

Frese a filettare vorticoso — Frese a filettare — Calibri

Tourbillonneurs — Fraises à fileter — Jauges de filetage



FR-IT-ID TM.1

**Catalogue**  
Tourbillonneurs  
Fraises à fileter  
Jauges de filetage

FR-IT-ID TM.1

**Catalogo**  
Frese a filettare vorticoso  
Frese a filettare  
Calibri





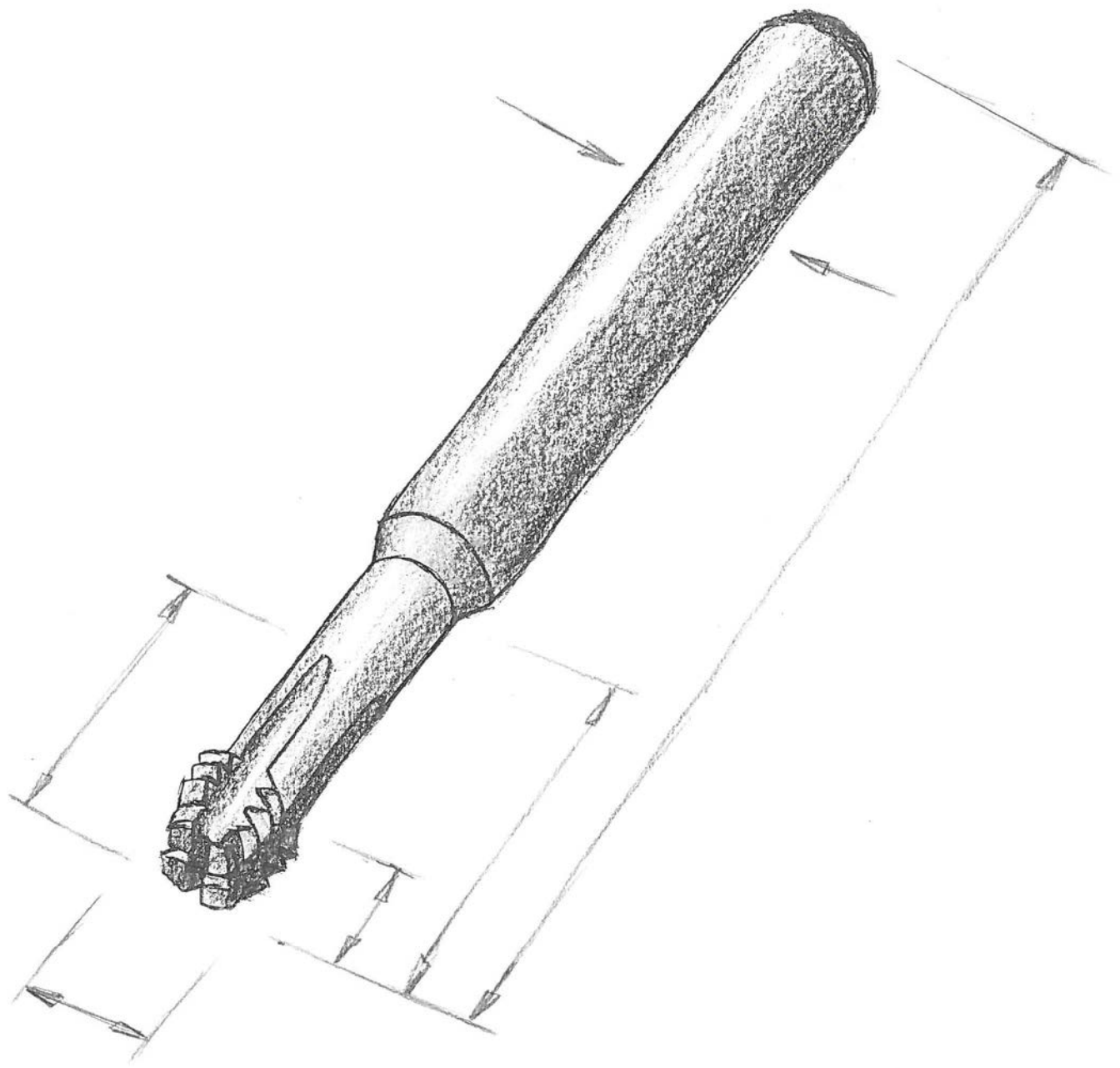
Q-TAP



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180760 C11830









## DISPONIBILITÉ DES ARTICLES

- ID Article en stock
- ID Disponible à court terme
- \* ID Disponible jusqu'à épuisement du stock

## DISPONIBILITÀ DEGLI ARTICOLI

- ID Articoli in stock
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- \* ID Articoli disponibili sino ad esaurimento





Notre entreprise située dans le Jura bernois en Suisse est nichée entre les collines et les rives de la Birse depuis 1940. C'est dans ce cadre idyllique que sont développés et produits les outils de filetage haut de gamme de notre marque DC et c'est d'ici, également, qu'ils sont livrés dans le monde entier.

