48Si7
		1.5026	56Si7	55Si7
		1.5027	60Si7	-
		1.7108	60SiCr7	60SiCr8
		1.8159	50CrV4	50CrV4
		1.7176	55Cr3	55Cr3
Fusioni d'acciaio (ghisa acciaiata) <i>Steel castings</i> <i>Acier coulé</i>		1.7701	51CrMoV4	-
		1.0446	GS-45	-
		1.0552	GS-52	-
		1.5919	GS-15CrNi6	-
		1.7218	GS-25CrMo4	-
		1.7220	GS-34CrMo4	-
Per tempra superficiale <i>Surface hardening</i> <i>De durcissement de surface</i>		1.7379	GS-18CrMo9-10	-
		1.7005	45Cr2	-
		1.7006	46Cr2	46Cr2
		1.7043	38Cr4	-
		1.7034	37Cr4	36CrMn4
		1.7223	41CrMo4	41CrMo4

Continua Acciaio legato / Continue Alloyed steel / Acier allié à suivre ►

	W-Nr.	DIN - Germany	UNI - Italy
Per lavorazioni a caldo <i>Hot work tool steel</i> <i>Travail à chaud</i>	1.2767	45NiCrMo16	42NiCrMo 15 7
	1.2713	55NiCrMoV6	-
	1.2714	55NiCrMoV7	55NiCrMoV7KU
	1.2311	40CrMnMo7	35CrMo8KU
	1.2365	X32CrMoV3-3	30CrMoV12-27KU
	1.2343	X38CrMoV5-1	X37CrMoV5-1KU
	1.2344	X40CrMoV5-1	X40CrMoV5-1-1KU
	1.2567	X30WCrV5-3	X30WCrV5-3KU
	1.2581	X30WCrV9-3	X30WCrV9-3KU
Per lavorazioni a freddo <i>Cold work tool steel</i> <i>Travail à froid</i>	1.2080	X210Cr12	X205Cr12KU
	1.2083	X42Cr13	-
	1.2363	X100CrMoV5-1	X100CrMoV5-1KU
	1.2379	X155CrVMo12-1	X155CrVMo12-1KU
	1.2510	100MnCrW4	95MnWCr5KU
	1.2550	60WCrV7	55WCrV8KU
	1.2842	90MnCrV8	90MnVCr8KU
Acciaio rapido HSS, HSS-E <i>High speed steel</i> <i>Acier rapide</i>	1.3202	S 12-1-4-5	(T15)
	1.3207	S 10-4-3-10	HS 10-4-3-10 (T42)
	1.3243	S 6-5-2-5	HS 6-5-2-5 (M35)
	1.3247	S 2-10-1-8	HS 2-9-1-8 (M42)
	1.3343	S 6-5-2	HS 6-5-2 (M2)
	1.3344	S 6-5-3	(M3/2)
	1.3348	S 2-9-2	HS 2-9-2 (M7)
Acciaio rapido sinterizzato HSS-PM <i>Sintered high speed steel</i> <i>Acier fritté</i>	-	HS 6-5-3-8	(ASP2030, ASP30)
	-	HS 10-2-5-8	(ASP2052, ASP52)
	-	HS 6-7-6-10	(ASP2060, ASP60)
1.7 Acciaio speciale Rm<1600 N/mm² <i>Special steel</i> <i>Acier spécial</i>			HARDOX 400
			HARDOX 450
3	Ghisa - Cast Iron - Fonte		
3.1	Ghisa grigia lamellare Rm < 600 N/mm², < 180 HB		
	<i>Lamellar grey cast iron - Fonte grise lamellaire</i>		
	W-Nr.	DIN - Germany	UNI - Italy
	0.6010	GG-10	G 10
0.6015	GG-15	G 15	
0.6020	GG-20	G 20	
3.2	Ghisa grigia lamellare Rm 600 ÷ 1000 N/mm², 180 ÷ 300 HB		
	<i>Lamellar grey cast iron - Fonte grise lamellaire</i>		
	W-Nr.	DIN - Germany	UNI - Italy
	0.6025	GG-25	G 25
	0.6030	GG-30	G 30
0.6035	GG-35	G 35	
0.6040	GG-40	G 40	

