

Lo stile della riqualificazione

The style of redevelopment

Le più antiche officine ferroviarie italiane vennero realizzate a Torino intorno alla metà dell'Ottocento. Con la crescita della città e la necessità di spazio dovuta all'aumento della produzione, il consiglio di amministrazione della Ferrovie Alta Italia decise di spostare gli impianti riunendo al tempo stesso le due officine in un'unica struttura individuata nell'allora periferia di Torino ma oggi totalmente immersa nella città. Nacquero così le OGR, le Officine Grandi Riparazioni, un'eccellenza al tempo; entrarono in funzione nel 1895.

Negli anni '90 gli impianti delle OGR sono stati dismessi e si pensava di abbattere tutto il complesso. Ma poi, per la salvaguardia dell'identità e della memoria, c'è stata la riqualificazione delle OGR; un'eccellenza, l'unico esempio di riconversione industriale in Europa con tre "anime".

Un'impresa complessa, per i vincoli architettonici e storico-artistici esistenti, il grado di ammaloramento della struttura, l'estensione e le peculiarità del sito caratterizzato da fattori di inquinamento ambientale e bellico, la molteplicità delle destinazioni d'uso e delle tipologie di utenti, e persino l'emergere in corso d'opera di alcuni elementi non prevedibili, che hanno comportato l'adozione di varianti suppletive e tecniche.

Nel 2014 iniziano i lavori di riqualificazione che hanno posto particolare attenzione all'integrare soluzioni ad alto contenuto tecnologico, sostenibilità ambientale, salvaguardia del valore storico e flessibilità degli spazi.

Le OGR quale hub di sperimentazione e produzione di contemporaneità in continua trasformazione e dialogo con soggetti protagonisti dell'arte e dell'innovazione a livello globale. Tre anime che si integrano tra loro come un ecosistema per lo sviluppo e la crescita del capitale culturale, sociale ed economico del territorio: la ricerca artistica in tutte le sue declinazioni (nelle Officine Nord), la ricerca scientifica, tecnologica e industriale (nelle Officine Sud), l'enogastronomia con attività di somministrazione di food & beverage volte a valorizzare, in particolare, le produzioni a filiera corta (nel Transetto che divide le due aree).

Per le arti contemporanee, gli spazi polifunzionali ospitano mostre, spettacoli, concerti, eventi di teatro, danza e persino esperienze di realtà virtuale immersiva, in una vera e propria digital gallery.

L'innovation hub internazionale, una lunga promenade di circa 200 metri che mantiene l'immagine storica della navata centrale nella propria integrità con la luce naturale che scende dal tetto. Nelle due campate laterali, gli ambienti vetrati per le sale riunioni e i blocchi di uffici open space su due piani testimoniano la rinnovata identità del luogo; un hub per la ricerca, acceleratore delle migliori start up innovative, polo per lo sviluppo progettuale nel settore delle industrie creative, laboratorio dedicato agli Smart Data e centro di sperimentazione funzionale.

The oldest Italian railway factories were built in Turin around the middle of the 19th century.

With the growth of the city and the need for space due to increasing production, the board of directors of Ferrovie Alta Italia decided to move the facilities, combining the two sections in a single factory on what was then the edge of the city, but is today completely surrounded by it. This was the start of the OGRs (Officine Grandi Riparazioni); these excellent industrial sites came into operation in 1895.

In the 1990s the OGRs ceased production and the intention was to demolish the entire complex. But instead their identity and memory were rescued by the redevelopment of the OGRs: an excellent and unique example of European industrial refurbishment with three "strands".

It was a complicated venture due to existing architectural, historical and artistic constraints, the serious deterioration of the building, its size and the specific characteristics of the site, which was affected by environmental pollution and war damage, multiple uses and users, and even the emergence during the course of the work of unforeseen obstacles that required additional work and expertise.

2014 saw the start of the redevelopment work, which focused particularly on the inclusion of high-tech solutions, environmental sustainability and protection of the historical value of the site, as well as flexibility.

The OGR as a hub for experimentation and contemporary production, in constant transformation and dialogue with leading international figures in art and innovation. Three strands come together as an ecosystem for the development and growth of the area's cultural, social and economic assets: artistic research in all its forms (in the Officine Nord), science, technology and industry (in the Officine Sud), the promotion of food and wine, with a particular focus on local, short production chains (in the Transept between the two).

For the contemporary arts, the multi-purpose spaces host exhibitions, shows, concerts, theatre, dance and even immersive virtual reality experiences in a truly digital gallery.

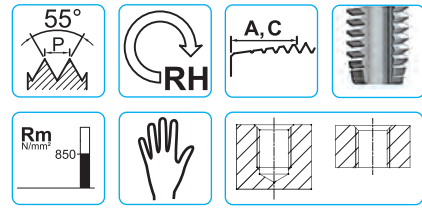
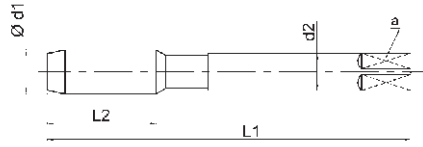
The international innovation hub is a promenade some 200 metres long that retains the historical image of the central nave, with natural light entering from the ceiling. In the two side aisles, glazed meeting rooms and blocks of open plan offices on two levels attest to the site's new identity as a hub for research, an accelerator for innovative startups, a centre for project design in the creative industries, a laboratory for Smart Data and a place of functional experimentation.



GAS - RP
NPSM - NPSF

Social Table, Officine Grandi Riparazioni, Torino
Social Table, OGR, Turin

DIN 5157



Profondità di filettatura - Thread depth - Prof. de filetage	2xD	2xD
Materiale - Tool Material - Substrat	HSS	HSS
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228	ISO 228
Trattamento superficiale - Surface treatment - Revêtement		

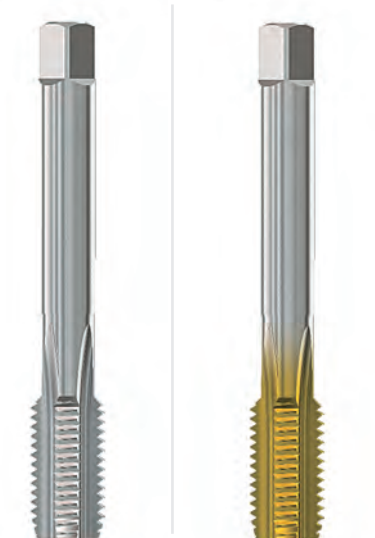
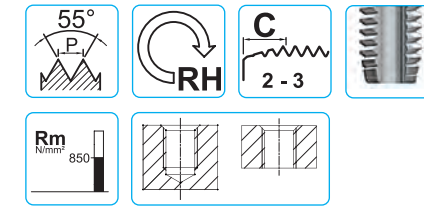
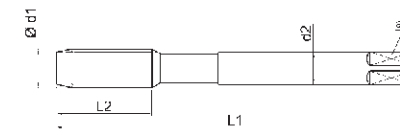
Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	63	18	7	5,5	3	8,8
1/4	19	13,16	70	20	11	9	4	11,8
3/8	19	16,66	70	20	12	9	4	15,25
1/2	14	20,96	80	22	16	12	4	19
5/8	14	22,91	80	22	18	14,5	4	21
3/4	14	26,44	90	22	20	16	4	24,5
7/8	14	30,20	90	22	22	18	4	28,25
1"	11	33,25	100	25	25	20	5	30,75
1"1/8	11	37,90	125	32	28	22	6	35,5
1"1/4	11	41,91	125	32	32	24	6	39,5
1"1/2	11	47,8	140	32	36	29	6	45,25
1"3/4	11	53,75	140	32	40	32	6	51,10
2"	11	59,61	160	36	45	35	6	57

Finitore Bottoming - Finisseur	Serie Set - Jeu
03G1/8	00G1/8
03G1/4	00G1/4
03G3/8	00G3/8
03G1/2	00G1/2
03G5/8	00G5/8
03G3/4	00G3/4
03G7/8	00G7/8
03G1"	00G1"
03G1"1/8	00G1"1/8
03G1"1/4	00G1"1/4
03G1"1/2	00G1"1/2
03G1"3/4	00G1"3/4
03G2"	00G2"

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min			
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	•1.1	•1.2	•1.3	•1.4
M	Acciaio INOX - Stainless steel - Acier inoxydable	▷2.1	▷2.2	▷2.3	
K	Ghisa - Cast iron - Fonte	▷3.1	▷3.4		
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.1	•4.2	•4.3	▷4.4
N	Leghe di Rame - Copper alloys - Alliages de cuivre	•5.1	•5.2	•5.3	

• Raccomandato - Optimal - Recommandé ▷ Adatto - Suitable - Adapté

DIN 5156



Profondità di filettatura - Thread depth - Prof. de filetage	1,5xD	1,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228	ISO 228
Trattamento superficiale - Surface treatment - Revêtement		TIN

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	22	11	9	3	11,8
3/8	19	16,66	100	22	12	9	3	15,25
1/2	14	20,96	125	25	16	12	4	19
5/8	14	22,91	125	25	18	14,5	4	21
3/4	14	26,44	140	25	20	16	4	24,5
7/8	14	30,20	150	28	22	18	4	28,25
1"	11	33,25	160	30	25	20	5	30,75
1"1/8	11	37,90	170	30	28	22	6	35,5
1"1/4	11	41,91	170	30	32	24	6	39,5
1"1/2	11	47,8	190	32	36	29	6	45,25
1"3/4	11	53,75	190	32	40	32	6	51,1
2"	11	59,61	220	40	45	35	6	57
2"1/2	11	75,18	250	50	45	35	8	72,6

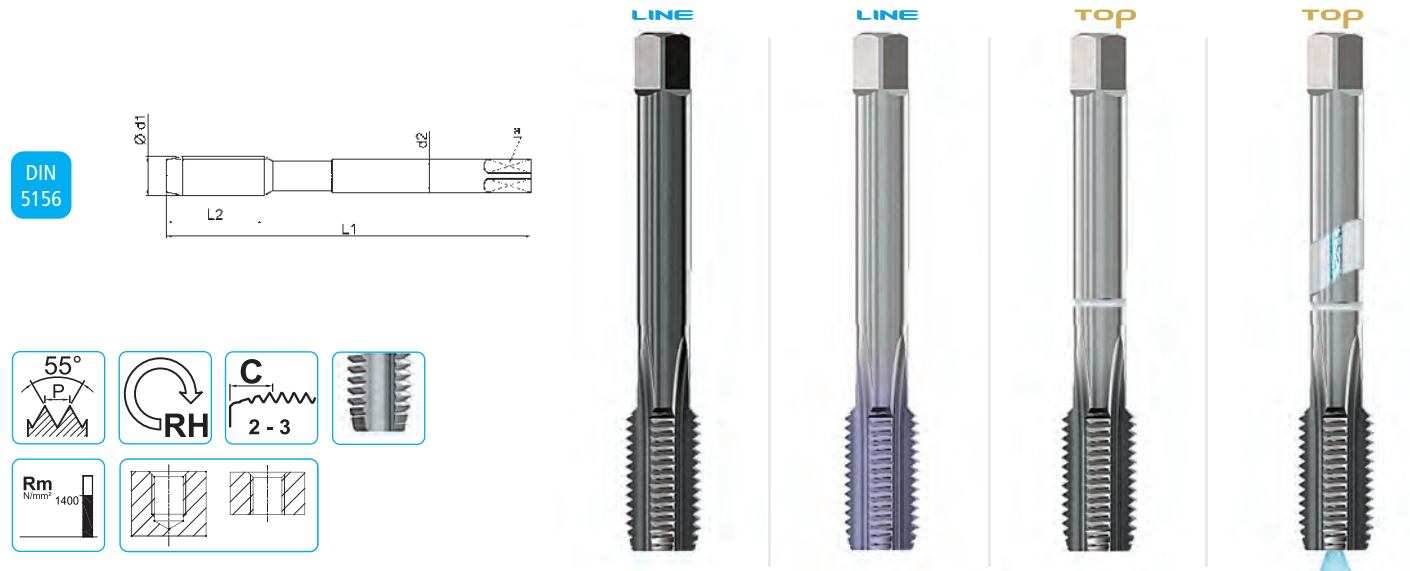
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E21G1/2	E21G1/2T
E21G5/8	E21G5/8T
E21G3/4	E21G3/4T
E21G7/8	E21G7/8T
E21G1"	E21G1"T
E21G1"1/8	E21G1"1/8T
E21G1"1/4	E21G1"1/4T
E21G1"1/2	E21G1"1/2T
E21G1"3/4	E21G1"3/4T
E21G2"	E21G2"T
E21G2"1/2	E21G2"1/2T