Depuis la fondation de la société, nous nous sommes focalisés sur l'élargissement de notre gamme de tarauds HSSE / HSSE-PM afin de répondre de la meilleure façon aux besoins de notre clientèle et sur le développement de nouveaux types d'outils pour les technologies et les matériaux les plus récents.

Afin de favoriser les développements et la production des outils de filetage en carbure monobloc, tels que les fraises à fileter et les tourbillonneurs, nous avons créé le département « ONE STEP » durant l'année 2000, un nouveau secteur de production équipé des dernières technologies de production permettant de garantir la fiabilité et la performance de nos outils de filetage en carbure.

Depuis 2010, notre programme de tarauds coupants, refouleurs, tourbillonneurs et jauges de filetage s'est considérablement développé. Un accent tout particulier a notamment été mis sur le développement de nos micro-outils, représentés par notre programme NANO proposant un large choix d'outils d'un diamètre de 0.3 mm à 2.75 mm, qui comprend des tarauds, refouleurs, tourbillonneurs, jauges de contrôle et rapporteurs. En tant que société accréditée ISO 17025/2005, DC Nano Tools SA est votre spécialiste dans ce domaine.

Aujourd'hui, nos outils de filetage de hautes performances sont utilisés dans le monde entier et dans tous les secteurs d'activité où **qualité, performance** et **fiabilité** sont des éléments primordiaux et essentiels dans le processus de fabrication de nos clients.

Et si vous ne trouvez pas l'outil que vous cherchez dans notre vaste gamme de programmes standards, nous modifierons nos outils pour répondre à vos besoins ou créerons des outils sur mesure à partir de vos spécifications.

Finalement, pour les questions auxquelles vous ne trouvez pas de réponse dans notre catalogue, nos équipes sont bien entendu à votre disposition pour répondre à chacune de vos demandes.



*"Au début, je cherchais les meilleurs outils,  
puis j'ai décidé de les fabriquer moi-même"*

Daniel Charpilloz – 1940



La nostra innovativa PMI è di casa nel Giura bernese in Svizzera, idillicamente incastonata tra le colline e sulle rive dell'ancora giovane fiume Birs. È qui che dal 1940 gli utensili per filettare ad alte prestazioni del nostro marchio DC vengono sviluppati, prodotti e forniti in tutto il mondo.

Fin dalla fondazione della nostra azienda, ci siamo concentrati sull'ampliamento della nostra gamma di maschi in HSSE / HSSE-PM per soddisfare in modo ottimale le esigenze dei nostri clienti e sullo sviluppo costante di nuovi tipi di utensili per le più recenti tecnologie e materiali.

Nel 2000 abbiamo creato la nuova divisione di produzione "ONE STEP", dotata delle più moderne tecnologie di produzione, per lo sviluppo e la produzione di frese per filettatura e frese a filettare vorticoso in metallo duro integrale affidabili e performanti. Nel frattempo, il nostro programma CAR è stato notevolmente sviluppato e ampliato, con particolare attenzione alle frese per filettatura.

Dal 2010, una particolare attenzione è stata dedicata allo sviluppo dei nostri micro utensili. Il risultato è il nostro programma "NANO", molto ampio e completo, che comprende maschi di taglio e a rullare, frese a filettare vorticoso, calibri filettati, e calibri di controllo a spina, nel range di diametro da 0.3 a 2.75 mm. In qualità di azienda accreditata ISO 17025/2005, DC Nano Tools SA è il vostro specialista e riferimento in questo campo.

Oggi, i nostri utensili di filettatura ad alte prestazioni vengono utilizzati in tutto il mondo e in tutti i settori in cui la **qualità**, le **prestazioni** e l'**affidabilità** dei prodotti sono di primaria importanza.

Se non trovate ciò di cui avete bisogno nella nostra vasta gamma di prodotti standard, possiamo modificare gli utensili in base alle vostre esigenze o produrre articoli speciali specifici, in base alle vostre specificazioni e ai vostri disegni.

Per domande, alle quali non trovate risposta nel nostro catalogo, siamo naturalmente a vostra completa disposizione.