Continua Ghisa / Continue Cast Iron / Continuer Fonte ➤

3.3	Ghisa sferoidale Rm < 1000 N/mm², < 300 HB		
	<i>Nodular cast iron - Fonte ductile</i>		
	W-Nr.	DIN - Germany	UNI - Italy
	0.7033	GGG-35.3	-
	0.7040	GGG-40	GS400-12
	0.7043	GGG-40.3	GSO 42/17
	0.7050	GGG-50	GS500-7
	0.7060	GGG-60	GS600-3
	0.7070	GGG-70	GS700-2
	0.7080	GGG-80	GS800-2
	0.7670	GGG-Ni22	-
	0.7683	GGG-Ni35	-
	0.7660	GGG-NiCr20-2	-
0.7677	GGG-NiCr30-1	-	
0.7685	GGG-NiCr35-3	-	
3.4	Ghisa malleabile Rm < 700 N/mm², < 210 HB		
	<i>Malleable cast iron - Fonte malléable</i>		
	W-Nr.	DIN - Germany	UNI - Italy
	0.8035	GTW-35-04	-
	0.8045	GTW-45-07	-
	0.8145	GTS-45-06	-
0.8165	GTS-65-02	-	
0.8170	GTS-70-02	-	
3.5	Ghisa vermicolare a grafite compatta Rm 700 ÷ 1000 N/mm², 200 ÷ 300 HB		
	<i>Compacted cast iron with vermicular graphite - Fonte vermiculaire à graphite compacté</i>		
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.
			(CGI)
		(GGV)	
		(GJV)	
4	Alluminio, Magnesio - Aluminium, Magnesium - Alliage, Magnésium		
4.1	Alluminio / Magnesio non legato Rm < 350 N/mm², < 100 HB		
	<i>Aluminium / Magnesium unalloyed - Aluminium / Magnésium non allié</i>		
	W-Nr.	DIN - Germany	UNI - Italy
	3.2134	G-ALSi5Cu1Mg	3600
	3.2161	G-ALSi8Cu3	5075
	3.2162.05	GD-ALSi8Cu3	-
3.2371	G-ALSi7Mg	7257	
3.2373	G-ALSi9Mg	3051	
4.4	Leghe Al, Si > 10% - truciolo corto Rm < 600 N/mm², < 180HB		
	<i>Al alloys, short chipping - Alliage Al - coupeaux courts</i>		
	W-Nr.	DIN - Germany	UNI - Italy
	3.2381	G-ALSi10Mg	3049
	3.2383	G-ALSi10Mg(Cu)	-
3.2581	G-ALSi12	5079	
3.2583	G-ALSi12(Cu)	3048	

Continua leghe di Magnesio / Continue Magnesium alloys / Alliages de Magnésium à suivre ►