■ = HSS

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min							
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	▷1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20
K	Ghisa - Cast iron - Fonte	▷3.4 8-10				▷3.4 15-20			
N	Leghe di Alluminio - Al alloys - Alliage Al	▷4.2 15-20	▷4.3 10-15			▷4.2 25-30	▷4.3 20-25		
N	Leghe di Rame - Copper alloys - Alliages de cuivre	▷5.2 10-15	▷5.3 15-20			▷5.2 20-25	▷5.3 25-30		
N	Materiali termoindurenti Duroplastic - Thermodurcissables	▷8.2 8-10				▷8.2 10-15			

• Raccomandato - Optimal - Recommandé ▷ Adatto - Suitable - Adapté

ISO 228 GG GHISA - CAST IRON - FONTE



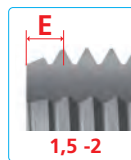
Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3xD	3xD	3,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE	PM3	PM3
Tolleranza - Thread tolerance - Tolérance du filetage	ISO228X	ISO228X	ISO228X	ISO228X
Trattamento superficiale - Surface treatment - Revêtement	NQ	TiCN	TiAlN	TiAlN

$\varnothing d_1$ GAS	P TPI	\varnothing mm	L_1	L_2	d_2 h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	4	8,8
1/4	19	13,16	100	22	11	9	4	11,8
3/8	19	16,66	100	22	12	9	4	15,25
1/2	14	20,96	125	25	16	12	4	19
3/4	14	26,44	140	25	20	16	4	24,5
1"	11	33,25	160	30	25	20	5	30,75
1 1/4"	11	41,91	170	30	32	24	6	39,5
1 1/2"	11	47,8	190	32	36	29	6	45,25
1/8	28	9,73	90	15	7	5,5	4	8,8
1/4	19	13,16	100	22	11	9	4	11,8
3/8	19	16,66	100	22	12	9	4	15,25
1/2	14	20,96	125	25	16	12	5	19

CODE	
E27G1/8NQ	E27G1/8CT
E27G1/4NQ	E27G1/4CT
E27G3/8NQ	E27G3/8CT
E27G1/2NQ	E27G1/2CT
E27G3/4NQ	E27G3/4CT
E27G1"NQ	E27G1"CT
E27G1"1/4NQ	E27G1"1/4CT
E27G1"1/2NQ	E27G1"1/2CT
	* K27G1/8TX
	* K27G1/4TX
	* K27G3/8TX
	* K27G1/2TX
	* K27G1/8FOR-TX
	* K27G1/4FOR-TX
	* K27G3/8FOR-TX
	* K27G1/2FOR-TX

■ = HSS

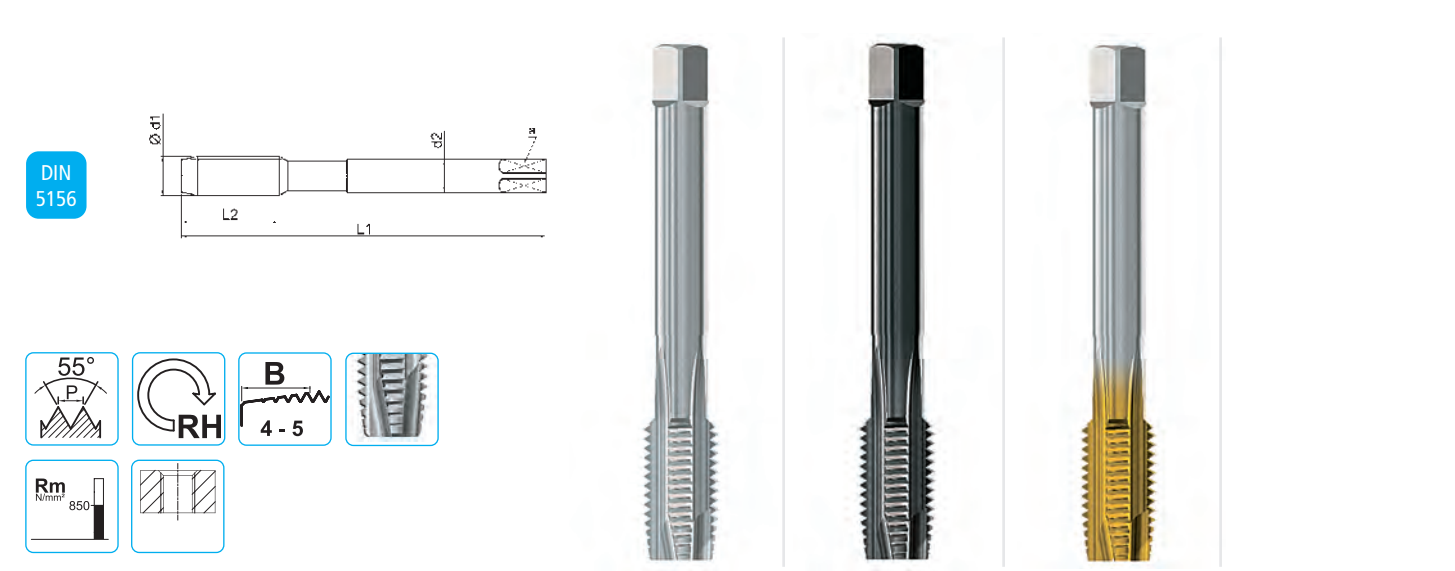
* A richiesta:/On request/
 Sur demande:



ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min												
K	Ghisa - Cast iron - Fonte	•3.1 10-15	•3.2 8-10	•3.3 8-10	•3.4 10-15	•3.1 20-25	•3.2 15-20	•3.3 15-20	•3.4 20-25	•3.1 25-30	•3.2 20-25	•3.3 20-25	•3.4 25-30	•3.5 10-15
N	Leghe Al, Si > 10% Al alloys, Si > 10% - Alliage Al, Si > 10%	•4.4 10-15				•4.4 25-30								
N	Leghe di magnesio Magnesium alloys - Alliages de magnésium	•4.5 10-15				•4.5 20-30								
N	Leghe di Rame - Copper alloys - Alliages de cuivre	•5.3 18-20				•5.3 25-30								
N	Materiali termodurcibili Duroplastic - Thermodurcissables	•8.2 8-10				•8.2 10-15								

• Raccomandato - Optimal - Recommandé ◊ Adatto - Suitable - Adapté

ISO 228 USO GENERALE - GENERAL PURPOSE - USAGE GÉNÉRAL



Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3xD	3xD
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228	ISO 228	ISO 228
Trattamento superficiale - Surface treatment - Revêtement		V	TIN

$\varnothing d_1$ GAS	P TPI	\varnothing mm	L_1	L_2	d_2 h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	22	11	9	3	11,8
3/8	19	16,66	100	22	12	9	4	15,25
1/2	14	20,96	125	25	16	12	4	19
5/8	14	22,91	125	25	18	14,5	4	21
3/4	14	26,44	140	25	20	16	4	24,5
7/8	14	30,20	150	28	22	18	4	28,25
1"	11	33,25	160	30	25	20	5	30,75
1 1/8"	11	37,90	170	30	28	22	6	35,5
1 1/4"	11	41,91	170	30	32	24	6	39,5
1 1/2"	11	47,8	190	32	36	29	6	45,25
2"	11	59,61	220	40	45	35	6	57

CODE		
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E25G1/4	E25G1/4V	E25G1/4T
E25G3/8	E25G3/8V	E25G3/8T
E25G1/2	E25G1/2V	E25G1/2T
E25G5/8	-	-
E25G3/4	E25G3/4V	E25G3/4T
E25G7/8	-	-
E25G1"	E25G1"V	E25G1"T
E25G1"1/8	-	-
E25G1"1/4	-	-
E25G1"1/2	-	-
E25G2"	-	-

■ = HSS

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min											
P	Acciaio - Steel - Acier - Rm \leq 850 N/mm ²	•1.1 10-15	•1.2 10-15	•1.3 10-12	•1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	•1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20
M	Acciaio inox - Stainless steel - Acier inoxydable												
K	Ghisa - Cast iron - Fonte									•3.3 10-15	•3.4 15-20		
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.1 10-15	•4.2 15-20			•4.1 10-15	•4.2 15-20			•4.1 20-25	•4.2 25-30	•4.3 20-25	
N	Leghe di Rame - Copper alloys - Alliages de cuivre	•5.1 8-12	•5.2 10-15			•5.1 8-12	•5.2 10-15			•5.1 15-20	•5.2 20-25		

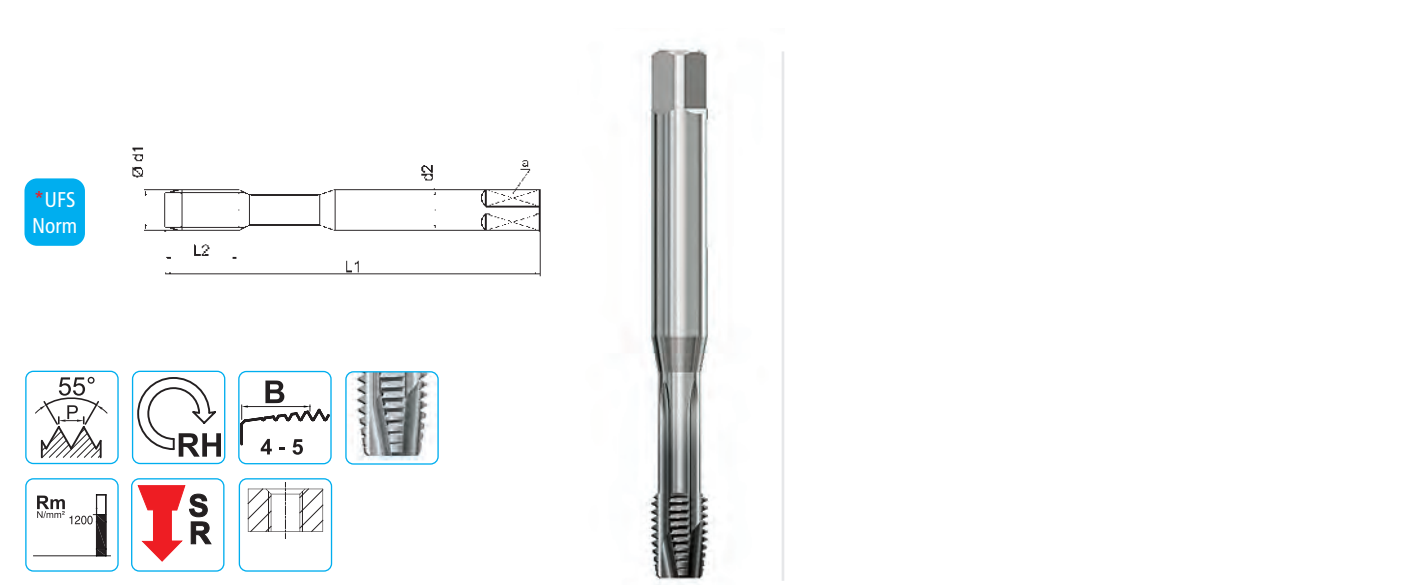
• Raccomandato - Optimal - Recommandé ◊ Adatto - Suitable - Adapté



Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3xD
Materiale - Tool Material - Substrat	PM3	HSSP
Tolleranza - Thread tolerance - Tolérance du filetage	ISO228X	ISO228
Trattamento superficiale - Surface treatment - Revêtement	XP	TIN-G