*"All'inizio cercavo gli utensili migliori,  
poi ho deciso di produrli io stesso"*

Daniel Charpilloz – 1940



# DC SWISS DANS LE MONDE ENTIER

TOUJOURS PRÈS DE VOUS



## PROXIMITÉ AVEC LES CLIENTS

*Vous trouverez toujours un interlocuteur compétent, que ce soit à l'usine mère en Suisse, dans l'une de nos filiales en Allemagne, en Italie et en Angleterre, ou encore chez l'un de nos nombreux distributeurs ou l'un de nos représentants dans le monde.*

## SUPPORTO ALLA CLIENTELA

*Troverete sempre una persona di riferimento competente, sia presso la nostra sede principale in Svizzera, sia presso una delle nostre filiali in Germania, Italia e Inghilterra, sia presso uno dei nostri numerosi rappresentanti o rivenditori in tutto il mondo.*



*Filiales - Filiali*

*Partenaires technologiques - Partner tecnologici*

*Distributeurs - Distributori*

*Pour les autres pays : <http://dcswiss.com/réseau-de-vente>*

*Per altri Paesi : <http://dcswiss.com/it/rete-di-vendita>*

# DC SWISS NEL MONDO

E SEMPRE VICINO A VOI

# SWISS QUALITY



**100 % made by DC SWISS** -  
garanti depuis le développement de l'outil  
jusqu'à sa fabrication et son contrôle final, grâce  
à notre savoir-faire et à notre compétence dans tous les  
domaines de la fabrication d'outils de filetage.

**100 % made by DC SWISS** - garantito dallo sviluppo  
dell'utensile alla sua produzione e fino al controllo finale, gra-  
zie al nostro know-how e alle nostre competenze in tutto il settore  
della produzione di utensili per filettatura.



# NOS VALEURS

## PERFORMANCE

*La performance est au centre de nos réflexions pour le développement de nouvelles solutions et l'amélioration de nos produits "catalogue" aux besoins de nos clients. Nous attachons une grande importance à un rapport prix/performance constant comme base d'une relation de confiance avec nos clients.*

# I NOSTRI VALORI

## PRESTAZIONI

Facciamo ogni sforzo per sviluppare soluzioni personalizzate e per adattare le prestazioni dei nostri utensili standard alle attuali esigenze dei nostri clienti. Attribuiamo grande importanza a un rapporto prezzo/prestazioni costante come base per un rapporto di fiducia con i nostri clienti.



**AUTOMOBILE**  
**SETTORE AUTOMOBILISTICO**

**INDUSTRIE HORLOGÈRE**  
**INDUSTRIA DELL'OROLOGERIA**

**AÉROSPATIALE**  
**SETTORE AEROSPAZIALE**

**TECNOLOGIE MÉDICALE**  
**SETTORE MEDICALE**

**SOLUTIONS SUR-MESURE**  
**SOLUZIONI PERSONALIZZATE**



## SAVOIR-FAIRE

*La valeur de notre savoir-faire se traduit par une manière unique de résoudre les problèmes et d'associer l'ensemble des connaissances, des expériences et des compétences accumulées depuis 1940.*

## KNOW-HOW

Il valore del nostro know-how rappresenta in modo unico la soluzione dei problemi e articola, implementa e associa l'insieme delle conoscenze, delle esperienze e delle competenze accumulate dal 1940.

## FIABILITÉ

*Nous savons que les relations durables se construisent uniquement sur la base de la confiance, de la transparence et de l'engagement quotidien de chacun de nos collaborateurs à fournir à notre clientèle des outils et services d'une excellente qualité.*

## AFFIDABILITÀ

Sappiamo che relazioni durature possono essere costruite solo sulla base della fiducia, della trasparenza e degli sforzi quotidiani di ciascuno dei nostri dipendenti per fornire ai nostri clienti strumenti e servizi di qualità eccellente.







**TARAUDAGE CLASSIQUE  
MASCHIATURA CLASSICA**



**TARAUDAGE PAR DÉFORMATION  
MASCHIATURA PER DEFORMAZIONE**



**AÉROSPATIALE  
SETTORE AEROSPAZIALE**



**FRAISAGE DE FILETS  
FRESATURA DI FILETTI**



**AUTOMOBILE  
SETTORE AUTOMOBILISTICO**



**TECHNOLOGIE MÉDICALE  
SETTORE MEDICALE**



**SOLUTIONS SUR-MESURE  
SOLUZIONI PERSONALIZZATE**



**PRODUCTION D'ÉNERGIE**  
**PRODUZIONE DI ENERGIA**



**INDUSTRIE HORLOGÈRE**  
**INDUSTRIA DELL'OROLOGERIA**



**MÉCANIQUE GÉNÉRALE**  
**MECCANICA GENERALE**



**TOURBILLONNAGE**  
**FILETATURA VORTICOSO**



**JAUGES DE FILETAGE**  
**CALIBRI FILETTATI**



**MANDRINS DE TARAUDAGE**  
**MASCHIATORE**



**FILIÈRES**  
**FILIERE**



# NOS COMPÉTENCES

## SERVICE D'ÉTALONNAGE ET DE MÉTROLOGIE

**DC SWISS possède une entité métrologique accréditée par le Service d'accréditation suisse en tant que Laboratoire d'étalonnage pour les longueurs.**