4.5	Leghe standard di magnesio Rm 120 ÷ 300 N/mm²			
	<i>Magnesium standard alloys - Alliages de magnésium standards</i>			
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.	
	3.5200	MgMn2	(MAGNUMINIUM 133)	
	3.5312	MgAl3Zn	(AZ31)	
	3.5632	MgAl6Zu3	(AZ63)	
4.6	Leghe di magnesio ad alta resistenza Rm 240 ÷ 400 N/mm², 70 ÷ 120 HB			
	<i>High strength magnesium alloys - Alliages de magnésium de haute résistance</i>			
	3.5161	MgZn6Zr	(ZK60)	
	3.5612	MgAl6Zn1	(AZ61)	
	5 RAME - Cooper - Cuivre			
5.3	Leghe di rame, β ottone, bronzo - truciolo corto Rm < 700 N/mm², < 200 HB			
	<i>Cooper alloys, hard brass, bronze, short chipping - Alliages de cuivre, αlaiton, bronze, coupeaux courts</i>			
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.	
	Ottone / Brass / Laiton	2.0360	CuZn40 (Ms60)	-
		2.0380	CuZn39Pb2 (Ms58)	-
		2.0410	CuZn44Pb2 (Ms56)	-
		2.0510	CuZn37Al1	-
		2.0550	CuZn40Al2	-
		2.0561	CuZn40Al1	-
		2.0580	CuZn40Mn1Pb	-
2.2140		G-ZnAl4	(ZAMAK)	
Bronze / Bronze	2.1086	G-CuSn10Zn	-	
	2.1093	G-CuSn6ZnNi	-	
	2.1096	G-CuSn5ZnPb	-	
5.4	Bronzo ad alta resistenza Rm < 1500 N/mm², < 440 HB			
	<i>High strength bronze - Bronze haute résistance</i>			
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.	
	2.0932	CuAl8Fe3	(Ampco12)	
	2.0936	CuAl10Fe3Mn2	(Ampco16, Ampco 15)	
	2.0940	CuAl10Fe	-	
	2.0966	CuAl10Ni5Fe4	(Ampco)	
	2.0978	CuAl11Ni6Fe5	-	
	-	CuAl11Fe4	(Ampco 20)	
2.0882	CuNi30MnFe	-		

8	Materie plastiche - Synthetic materials - Matériaux de plastique		
8.2	Materiali termoindurenti - truciolo corto Rm < 110 N/mm²		
	<i>Thermosetting plastics, short chipping - Matériaux thermodurcissables, coupeaux courts</i>		
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.
	PF	Phenol formaldehyde	Pertinax
	MF	Melamine formaldehyde	Albanit, Resopal
	UF	Urea formaldehyde	Bakelite
8.3	Materie plastiche con fibre di rinforzo Rm 800 ÷ 1500 N/mm², 240 ÷ 440 HB		
	<i>Reinforced plastic materials - Plastiques avec fibres de renfort</i>		
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.
	AFK	Aramid	Kevlar
	BFK	Boron	Boro
	CFK	Carbon fibre	Résines + Fibres de carbone
	GFK	Glass fibre	Résines + Fibres de verre
	SFK	Synthetic fibre	Résines + Fibres synthétiques
9	Materiali Speciali - Special Materials - Matériaux spéciaux		
9.1	Materiali metallo - ceramici (Cermets) Rm < 1700 N/mm², < 51 HRC		
	<i>TIC - Hard materials - Matériaux métalliques, céramiques (Cermet)</i>		
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.
			Ferritan
			Ferro Titanit
			Ferrotic
9.3	Leghe di tungsteno Rm < 1800 N/mm², < 52 HRC		
	<i>Tungsten alloys - Alliages de tungstène</i>		
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.
			Anviloy
			Denal
			Densimet
			Mallory
10	Graphite - Graphite		
10.1	Graphite Rm < 100 N/mm²		
	<i>Graphite</i>		
	W-Nr.	DIN - Germany	Denom. comm./Trade name/Nom comm.
			Graphit R8340
			Technograph 15
			Technograph 30
			R8510
			R8650
			Union Poco EDM1
			Union Poco EDM3



La linea di utensili, definita **"TOP"** è stata creata come risposta alle esigenze evolutive del mercato e rappresenta la più alta espressione qualitativa dei prodotti UFS. Ottima per applicazioni in tutte le lavorazioni di materiali difficili e per alte produzioni automatizzate. Le caratteristiche e gli impieghi sono sviluppati nelle brochure specifiche.

The "TOP" line was created as a specific answer to the market evolution needs, and represents the highest quality expression of the UFS products. Excellent for application on difficult materials and on high automatized productions. See all the technical information and practical use on the specific brochures.

La ligne d'outils "TOP" a été créée pour répondre aux exigences d'évolution du marché et représente la meilleure qualité des produits UFS. Une ligne d'excellence pour les applications sur matériaux difficiles et production automatisée. Voir caractéristiques techniques et utilisations sur les brochures spécifiques.