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	CODE
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	22	11	9	4	11,8
3/8	19	16,66	100	22	12	9	4	15,25
1/2	14	20,96	125	25	16	12	4	19
3/4	14	26,44	140	25	20	16	4	24,5
								K25G1/8XP
								P25G1/8TG
								K25G1/4XP
								P25G1/4TG
								K25G3/8XP
								P25G3/8TG
								K25G1/2XP
								P25G1/2TG
								K25G3/4XP
								P25G3/4TG

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min								
P	Acciaio - Steel - Acier - Rm ≤ 1200 N/mm²	>1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	•1.5 5-12	•1.2 20-30	•1.3 20-25	•1.4 15-20	>1.5 5-12
M	Acciaio inox - Stainless steel - Acier inoxydable	•2.1 10-15	•2.2 8-10	•2.3 6-8						
K	Ghisa - Cast iron - Fonte	•3.3 10-15	•3.4 15-20				•3.3 10-15	•3.4 15-20		
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.2 25-30	•4.3 20-25				•4.3 20-25			
N	Leghe di Rame - Copper alloys - Alliages de cuivre Truciolo lungo - Long chipping - Copeaux longs	•5.2 20-25					•5.2 20-25			



Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3xD
Materiale - Tool Material - Substrat	PM3	
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X	
Trattamento superficiale - Surface treatment - Revêtement	TXC	

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h6	a h12	Z	CODE
1/8	28	9,73	90	10	10	8	3	8,8
1/4	19	13,16	100	13,5	12	9	3	11,8
3/8	19	16,66	100	13,5	16	12	4	15,25
1/2	14	20,96	125	18	20	16	4	19
								S24G1/8TXC
								S24G1/4TXC
								S24G3/8TXC
								S24G1/2TXC

* Dimensioni a norma di fabbrica
 Dimensions according to standard factory
 Dimensions selon la norme d'usine

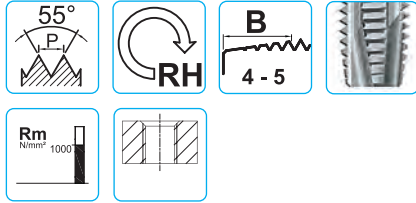
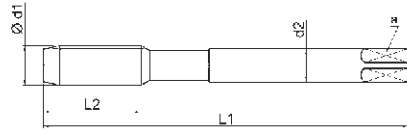
ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min				
P	Acciaio - Steel - Acier - Rm < 1200 N/mm²	•1.1 40-45	•1.2 40-45	•1.3 35-40	•1.4 25-30	•1.5 10-15
M	Acciaio INOX - Stainless steel - Acier inoxydable	•2.1 20-25	•2.2 15-20	•2.3 10-15	•2.3 10-12	
K	Ghisa - Cast iron - Fonte	•3.3 20-25	•3.4 25-30			
N	Leghe di Alluminio - Al alloys - Alliage Al Si < 10%	•4.1 30-40	•4.2 45-50	•4.3 30-40		
N	Leghe di Rame - Copper alloys - Alliages de cuivre Truciolo lungo - Long chipping - Copeaux longs	•5.1 20-25	•5.2 25-30			
S	Leghe di titanio - Titanium alloys Alliage de titane Rm < 900 N/mm²	•6.1 20-30	•6.2 12-15			
S	Leghe di Nichel - Nickel alloys Alliages de nickel Rm < 900 N/mm²	•7.1 20-30	•7.2 8-12			

ISO 228

INOX

ACCIAIO INOSSIDABILE - STAINLESS STEEL - ACIER INOXYDABLE

DIN 5156



Profondità di filettatura - Thread depth - Prof. de filetage	3xD
Materiale - Tool Material - Substrat	HSSV3
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X
Trattamento superficiale - Surface treatment - Revêtement	TXC

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	22	11	9	4	11,8
3/8	19	16,66	100	22	12	9	4	15,25
1/2	14	20,96	125	25	16	12	4	19
3/4	14	26,44	140	25	20	16	4	24,5

CODE
V25G1/8TXC
V25G1/4TXC
V25G3/8TXC
V25G1/2TXC
V25G3/4TXC

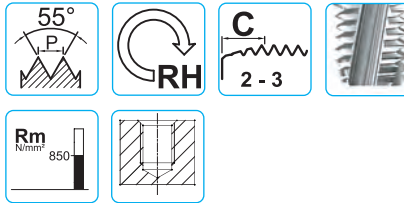
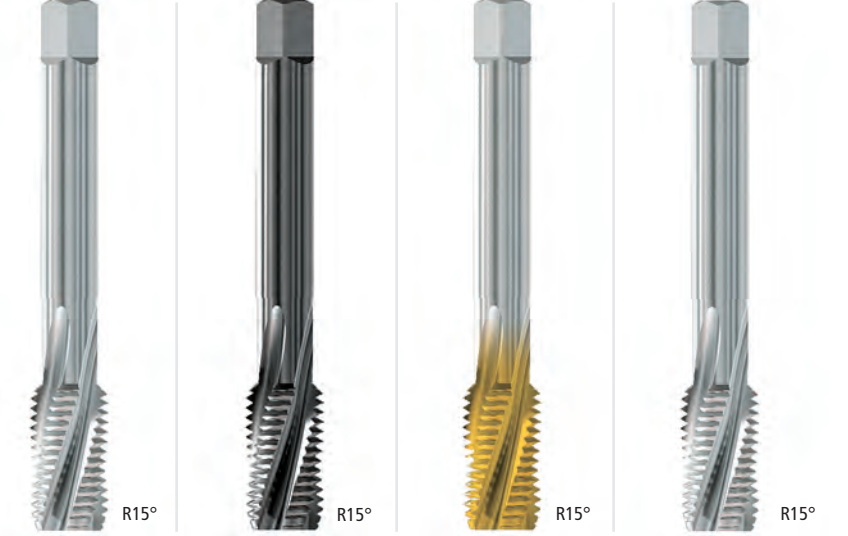
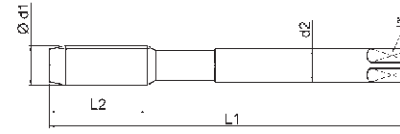
ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min				
P	Acciaio - Steel - Acier - Rm ≤ 1200 N/mm ²	<table border="1"> <tr> <td>•1.3 20-25</td> <td>•1.4 15-20</td> <td>•1.5 5-12</td> </tr> </table>	•1.3 20-25	•1.4 15-20	•1.5 5-12	
•1.3 20-25	•1.4 15-20	•1.5 5-12				
M	Acciaio inox - Stainless steel - Acier inoxydable	<table border="1"> <tr> <td>•2.1 10-15</td> <td>•2.2 8-10</td> <td>•2.3 6-8</td> <td>•2.4 3-6</td> </tr> </table>	•2.1 10-15	•2.2 8-10	•2.3 6-8	•2.4 3-6
•2.1 10-15	•2.2 8-10	•2.3 6-8	•2.4 3-6			

• Raccomandato - Optimal - Recommandé ◊ Adatto - Suitable - Adapté

ISO 228

USO GENERALE - GENERAL PURPOSE - USAGE GÉNÉRAL

DIN 5156



Profondità di filettatura - Thread depth - Prof. de filetage	1,5xD	1,5xD	1,5xD	1,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	ISO228	ISO228	ISO228	ISO228+0,05
Trattamento superficiale - Surface treatment - Revêtement		V	TIN	

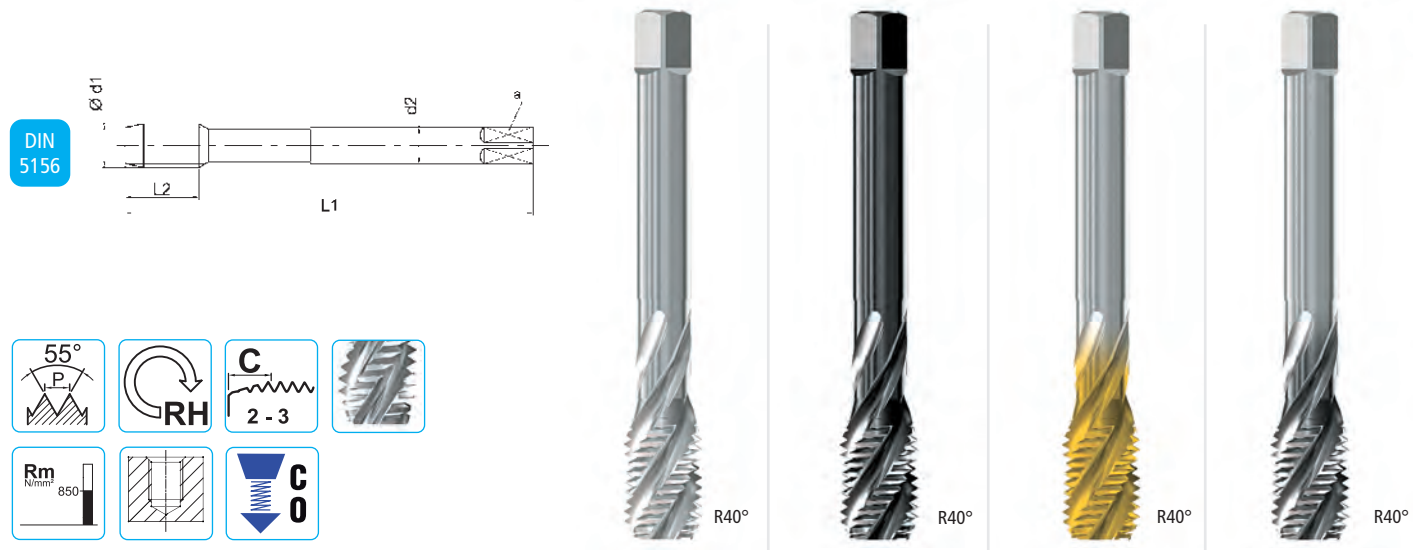
Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	22	11	9	3	11,8
3/8	19	16,66	100	22	12	9	3	15,25
1/2	14	20,96	125	25	16	12	4	19
3/4	14	26,44	140	25	20	16	4	24,5
1"	11	33,25	160	30	25	20	5	30,75
1 1/8	11	37,90	170	30	28	22	6	35,5
1 1/4	11	41,91	170	30	32	24	6	39,5
1 1/2	11	47,8	190	32	36	29	6	45,25
2"	11	59,61	220	40	45	35	6	57,2
2 1/2	11	75,18	250	50	45	35	8	72,8

CODE			
E41G1/8	E41G1/8V	E41G1/8T	E41G1/8+0,05
E41G1/4	E41G1/4V	E41G1/4T	E41G1/4+0,05
E41G3/8	E41G3/8V	E41G3/8T	E41G3/8+0,05
E41G1/2	E41G1/2V	E41G1/2T	E41G1/2+0,05
E41G3/4	E41G3/4V	E41G3/4T	E41G3/4+0,05
E41G1"	E41G1"V	E41G1"T	E41G1"+0,05
E41G1"1/8	-	-	-
E41G1"1/4	-	-	-
E41G1"1/2	-	-	-
E41G2"	-	-	-
E41G2"1/2	-	-	-