*DC SWISS est en mesure d'offrir un service d'étalonnage et de métrologie dans les domaines des liaisons vissées.*

*Un certificat est une confirmation écrite attestant de la qualité de l'équipement métrologique de l'entreprise. DC NANO TOOLS SA (Accréditation SCS 0143), membre du Groupe DC SWISS, vous propose le contrôle et l'étalonnage des jauges tampons filetées ainsi que des jauges bagues filetées selon la norme internationale standardisée ISO 17025.*

*Nos outils sont le fruit de nombreuses études. Nous les élaborons avec la somme des connaissances acquises au fil de nombreuses années et toujours en les essayant jusque dans leurs plus ultimes limites. Tout ce savoir-faire, nous le partageons avec vous sous la forme de services. Notre objectif est de fournir la solution la plus appropriée à chaque cas, depuis l'étude jusqu'à la fabrication en volume.*

*Nous maîtrisons tous les aspects du processus de filetage et nous sommes à même de vous proposer notre expertise dans l'assemblage dès la conception, puis l'usinage et le contrôle métrologique aux différents stades de la création des liaisons vissées.*

### **Expertise conception**

*Chaque conception est unique, mais les solutions sont souvent multiples. Nous vous conseillons dans le choix du type de liaison vissée, comme les vis réglables, autobloquantes et de haute qualité. Nous intervenons avec vos concepteurs lors de la phase de création afin de trouver et dimensionner la liaison vissée la plus performante en termes de dimension, faisabilité, coût de production et d'assemblage.*

### **Expertise usinage**

*Chaque outil demande une programmation particulière en fonction de nombreux paramètres. Nous vous aidons à tirer le meilleur de vos machines et vos outils afin d'atteindre la performance maximale par une programmation personnalisée. Nous vous fournissons le soutien dans la phase de contrôle et de mesure afin que vous soyez certains d'avoir produit le filetage que vous attendiez. Et si l'outil doit être adapté, nous le réalisons afin qu'il satisfasse à la perfection vos exigences. Souvent un passage particulier permet de résoudre la difficulté d'une géométrie complexe ou une position atypique.*

### **Expertise métrologique**

*Nous fournissons un grand nombre de jauges de mesure et également la manière de les utiliser et surtout de les contrôler afin d'assurer la qualité désirée avec constance. D'autres mesures plus spécifiques sont accessibles, comme la concentricité ainsi que toutes les mesures de certification. Nous vous soutenons dans l'établissement des procédures de contrôle. Ce service est offert dans les dimensions allant du diamètre 0.1 à 3.0 mm pour la mesure du diamètre sur flanc et de 0.1 à 3.5 mm pour le diamètre extérieur. Ne prenez pas de risques et profitez des compétences de DC NANO TOOLS SA pour l'étalonnage de vos outils de mesure.*

### **Formation**

*Dans notre centre d'applications et notre laboratoire, nous dispensons à tous nos clients toute l'information et les meilleures pratiques qui concernent la conception, la fabrication et l'usage des liaisons vissées. Sur demande, nous approfondissons la formation sur des sujets précis ou spécifiques comme les liaisons sécurisées par exemple.*

# LA NOSTRA ESPERIENZA

## SERVIZIO DI TARATURA E METROLOGIA

**DC SWISS dispone di un laboratorio di metrologia accreditato dal Servizio di accreditamento svizzero come laboratorio per la taratura delle lunghezze.**

DC SWISS è in grado di offrire un servizio di taratura e metrologia per una ottimale filettatura.

Viene rilasciato un certificato che è la conferma scritta della qualità delle apparecchiature metrologiche di un'azienda come DC NANO TOOLS SA (accreditamento SCS 0143), membro del gruppo DC SWISS, che è in grado di ispezionare e calibrare i tamponi a vite e gli anelli di misura per filettatura secondo la norma internazionale ISO 17025.