■ = HSS

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min																
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm ²	<table border="1"> <tr> <td>◊1.1 10-15</td> <td>•1.2 10-15</td> <td>•1.3 10-12</td> <td>◊1.4 8-10</td> <td>•1.1 10-15</td> <td>•1.2 10-15</td> <td>•1.3 10-12</td> <td>◊1.4 8-10</td> <td>•1.1 20-30</td> <td>•1.2 20-30</td> <td>•1.3 20-25</td> <td>•1.4 15-20</td> <td>◊1.1 10-15</td> <td>•1.2 10-15</td> <td>•1.3 10-12</td> <td>◊1.4 8-10</td> </tr> </table>	◊1.1 10-15	•1.2 10-15	•1.3 10-12	◊1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	◊1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	◊1.1 10-15	•1.2 10-15	•1.3 10-12	◊1.4 8-10
◊1.1 10-15	•1.2 10-15	•1.3 10-12	◊1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	◊1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	◊1.1 10-15	•1.2 10-15	•1.3 10-12	◊1.4 8-10			
K	Ghisa - Cast iron - Fonte	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>◊3.3 10-15</td><td>•3.4 15-20</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>									◊3.3 10-15	•3.4 15-20						
								◊3.3 10-15	•3.4 15-20									
N	Leghe di Alluminio - Al alloys - Alliage Al	<table border="1"> <tr> <td>◊4.1 10-15</td><td>•4.2 15-20</td><td></td><td></td><td>•4.1 10-15</td><td>•4.2 15-20</td><td></td><td></td><td>◊4.1 20-25</td><td>•4.2 25-30</td><td>◊4.3 20-25</td><td></td><td>◊4.1 10-15</td><td>•4.2 15-20</td><td></td><td></td> </tr> </table>	◊4.1 10-15	•4.2 15-20			•4.1 10-15	•4.2 15-20			◊4.1 20-25	•4.2 25-30	◊4.3 20-25		◊4.1 10-15	•4.2 15-20		
◊4.1 10-15	•4.2 15-20			•4.1 10-15	•4.2 15-20			◊4.1 20-25	•4.2 25-30	◊4.3 20-25		◊4.1 10-15	•4.2 15-20					
N	Leghe di Rame - Copper alloys - Alliages de cuivre	<table border="1"> <tr> <td>◊5.1 8-12</td><td>•5.2 10-15</td><td></td><td></td><td>•5.1 8-12</td><td>•5.2 10-15</td><td></td><td></td><td>◊5.1 15-20</td><td>•5.2 20-25</td><td></td><td></td><td>◊5.1 8-12</td><td>•5.2 10-15</td><td></td><td></td> </tr> </table>	◊5.1 8-12	•5.2 10-15			•5.1 8-12	•5.2 10-15			◊5.1 15-20	•5.2 20-25			◊5.1 8-12	•5.2 10-15		
◊5.1 8-12	•5.2 10-15			•5.1 8-12	•5.2 10-15			◊5.1 15-20	•5.2 20-25			◊5.1 8-12	•5.2 10-15					

• Raccomandato - Optimal - Recommandé ◊ Adatto - Suitable - Adapté



Profondità di filettatura - Thread depth - Prof. de filetage	2,5xD	2,5xD	2,5xD	2,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228	ISO 228	ISO 228	ISO 228
Trattamento superficiale - Surface treatment - Revêtement		V	TIN	XP

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	15	11	9	3	11,8
3/8	19	16,66	100	15	12	9	4	15,25
1/2	14	20,96	125	18	16	12	4	19
5/8	14	22,91	125	18	18	14,5	4	21
3/4	14	26,44	140	20	20	16	4	24,5
7/8	14	30,20	150	20	22	18	4	28,25
1"	11	33,25	160	24	25	20	5	30,75
1 1/4"	11	41,91	170	24	32	24	6	39,5
1 1/2"	11	47,8	190	27	36	29	6	45,25
2"	11	59,61	220	32	45	35	6	57,2

CODE			
E61G1/8	E61G1/8V	E61G1/8T	E61G1/8XP
E61G1/4	E61G1/4V	E61G1/4T	E61G1/4XP
E61G3/8	E61G3/8V	E61G3/8T	E61G3/8XP
E61G1/2	E61G1/2V	E61G1/2T	E61G1/2XP
E61G5/8	E61G5/8V	E61G5/8T	E61G5/8XP
E61G3/4	E61G3/4V	E61G3/4T	E61G3/4XP
E61G7/8	E61G7/8V	E61G7/8T	E61G7/8XP
E61G1"	E61G1"V	E61G1"T	E61G1"XP
E61G1" 1/4	E61G1" 1/4V	-	-
E61G1" 1/2	E61G1" 1/2V	-	-
E61G2"	E61G2"V	-	-

■ = HSS

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
		▷1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	▷1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20
M	Acciaio inox - Stainless steel - Acier inoxydable													▷2.1 10-15	▷2.2 8-10		
K	Ghisa - Cast iron - Fonte									▷3.3 10-15	▷3.4 15-20			▷3.3 10-15	▷3.4 15-20		
N	Leghe di Alluminio - Al alloys - Alliage Al	▷4.1 10-15	•4.2 15-20			•4.1 10-15	•4.2 15-20			▷4.1 20-25	•4.2 25-30	▷4.3 20-25		•4.2 25-30	▷4.3 20-25		
N	Leghe di Rame - Copper alloys - Alliages de cuivre	▷5.1 8-12	▷5.2 10-15			•5.1 8-12	•5.2 10-15			▷5.1 15-20	•5.2 20-25			•5.2 20-25			

• Raccomandato - Optimal - Reconnu ▷ Adatto - Suitable - Adapté



Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3xD	3xD	3xD
Materiale - Tool Material - Substrat	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X	ISO 228X	ISO 228X	ISO 228X
Trattamento superficiale - Surface treatment - Revêtement		V	TIN-G	XP

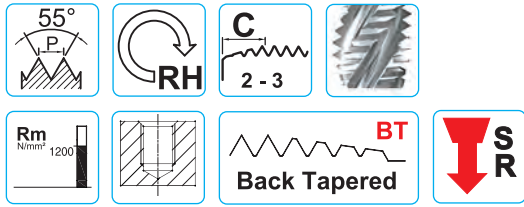
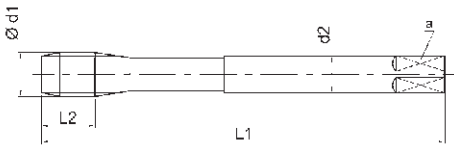
Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	15	11	9	3	11,8
3/8	19	16,66	100	15	12	9	4	15,25
1/2	14	20,96	125	18	16	12	4	19

CODE			
E93G1/8	E93G1/8V	E93G1/8TG	E93EG1/8XP
E93G1/4	E93G1/4V	E93G1/4TG	E93EG1/4XP
E93G3/8	E93G3/8V	E93G3/8TG	E93EG3/8XP
E93G1/2	E93G1/2V	E93G1/2TG	E93EG1/2XP

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
		▷1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.2 20-30	•1.3 20-25	•1.4 15-20	▷1.5 5-12	•1.2 20-30	•1.3 20-25	•1.4 15-20	▷1.5 5-12
P	Acciaio - Steel - Acier - Rm ≤ 1200 N/mm²	▷1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.1 10-15	•1.2 10-15	•1.3 10-12	▷1.4 8-10	•1.2 20-30	•1.3 20-25	•1.4 15-20	▷1.5 5-12	•1.2 20-30	•1.3 20-25	•1.4 15-20	▷1.5 5-12
M	Acciaio inox - Stainless steel - Acier inoxydable									•2.1 6-8	•2.2 5-7			•2.1 10-15	•2.2 8-10	•2.3 6-8	
N	Leghe di Alluminio - Al alloys - Alliage Al									•4.2 15-20				•4.3 20-25			
N	Leghe di Rame - Copper alloys - Alliages de cuivre	•5.1 8-12	•5.2 10-15											•5.2 20-25			

• Raccomandato - Optimal - Reconnu ▷ Adatto - Suitable - Adapté

DIN 5156



Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3,5xD	
Materiale - Tool Material - Substrat	PM3	PM3	
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X	ISO 228X	
Trattamento superficiale - Surface treatment - Revêtement	XP	XP	

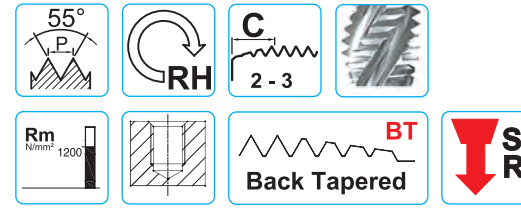
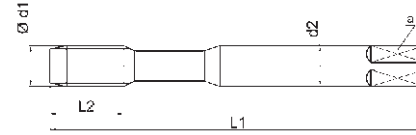
Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	15	11	9	3	11,8
3/8	19	16,66	100	15	12	9	4	15,25
1/2	14	20,96	125	18	16	12	4	19
3/4	14	26,44	140	20	20	16	4	24,5
1"	11	33,25	160	24	25	20	5	30,75

CODE	
K83G1/8XP	K83G1/8FOR-XP
K83G1/4XP	K83G1/4FOR-XP
K83G3/8XP	K83G3/8FOR-XP
K83G1/2XP	K83G1/2FOR-XP
K83G3/4XP	K83G3/4FOR-XP
K83G1"XP	K83G1"FOR-XP

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min
P	Acciaio - Steel - Acier - Rm ≤ 1200 N/mm²	•1.1 20-30 •1.2 20-30 •1.3 20-25 •1.4 15-20 •1.5 5-12
M	Acciaio inox - Stainless steel - Acier inoxydable	•2.1 10-15 •2.2 8-10 •2.3 6-8
K	Ghisa - Cast iron - Fonte	•3.3 10-15 •3.4 15-20
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.2 25-30 •4.3 20-25
N	Leghe di rame - Copper alloys - Alliages de cuivre Truciolo lungo - Long chipping - Copeaux longs	•5.2 20-25

• Raccomandato - Optimal - Recommandé ◦ Adatto - Suitable - Adapté

UFS Norm



Profondità di filettatura - Thread depth - Prof. de filetage	2,5xD	3xD	
Materiale - Tool Material - Substrat	HSSE	HSSE	
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X	ISO 228X	
Trattamento superficiale - Surface treatment - Revêtement	TXC	TXC	

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h6	a h12	Z	
1/8	28	9,73	90	10	10	8	3	8,8
1/4	19	13,16	100	13,5	12	9	3	11,8
3/8	19	16,66	100	13,5	16	12	4	15,25
1/2	14	20,96	125	18	20	16	4	19

CODE	
S80G1/8TXC	S80G1/8FOR-TXC
S80G1/4TXC	S80G1/4FOR-TXC
S80G3/8TXC	S80G3/8FOR-TXC
S80G1/2TXC	S80G1/2FOR-TXC

* Dimensioni a norma di fabbrica
 Dimensions according to standard factory
 Dimensions selon la norme d'usine

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min
P	Acciaio - Steel - Acier - Rm < 1200 N/mm²	•1.1 40-45 •1.2 40-45 •1.3 35-40 •1.4 25-30 •1.5 10-15
M	Acciaio INOX - Stainless steel - Acier inoxydable	•2.1 20-25 •2.2 15-20 •2.3 10-15 •2.4 10-12
K	Ghisa - Cast iron - Fonte	•3.3 20-25 •3.4 25-30
N	Leghe di Alluminio - Al alloys - Alliage Al Si < 10%	•4.1 30-40 •4.2 45-50 •4.3 30-40
N	Leghe di Rame - Copper alloys - Alliages de cuivre Truciolo lungo - Long chipping - Copeaux longs	•5.1 20-25 •5.2 25-30
S	Leghe di titanio - Titanium alloys Alliage de titane Rm < 900 N/mm²	•6.1 20-30 •6.2 12-15
S	Leghe di Nichel - Nickel alloys Alliages de nickel Rm < 900 N/mm²	•7.1 20-30 •7.2 8-12

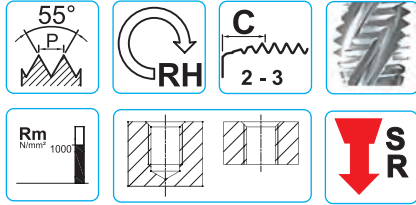
• Raccomandato - Optimal - Recommandé ◦ Adatto - Suitable - Adapté

ISO 228

INOX

ACCIAIO INOSSIDABILE - STAINLESS STEEL - ACIER INOXYDABLE

DIN 5156



Profondità di filettatura - Thread depth - Prof. de filetage	3,5xD	3,5xD
Materiale - Tool Material - Substrat	HSSV3	HSSV3
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X	ISO 228X
Trattamento superficiale - Surface treatment - Revêtement	TXC	TXC

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	3	8,8
1/4	19	13,16	100	15	11	9	3	11,8
3/8	19	16,66	100	15	12	9	4	15,25
1/2	14	20,96	125	18	16	12	4	19
3/4	14	26,44	140	20	20	16	4	24,5
1"	11	33,25	160	24	25	20	5	30,75

CODE	
V83G1/8TXC	V83G1/8FOR-TXC
V83G1/4TXC	V83G1/4FOR-TXC
V83G3/8TXC	V83G3/8FOR-TXC
V83G1/2TXC	V83G1/2FOR-TXC
V83G3/4TXC	V83G3/4FOR-TXC
V83G1"TXC	V83G1"FOR-TXC

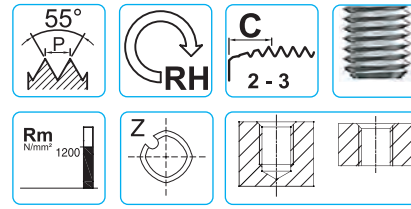
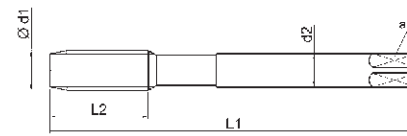
ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min								
P	Acciaio - Steel - Acier - Rm ≤ 1000 N/mm ²	•1.3 20-25	•1.4 15-20	•1.5 5-12	•1.3 20-25	•1.4 15-20	•1.5 5-12			
M	Acciaio inox - Stainless steel - Acier inoxydable	•2.1 10-15	•2.2 8-10	•2.3 6-8	•2.4 3-6	•2.1 10-15	•2.2 8-10	•2.3 6-8	•2.4 3-6	

• Raccomandato - Optimal - Recommandé ◊ Adatto - Suitable - Adapté

ISO 228

MASCHI A RULLARE - ROLL FORM TAPS - TARAUDS À REFOULER

DIN 5156



Profondità di filettatura - Thread depth - Prof. de filetage	3xD	3xD	3xD
Materiale - Tool Material - Substrat	PM8	PM8	PM8
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 228X	ISO 228X	ISO 228X
Trattamento superficiale - Surface treatment - Revêtement	TiN	TiN-G	TiN-G

Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	15	7	5,5	5	9,25
1/4	19	13,16	100	22	11	9	6	12,5
3/8	19	16,66	100	22	12	9	6	16
1/2	14	20,96	125	25	16	12	8	20
3/4	14	26,44	140	25	20	16	8	25,5



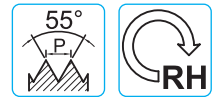
Ød1 GAS	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	
1/8	28	9,73	90	10	7	5,5	8	9,25
1/4	19	13,16	100	13	11	9	8	12,5
3/8	19	16,66	100	13	12	9	8	16
1/2	14	20,96	125	18	16	12	8	20
5/8	14	22,91	125	18	18	14,5	8	22
3/4	14	26,44	140	18	20	16	8	25,5
7/8	14	30,20	150	18	22	18	8	29,25
1"	11	33,25	160	23	25	20	8	32

CODE	
P2CCG1/8T	
P2CCG1/4T	
P2CCG3/8T	
P2CCG1/2T	
P2CCG3/4T	

CODE	
K2CCG1/8TG	K2CCG1/8FOR-TG
K2CCG1/4TG	K2CCG1/4FOR-TG
K2CCG3/8TG	K2CCG3/8FOR-TG
K2CCG1/2TG	K2CCG1/2FOR-TG
K2CCG5/8TG	K2CCG5/8FOR-TG
K2CCG3/4TG	K2CCG3/4FOR-TG
K2CCG7/8TG	K2CCG7/8FOR-TG
K2CCG1"TG	K2CCG1"FOR-TG

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min									
P	Acciaio - Steel - Acier - Rm ≤ 1200 N/mm ²	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	•1.3 30-35	•1.4 25-30	•1.5 15-20	•1.3 30-35	•1.4 25-30	•1.5 15-20
M	Acciaio inox - Stainless steel - Acier inoxydable	•2.1 10-15	•2.2 10-12	•2.3 6-10		•2.2 10-12	•2.3 6-10	•2.4 6-8	•2.2 10-12	•2.3 6-10	•2.4 6-8
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.1 35-40	•4.2 40-45	•4.3 35-40							
N	Leghe di rame - Copper alloys - Alliages de cuivre	•5.1 15-20	•5.2 15-20								

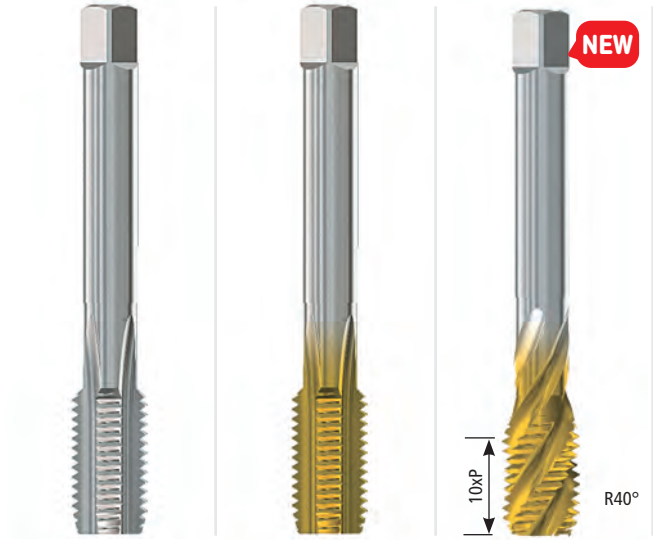
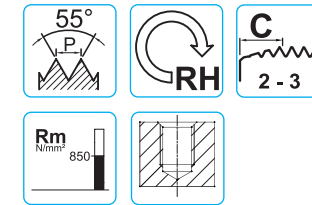
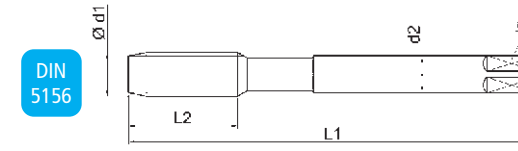
• Raccomandato - Optimal - Recommandé ◊ Adatto - Suitable - Adapté



Tolleranza - Thread tolerance - Tolérance du filetage

Trattamento superficiale - Surface treatment - Revêtement

Ød1 GAS	Ø mm	P TPI	CODE
1/8	9,73	28	P-NPG1/8
1/4	13,16	19	P-NPG1/4
3/8	16,66	19	P-NPG3/8
1/2	20,96	14	P-NPG1/2
5/8	22,91	14	P-NPG5/8
3/4	26,44	14	P-NPG3/4
7/8	30,2	14	P-NPG7/8
1"	33,25	11	P-NPG1"
1"1/8	37,9	11	P-NPG1" 1/8
1"1/4	41,91	11	P-NPG1" 1/4
1"1/2	47,8	11	P-NPG1" 1/2
1"3/4	53,75	11	P-NPG1" 3/4
2"	59,61	11	P-NPG2"
2"1/4	65,71	11	P-NPG2" 1/4
2"1/2	75,18	11	P-NPG2" 1/2
2"3/4	81,53	11	P-NPG2" 3/4
3"	87,88	11	P-NPG3"



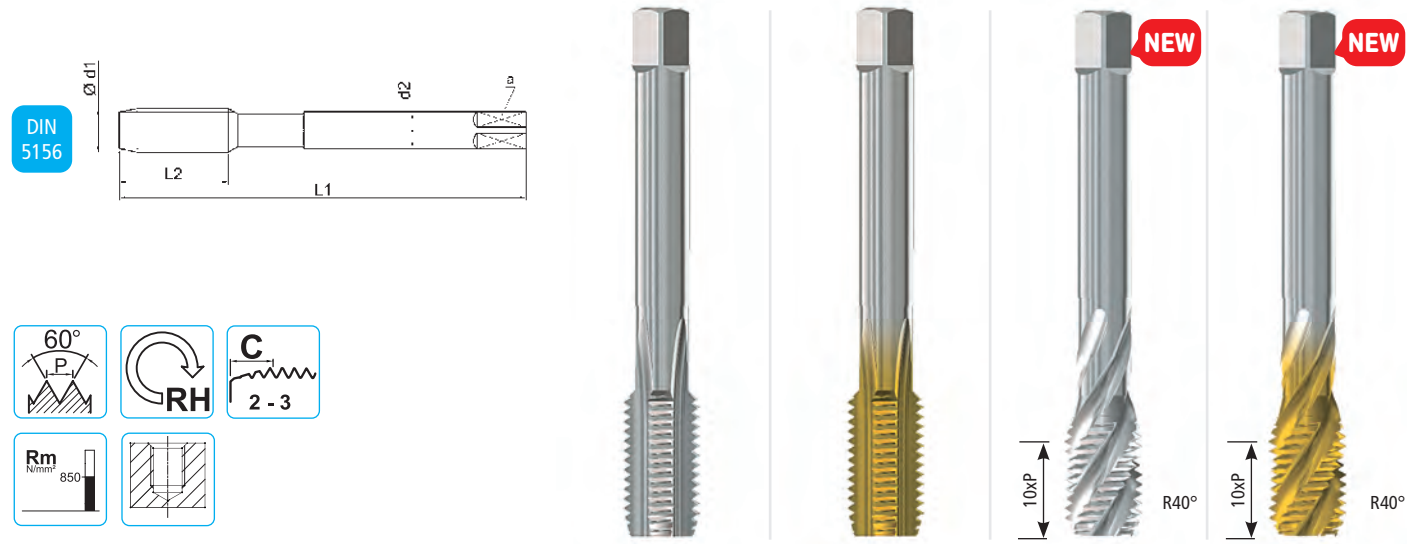
Profondità di filettatura - Thread depth - Prof. de filetage	1,5xD	1,5xD	2,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	ISO 5969	ISO 5969	ISO 5969
Trattamento superficiale - Surface treatment - Revêtement		TiN	TiN

Ød1 Rp	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	Z	Icon
1/8	28	9,73	90	15	7	5,5	3	8,6
1/4	19	13,16	100	22	11	9	3	11,5
3/8	19	16,66	100	22	12	9	3	15
1/2	14	20,96	125	25	16	12	4	18,5
3/4	14	26,44	140	25	20	16	4	24
1"	11	33,25	160	30	25	20	5	30,25
1"1/4	11	41,91	170	30	32	24	6	39
1"1/2	11	47,8	190	32	36	29	6	45
1/8	28	9,73	90	15	7	5,5	3	8,6
1/4	19	13,16	100	22	11	9	3	11,5
3/8	19	16,66	100	22	12	9	4	15
1/2	14	20,96	125	25	16	12	4	18,5
3/4	14	26,44	140	25	20	16	4	24

■ = HSS

CODE		
E21RP1/8	E21RP1/8T	-
E21RP1/4	E21RP1/4T	-
E21RP3/8	E21RP3/8T	-
E21RP1/2	E21RP1/2T	-
E21RP3/4	E21RP3/4T	-
E21RP1"	E21RP1"T	-
E21RP1" 1/4	E21RP1" 1/4T	-
E21RP1" 1/2	E21RP1" 1/2T	-
-	-	E61RP1/8T
-	-	E61RP1/4T
-	-	E61RP3/8T
-	-	E61RP1/2T
-	-	E61RP3/4T

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min											
		•1.1 10-15	•1.2 10-15	•1.3 10-12	•1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	•1.1 10-15	•1.2 10-15	•1.3 10-12	•1.4 8-10	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20	•1.1 20-30	•1.2 20-30	•1.3 20-25	•1.4 15-20
K	Ghisa - Cast iron - Fonte	•3.4 8-10				•3.4 15-20				•3.3 10-15	•3.4 15-20		
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.2 15-20	•4.3 10-15			•4.2 25-30	•4.3 20-25			•4.1 20-25	•4.2 25-30	•4.3 20-25	
N	Leghe di Rame - Copper alloys - Alliages de cuivre	•5.2 10-15	•5.3 15-20			•5.2 20-25	•5.3 25-30			•5.1 15-20	•5.2 20-25		
N	Materiali termoindurenti Duroplastic - Thermodurcissables	•8.2 8-10				•8.2 10-15							

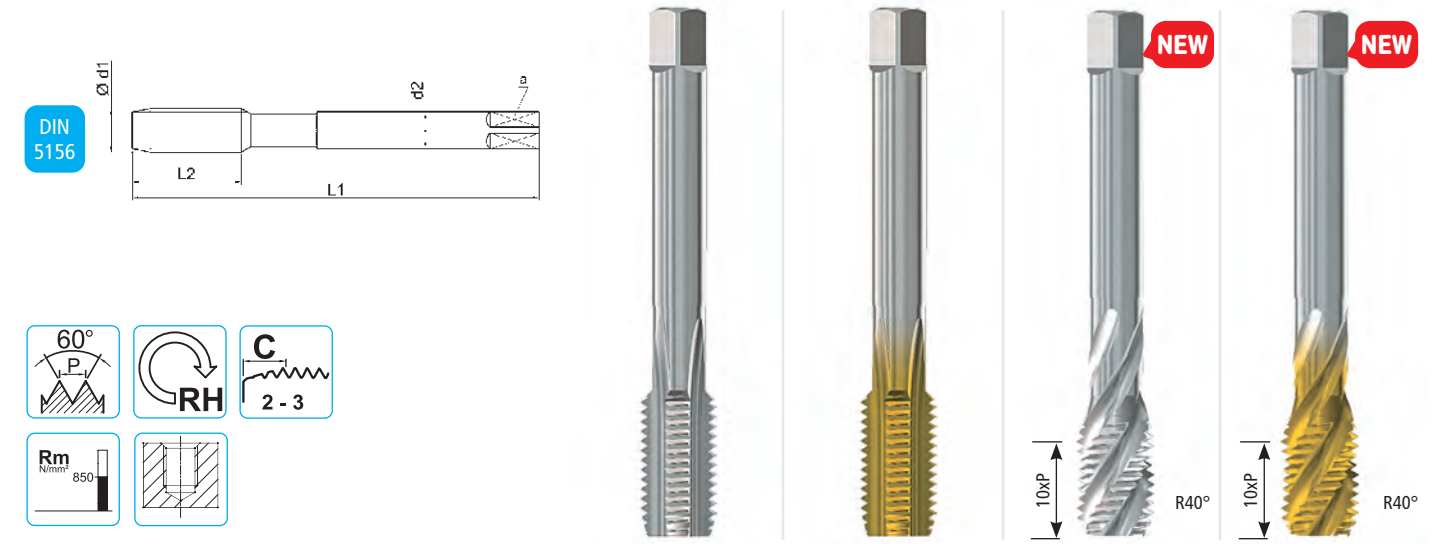


Profondità di filettatura - Thread depth - Prof. de filetage	1,5xD	1,5xD	2,5xD	2,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	-	-	-	-
Trattamento superficiale - Surface treatment - Revêtement		TiN		TiN

Ød1	P	Ø	L ₁	L ₂	d ₂	a	Z	F	NPSM	NPSC
	TPI	mm			h9	h12				
1/8	27	10,1	90	15	7	5,5	3	9,1	8,8	
1/4	18	13,404	100	22	11	9	4	12	11,4	
3/8	18	16,843	100	22	12	9	4	15,5	14,9	
1/2	14	20,949	125	25	16	12	4	19	18,5	
3/4	14	26,296	140	25	20	16	4	24,5	23,8	

CODE			
E21NPSM1/8X27	E21NPSM1/8X27T	-	-
E21NPSM1/4X18	E21NPSM1/4X18T	-	-
E21NPSM3/8X18	E21NPSM3/8X18T	-	-
E21NPSM1/2X14	E21NPSM1/2X14T	-	-
E21NPSM3/4X14	E21NPSM3/4X14T	-	-
-	-	E61NPSM1/8X27	E61NPSM1/8X27T
-	-	E61NPSM1/4X18	E61NPSM1/4X18T
-	-	E61NPSM3/8X18	E61NPSM3/8X18T
-	-	E61NPSM1/2X14	E61NPSM1/2X14T
-	-	E61NPSM3/4X14	E61NPSM3/4X14T

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
		Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20	Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20	Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20
K	Ghisa - Cast iron - Fonte	Ø3.4 8-10				Ø3.4 15-20								Ø3.3 10-15	Ø3.4 15-20		
N	Leghe di Alluminio - Al alloys - Alliage Al	Ø4.2 15-20	Ø4.3 10-15			Ø4.2 25-30	Ø4.3 20-25			Ø4.1 10-15	Ø4.2 15-20			Ø4.1 20-25	Ø4.2 25-30	Ø4.3 20-25	
N	Leghe di Rame - Copper alloys - Alliages de cuivre	Ø5.2 10-15	Ø5.3 15-20			Ø5.2 20-25	Ø5.3 25-30			Ø5.1 8-12	Ø5.2 10-15			Ø5.1 15-20	Ø5.2 20-25		
N	Materiali termoidurenti Duroplastic - Thermodurcissables	Ø8.2 8-10				Ø8.2 10-15											



Profondità di filettatura - Thread depth - Prof. de filetage	1,5xD	1,5xD	2,5xD	2,5xD
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	-	-	-	-
Trattamento superficiale - Surface treatment - Revêtement		TiN		TiN

Ød1	P	Ø	L ₁	L ₂	d ₂	a	Z	F
	TPI	mm			h9	h12		
1/8	27	9,929	90	15	7	5,5	3	8,7
1/4	18	13,236	100	22	11	9	4	11,30
3/8	18	16,673	100	22	12	9	4	14,7
1/2	14	20,819	125	25	16	12	4	18,2
3/4	14	26,166	140	25	20	16	4	23,50

CODE			
E21NPSF1/8X27	E21NPSF1/8X27T	-	-
E21NPSF1/4X18	E21NPSF1/4X18T	-	-
E21NPSF3/8X18	E21NPSF3/8X18T	-	-
E21NPSF1/2X14	E21NPSF1/2X14T	-	-
E21NPSF3/4X14	E21NPSF3/4X14T	-	-
-	-	E61NPSF1/8X27	E61NPSF1/8X27T
-	-	E61NPSF1/4X18	E61NPSF1/4X18T
-	-	E61NPSF3/8X18	E61NPSF3/8X18T
-	-	E61NPSF1/2X14	E61NPSF1/2X14T
-	-	E61NPSF3/4X14	E61NPSF3/4X14T

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
		Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20	Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20	Ø1.1 10-15	Ø1.2 10-15	Ø1.3 10-12	Ø1.4 8-10	Ø1.1 20-30	Ø1.2 20-30	Ø1.3 20-25	Ø1.4 15-20
K	Ghisa - Cast iron - Fonte	Ø3.4 8-10				Ø3.4 15-20								Ø3.3 10-15	Ø3.4 15-20		
N	Leghe di Alluminio - Al alloys - Alliage Al	Ø4.2 15-20	Ø4.3 10-15			Ø4.2 25-30	Ø4.3 20-25			Ø4.1 10-15	Ø4.2 15-20			Ø4.1 20-25	Ø4.2 25-30	Ø4.3 20-25	
N	Leghe di Rame - Copper alloys - Alliages de cuivre	Ø5.2 10-15	Ø5.3 15-20			Ø5.2 20-25	Ø5.3 25-30			Ø5.1 8-12	Ø5.2 10-15			Ø5.1 15-20	Ø5.2 20-25		
N	Materiali termoidurenti Duroplastic - Thermodurcissables	Ø8.2 8-10				Ø8.2 10-15											

Il Lingotto: un concept di innovazione

Lingotto: a concept of innovation

Negli anni '20, lo stabilimento del Lingotto della Fiat divenne uno degli esempi di architettura industriale più importanti d'Europa. Per la prima volta in una grande fabbrica italiana il ciclo della produzione era in progressione. L'operaio rimaneva al suo posto ed erano i materiali a cui doveva lavorare che gli passavano davanti, così da permettere che la realizzazione del prodotto fosse progressiva e, dunque, più rapida.

Nasce nella periferia sud della città, al confine tra Torino e Moncalieri. E' proprio dalla città moncalierese che arrivava la famiglia Lingotto, proprietari della cascina che ha dato il nome al quartiere. Unica nel suo genere, la pista asfaltata di collaudo della autovetture costruita direttamente sul tetto della fabbrica con la nota forma ad anello e le due curve paraboliche studiate in modo da poter essere affrontate con velocità fino a 90 km/h.

Lo stabilimento produsse alcune delle prime vetture entrate nell'immaginario italiano: la Torpedo, la Balilla e la mitica Topolino. Vide uscire dalle proprie officine più di 80 modelli di auto. Poi, nel 1982, la Fiat annunciò la sua chiusura perchè nel frattempo la casa automobilistica torinese aveva aperto altri stabilimenti, più moderni e funzionali, per sfidare il futuro e la globalizzazione.

L'anno successivo venne indetto un concorso internazionale per stabilire cosa fare dello stabilimento. Parteciparono i nomi più prestigiosi dell'architettura internazionale; vinse il genovese Renzo Piano.

La proposta di Piano per il Lingotto è affascinante, coerente con il ruolo che il Lingotto aveva avuto sin dalla sua inaugurazione. Come negli anni '20 lo stabilimento aveva indicato la direzione della città verso lo sviluppo industriale, così negli anni '90 diventa simbolo del terziario avanzato, della sfida verso il futuro.

Nei grandi spazi industriali vengono ricavati un centro congressi, un centro esposizioni, un auditorium, un grande hotel, un centro servizi, molti uffici direzionali e un'area per lo shopping. Piano dice di aver voluto ricreare nel Lingotto "un genuino pezzo di città", pulsante, vitale, poliedrica, complessa.

Il Centro Esposizioni è diventato in pochi anni uno dei più importanti d'Italia. In uno dei cortili c'è una delle sorprese pensate dall'architetto genovese: il magnifico giardino tropicale, rigoglioso ed esuberante. Sul giardino tropicale si affaccia la lunga via dedicata allo shopping, che termina con la multisala cinematografica.

Sulla mitica pista di collaudo, c'è l'altra sorpresa diventata il simbolo del nuovo Lingotto. E' la bolla, un'esclusiva sala riunioni costruita in cristallo e acciaio, da cui si gode di un panorama privilegiato e sontuoso: la corona delle Alpi e la collina di Torino tutt'intorno. Renzo Piano ha detto di aver voluto che "il segno di cambiamento, dell'innovazione del Lingotto fosse un segno di gioia". Accanto alla bolla c'è la Pinacoteca Agnelli, la cui forma architettonica ricorda vagamente un'astronave.

In the 1920s, Fiat's Lingotto factory became one of Europe's most important examples of industrial architecture. For the very first time, mass production was happening in a major Italian factory.

The worker remained at his station and the materials he had to work on moved past him, allowing the manufacturing process to happen progressively and therefore more quickly. The factory was located on the southern edge of the city, on the border between Turin and Moncalieri. And Moncalieri was home to the Lingotto family, owners of the farmstead that gave the district its name. The unique factory building had a car test track on the roof, in the shape of a ring with two parabolic curves, designed to allow speeds of up to 90 km/h.

The factory produced some of the well-known early Italian cars: the Torpedo, the Balilla and the legendary Topolino. More than 80 models rolled out of the factory. But in 1982 Fiat announced its closure, because in the meantime the Turin-based company had opened other, more modern and efficient factories to face the challenges of the globalised future. The following year an international competition was launched to determine what should be done with the building. Many leading international architects took part, and the winner was Genoa-born Renzo Piano. Piano's design for the Lingotto building is fascinating, and consistent with the site's role ever since its construction. Just as in the 1920s the factory led the city's way towards industrial development, now in the 90s, it became a symbol of the advanced tertiary sector, a challenge to the future.

The huge industrial spaces were converted into a conference centre, an exhibition venue, an auditorium, a large hotel, a service centre, numerous executive offices and a shopping area. Piano says he wanted to create a "genuine piece of city" in the Lingotto: vibrant, dynamic, eclectic and complex.

The Exhibition Centre very quickly became one of Italy's most important. A courtyard contains one of the surprises dreamed up by the architect: a magnificent tropical garden. So exuberant, lush and inconceivably green.

The tropical garden flanks the long shopping street, ending with a multi-screen cinema.

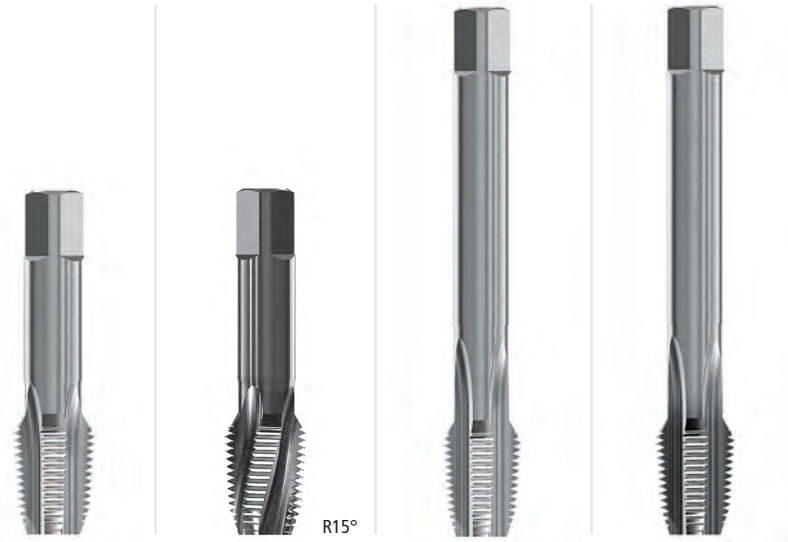
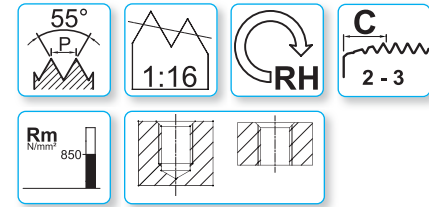
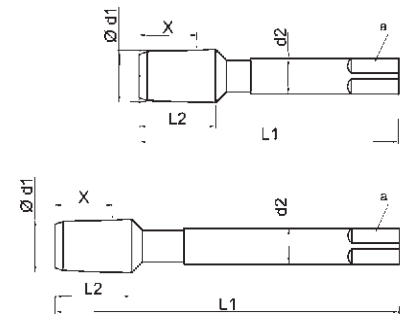
On the famous test track is the second surprise, and the symbol of the new Lingotto. This is the bubble, an exclusive meeting room built in steel and glass and offering extraordinary privileged views: the arc of the Alps and the Turin hills all around. Renzo Piano said he wanted "the mark of change, of innovation in the Lingotto to be a sign of joy". Near the bubble is the Pinacoteca Agnelli, whose architecture is reminiscent of a spaceship.



Rc NPF
NPTF

Lingotto, Torino
Lingotto, Turin

(BSPT) UNI EN 10226-2 USO GENERALE - GENERAL PURPOSE - USAGE GÉNÉRAL



Profondità di filettatura - Thread depth - Prof. de filetage	-	-	-	-
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	-	-	-	-
Trattamento superficiale - Surface treatment - Revêtement		V		TXC

Ød1 Rc	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	✱
1/8	28	9,728	63	13	7	5,5	10,1	8,20
1/4	19	13,157	63	20	11	9	15,0	11
3/8	19	16,662	70	20	12	9	15,4	14,5
1/2	14	20,955	80	26	16	12	20,4	18
3/4	14	26,441	100	28	20	16	21,7	23,5
1"	11	33,249	110	34	25	20	26	29,5
1 1/4	11	41,910	125	36	32	24	28,3	38
1 1/2	11	47,803	140	36	36	29	28,3	44
2"	11	59,614	160	40	45	35	32,6	55,5

CODE	
E21CRC1/8	E41CRC1/8V
E21CRC1/4	E41CRC1/4V
E21CRC3/8	E41CRC3/8V
E21CRC1/2	E41CRC1/2V
E21CRC3/4	E41CRC3/4V
E21CRC1"	E41CRC1"V
E21CRC1" 1/4	-
E21CRC1" 1/2	-
E21CRC2"	-

Ød1 Rc	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	✱
1/8	28	9,728	90	13	7	5,5	10,1	8,20
1/4	19	13,157	100	20	11	9	15,0	11
3/8	19	16,662	110	20	12	9	15,4	14,5
1/2	14	20,955	125	26	16	12	20,4	18
3/4	14	26,441	140	28	20	16	21,7	23,5
1"	11	33,249	160	34	25	20	26	29,5

CODE	
E21LRC1/8	E21LRC1/8TXC
E21LRC1/4	E21LRC1/4TXC
E21LRC3/8	E21LRC3/8TXC
E21LRC1/2	E21LRC1/2TXC
E21LRC3/4	E21LRC3/4TXC
E21LRC1"	E21LRC1"TXC

■ = HSS * = Diametri di foratura cilindrici. Per alesatura conica vedi tabella pag. 272

* = Cylindrical hole. For conic hole see on page 272

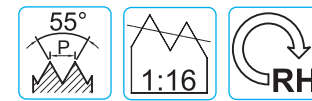
* = Diamètres de perçage cylindrique. Pour alésage conique voir tableau page 272

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
		▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²																
M	Acciaio inox - Stainless steel - Acier inoxydable					▷2.1 3-5	▷2.2 2-4	▷2.3 2-3						▷2.1 3-5	▷2.2 2-4	▷2.3 2-3	
K	Ghisa - Cast iron - Fonte	▷3.1 8-10	▷3.2 6-8	▷3.3 8-10	▷3.4 10-12					▷3.1 8-10	▷3.2 6-8	▷3.3 8-10	▷3.4 10-12	▷3.1 8-10	▷3.2 6-8	▷3.3 8-10	▷3.4 10-12
N	Leghe di Alluminio - Al alloys - Alliage Al	▷4.3 10-12	▷4.4 8-10			▷4.2 12-15	▷4.3 10-12			▷4.3 10-12	▷4.4 8-10			▷4.3 10-12	▷4.4 8-10		
N	Leghe di Rame - Copper alloys - Alliage de cuivre	▷5.2 6-8	▷5.3 10-12			▷5.2 6-8	▷5.3 10-12			▷5.2 6-8	▷5.3 10-12			▷5.2 6-8	▷5.3 10-12		

• Raccomandato - Optimal - Recommandé ▷ Adatto - Suitable - Adapté

ISO7-1, EN 10226-1, EN 10226-2

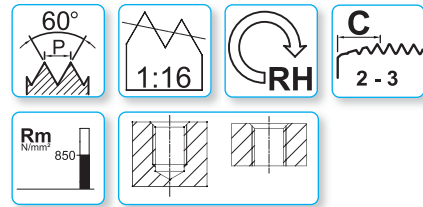
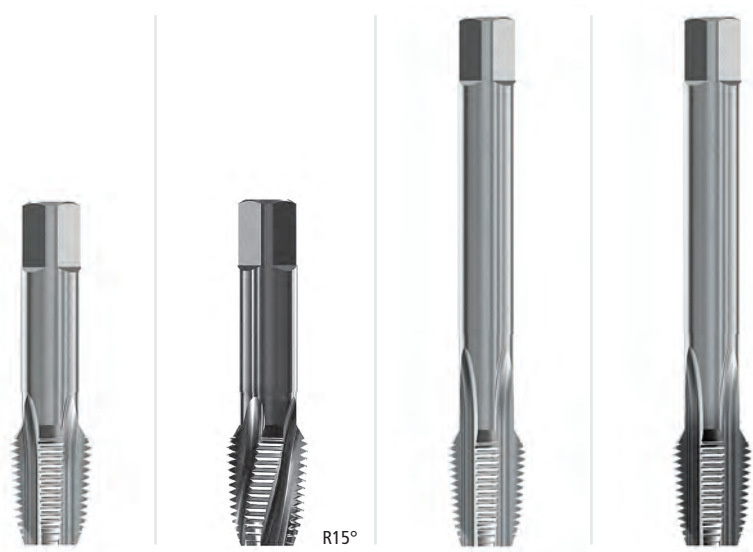
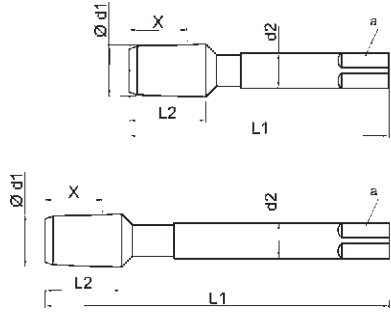
Sistema di controllo sec. EN 10226-3
 Gauge system according EN 10226-3
 Système de contrôle selon la norme EN 10226-3



Tolleranza - Thread tolerance - Tolérance du filetage	-
Trattamento superficiale - Surface treatment - Revêtement	BR

Ød1 Rc-Rp	Ø mm	P TPI
1/8	9,73	28
1/4	13,16	19
3/8	16,66	19
1/2	20,96	14
3/4	26,44	14
1"	32,25	11
1 1/4	41,91	11
1 1/2	47,8	11
2"	59,61	11

CODE	
P-NPRC1/8	
P-NPRC1/4	
P-NPRC3/8	
P-NPRC1/2	
P-NPRC3/4	
P-NPRC1"	
P-NPRC1" 1/4	
P-NPRC1" 1/2	
P-NPRC2"	



Profondità di filettatura - Thread depth - Prof. de filetage	-	-	-	-
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	-	-	-	-
Trattamento superficiale - Surface treatment - Revêtement		V		TXC

Ød1 NPT	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	
1/16	27	7,938	63	13	6	4,9	9,3	6,2
1/8	27	10,287	63	13	7	5,5	9,3	8,5
1/4	18	13,716	63	20	11	9	13,5	11
3/8	18	17,145	70	20	12	9	13,9	14,5
1/2	14	21,336	80	26	16	12	18,1	17,9
3/4	14	26,670	100	26	20	16	18,6	23,2
1"	11,5	33,401	110	32	25	20	22,3	29
1 1/4"	11,5	42,164	125	32	32	24	22,8	37,8
1 1/2"	11,5	48,260	140	32	36	29	22,8	44
2"	11,5	60,325	160	36	45	35	23,2	56

CODE	
E21CNPT1/16	-
E21CNPT1/8	E41CNPT1/8V
E21CNPT1/4	E41CNPT1/4V
E21CNPT3/8	E41CNPT3/8V
E21CNPT1/2	E41CNPT1/2V
E21CNPT3/4	E41CNPT3/4V
E21CNPT1"	E41CNPT1"V
E21CNPT1" 1/4	-
E21CNPT1" 1/2	-
E21CNPT2"	-

Ød1 NPT	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	
1/16	27	7,938	90	13	6	4,9	9,3	6,2
1/8	27	10,287	90	13	7	5,5	9,3	8,5
1/4	18	13,716	100	20	11	9	13,5	11
3/8	18	17,145	110	20	12	9	13,9	14,5
1/2	14	21,336	125	26	16	12	18,1	17,9
3/4	14	26,670	140	26	20	16	18,6	23,2
1"	11,5	33,401	160	32	25	20	22,3	29
1 1/4"	11,5	42,164	160	32	32	24	22,8	37,8
1 1/2"	11,5	48,260	190	32	36	29	22,8	44
2"	11,5	60,325	200	36	45	35	23,2	56

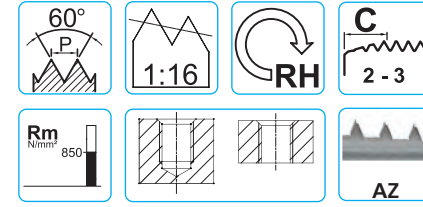
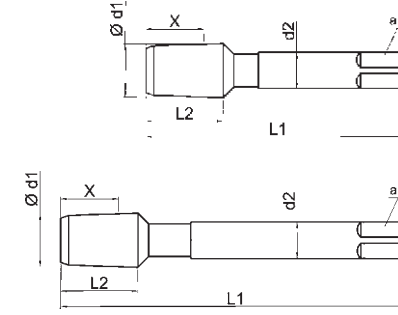
CODE	
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E21LNPT1/8	E21LNPT1/8TXC
E21LNPT1/4	E21LNPT1/4TXC
E21LNPT3/8	E21LNPT3/8TXC
E21LNPT1/2	E21LNPT1/2TXC
E21LNPT3/4	E21LNPT3/4TXC
E21LNPT1"	E21LNPT1"TXC
E21LNPT1" 1/4	-
E21LNPT1" 1/2	-
E21LNPT2"	-

■ = HSS * = Diametri di foratura cilindrici. Per alesatura conica vedi tabella pag. 272

* = Cylindrical hole. For conic hole see on page 272

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm ²	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	▷1.3 8-10	▷1.4 6-8
M	Acciaio inox - Stainless steel - Acier inoxydable					•2.1 3-5	•2.2 2-4	•2.3 2-3						•2.1 3-5	•2.2 2-4	•2.3 2-3	
K	Ghisa - Cast iron - Fonte	▷3.1 8-10	▷3.2 6-8	▷3.3 8-10	▷3.4 10-12					▷3.1 8-10	▷3.2 6-8	▷3.3 8-10	▷3.4 10-12	▷3.1 8-10	▷3.2 6-8	▷3.3 8-10	▷3.4 10-12
N	Leghe di Alluminio - Al alloys - Alliage Al	▷4.3 10-12	▷4.4 8-10			•4.2 12-15	•4.3 10-12			▷4.3 10-12	▷4.4 8-10			▷4.3 10-12	▷4.4 8-10		
N	Leghe di Rame - Copper alloys - Alliages de cuivre	▷5.2 6-8	▷5.3 10-12			•5.2 6-8	•5.3 10-12			▷5.2 6-8	▷5.3 10-12			▷5.2 6-8	▷5.3 10-12		

• Raccomandato - Optimal - Recommandé ▷ Adatto - Suitable - Adapté



Profondità di filettatura - Thread depth - Prof. de filetage	-	-	-	-
Materiale - Tool Material - Substrat	HSSE	HSSE		
Tolleranza - Thread tolerance - Tolérance du filetage	-	-	-	-
Trattamento superficiale - Surface treatment - Revêtement				

Ød1 NPT	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	
1/8	27	10,287	63	13	7	5,5	9,3	8,5
1/4	18	13,716	63	20	11	9	13,5	11

CODE	
E21CNPT1/8AZ	
E21CNPT1/4AZ	

Ød1 NPT	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	
1/8	27	10,287	90	13	7	5,5	9,3	8,5
1/4	18	13,716	100	20	11	9	13,5	11
3/8	18	17,145	110	20	12	9	13,9	14,5
1/2	14	21,336	125	26	16	12	18,1	17,9

CODE	
E21LNPT1/8AZ	
E21LNPT1/4AZ	
E21LNPT3/8AZ	
E21LNPT1/2AZ	

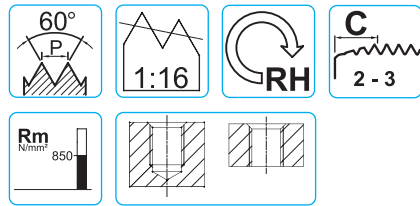
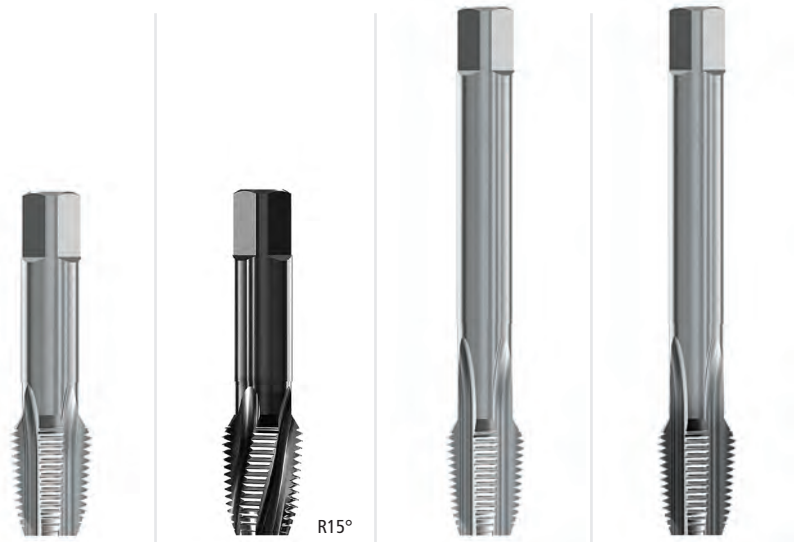
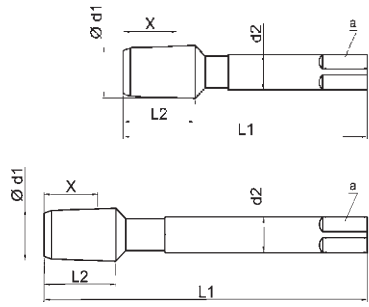
* = Diametri di foratura cilindrici. Per alesatura conica vedi tabella pag. 272

* = Cylindrical hole. For conic hole see on page 272

* = Diamètres de perçage cylindrique. Pour alésage conique voir tableau page 272

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min							
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm ²	•1.1 12-15	▷1.2 10-12						
M	Acciaio inox - Stainless steel - Acier inoxydable	•2.1 3-5	•2.2 2-4	▷2.3 2-3					
N	Leghe di Alluminio - Al alloys - Alliage Al	•4.1 12-15	•4.2 10-12						
N	Leghe di Rame - Copper alloys - Alliages de cuivre	•5.1 10-12	•5.2 6-8						

• Raccomandato - Optimal - Recommandé ▷ Adatto - Suitable - Adapté



Profondità di filettatura - Thread depth - Prof. de filetage	-	-	-	-
Materiale - Tool Material - Substrat	HSSE	HSSE	HSSE	HSSE
Tolleranza - Thread tolerance - Tolérance du filetage	-	-	-	-
Trattamento superficiale - Surface treatment - Revêtement		V		TXC

Ød1 NPTF	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	✱	CODE
1/8	27	10,287	63	13	7	5,5	9,3	8,45	E21CNPTF1/8 E41CNPTF1/8V
1/4	18	13,716	63	20	11	9	13,5	10,9	E21CNPTF1/4 E41CNPTF1/4V
3/8	18	17,145	70	20	12	9	13,9	14,3	E21CNPTF3/8 E41CNPTF3/8V
1/2	14	21,336	80	26	16	12	18,1	17,6	E21CNPTF1/2 E41CNPTF1/2V
3/4	14	26,670	100	26	20	16	18,6	23,0	E21CNPTF3/4 E41CNPTF3/4V
1"	11,5	33,401	110	32	25	20	22,3	28,75	E21CNPTF1" E41CNPTF1"V

Ød1 NPTF	P TPI	Ø mm	L ₁	L ₂	d ₂ h9	a h12	X	✱	CODE
1/8	27	10,287	90	13	7	5,5	9,3	8,45	E21LNPTF1/8 E21LNPTF1/8TXC
1/4	18	13,716	100	20	11	9	13,5	10,9	E21LNPTF1/4 E21LNPTF1/4TXC
3/8	18	17,145	110	20	12	9	13,9	14,3	E21LNPTF3/8 E21LNPTF3/8TXC
1/2	14	21,336	125	26	16	12	18,1	17,6	E21LNPTF1/2 E21LNPTF1/2TXC
3/4	14	26,670	140	26	20	16	18,6	23,0	E21LNPTF3/4 -
1"	11,5	33,401	160	32	25	20	22,3	28,75	E21LNPTF1" -

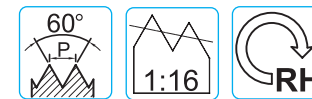
* = Diametri di foratura cilindrici.
 Per alesatura conica vedi tabella pag. 272

* = Cylindrical hole.
 For conic hole see on page 272

* = Diamètres de perçage cylindrique.
 Pour alésage conique voir tableau page 272

ISO	Campo di impiego Application range Gamme d'application	Gruppo di materiali - Velocità di taglio m/min Material groups - Cutting speed m/min Groupes de matières - Vitesse de coupe m/min															
P	Acciaio - Steel - Acier - Rm ≤ 850 N/mm²	▷1.1 12-15	▷1.2 10-12	•1.3 8-10	•1.4 6-8	•1.1 12-15	•1.2 10-12	▷1.3 8-10	▷1.4 6-8	▷1.1 12-15	▷1.2 10-12	•1.3 8-10	•1.4 6-8	▷1.1 12-15	▷1.2 10-12	•1.3 8-10	•1.4 6-8
M	Acciaio inox - Stainless steel - Acier inoxydable					•2.1 3-5	▷2.2 2-4	▷2.3 2-3						▷2.1 3-5	▷2.2 2-4	•2.3 2-3	
K	Ghisa - Cast iron - Fonte	▷3.1 8-10	▷3.2 6-8	•3.3 8-10	•3.4 10-12					▷3.1 8-10	▷3.2 6-8	•3.3 8-10	•3.4 10-12	▷3.1 8-10	▷3.2 6-8	•3.3 8-10	•3.4 10-12
N	Leghe di Alluminio - Al alloys - Alliage Al	▷4.3 10-12	•4.4 8-10			▷4.2 12-15	▷4.3 10-12			▷4.3 10-12	•4.4 8-10			▷4.3 10-12	•4.4 8-10		
N	Leghe di Rame - Copper alloys - Alliages de cuivre	▷5.2 6-8	•5.3 10-12			▷5.2 6-8	▷5.3 10-12			▷5.2 6-8	•5.3 10-12			▷5.2 6-8	•5.3 10-12		

• Raccomandato - Optimal - Recommandé ▷ Adatto - Suitable - Adapté



Tolleranza - Thread tolerance - Tolérance du filetage	-
Trattamento superficiale - Surface treatment - Revêtement	

NPT
Gauge system sim. ANSI/ASME B1.20.1

Ød1 NPT	P TPI	CODE
1/8	27	P-NPNPT1/8-27
1/4	18	P-NPNPT1/4-18
3/8	18	P-NPNPT3/8-18
1/2	14	P-NPNPT1/2-14
3/4	14	P-NPNPT3/4-14
1"	11,5	P-NPNPT1"-11,5
1"1/4	11,5	P-NPNPT1"1/4-11,5
1"1/2	11,5	P-NPNPT1"1/2X11,5
2"	11,5	P-NPNPT2"-11,5

NPTF
Gauge system NPTF-1 acc. ANSI/ASME B1.20.5

Ød1 NPTF	P TPI	CODE
1/8	27	P-NPNPTF1/8-27
1/4	18	P-NPNPTF1/4-18
3/8	18	P-NPNPTF3/8-18
1/2	14	P-NPNPTF1/2-14
3/4	14	P-NPNPTF3/4-14
1"	11,5	P-NPNPTF1"-11,5
1"1/4	11,5	P-NPNPTF1"1/4-11,5
1"1/2	11,5	P-NPNPTF1"1/2X11,5
2"	11,5	P-NPNPTF2"-11,5

Ød1 NPTF	P TPI	CODE
1/8	27	P-NPNPTF1/8-27
1/4	18	P-NPNPTF1/4-18
3/8	18	P-NPNPTF3/8-18
1/2	14	P-NPNPTF1/2-14
3/4	14	P-NPNPTF3/4-14
1"	11,5	P-NPNPTF1"-11,5
1"1/4	11,5	P-NPNPTF1"1/4-11,5
1"1/2	11,5	P-NPNPTF1"1/2X11,5
2"	11,5	P-NPNPTF2"-11,5