I nostri utensili sono il risultato di numerosi studi. Li progettiamo utilizzando tutte le conoscenze che abbiamo acquisito nel corso di molti anni, testandoli sempre con la massima cura. Condividiamo con voi tutte queste conoscenze sotto forma di servizi. Il nostro obiettivo è quello di fornire la soluzione più appropriata in ogni caso, dallo studio di fattibilità fino alla produzione in serie.

Siamo esperti in tutti gli aspetti del processo di filettatura delle viti e siamo in grado di offrirvi la nostra esperienza di montaggio, dalla progettazione, alla lavorazione e al controllo metrologico, passando per le varie fasi di creazione filettate.

### Competenza di progettazione

Ogni progetto è unico, ma ci sono spesso più soluzioni. Possiamo consigliarvi su quale tipo di fissaggio a vite scegliere, ad esempio viti regolabili, autobloccanti e viti di alta qualità. Durante la fase di progettazione, possiamo aiutare i vostri progettisti a individuare e decidere il fissaggio a vite più performante in termini di dimensioni, fattibilità, costi di produzione e montaggio.

### Competenza di lavorazione

Ogni utensile richiede una programmazione speciale che coinvolge numerosi parametri. Possiamo aiutarvi ad ottenere il meglio dalle vostre macchine e dai vostri utensili per ottenere il massimo delle prestazioni attraverso una programmazione personalizzata. Possiamo fornirvi supporto nella fase di ispezione e misurazione, in modo che possiate essere sicuri di aver prodotto la filettatura della vite che vi aspettavate. E se un utensile deve essere personalizzato, possiamo farlo in modo che soddisfi tutte le vostre esigenze. Spesso, un particolare approccio al montaggio permette di risolvere un problema causato da una geometria complessa o da un posizionamento non ottimale.

### Competenza metrologica

Forniamo un gran numero di misuratori e anche consigli su come utilizzarli e controllarli per garantire la qualità richiesta. Sono disponibili altre misure più specifiche, come la concentricità e le misure di certificazione. Possiamo assistervi nell'impostazione delle procedure di controllo. Questo servizio è disponibile per diametri sul fianco da 0.1 a 3.0 mm e per diametri esterni da 0.1 a 3.5 mm. Non correte il rischio - approfittate dell'esperienza di DC NANO TOOLS SA per calibrare i vostri strumenti di misura.

### Formazione

Nel nostro centro di applicazione e nel nostro laboratorio, distribuiamo a tutti i nostri clienti informazioni complete e consigli sulle migliori pratiche nella progettazione, produzione e utilizzo dei fissaggi a vite. Siamo in grado di fornire una formazione su richiesta su argomenti specifici come i fissaggi sicuri.





The management system of

# DC Swiss SA

CP 363,  
Grand rue 19  
CH - 2735 Malleray



has been assessed and certified as meeting the requirements of

## ISO 9001:2015

For the following activities

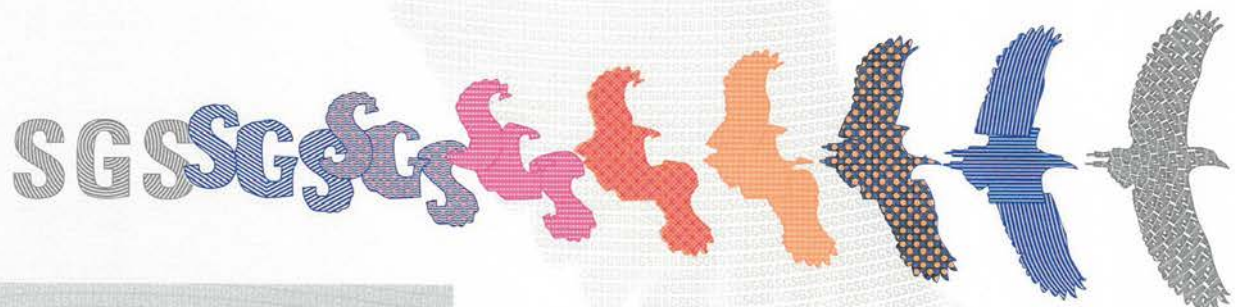
**Design, development, manufacturing, marketing, sales and distribution of cutting tools. Expertise in threading technology.**

This certificate is valid from 19 June 2018 until 18 June 2021  
and remains valid subject to satisfactory surveillance audits  
Recertification audit due before 7 June 2021  
Issue 6. Certified since September 2007




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Technoparkstrasse 1 8005 Zurich Switzerland  
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# REGISTRE — REGISTRO









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# REGISTRE — REGISTRO

	<b>Jauges tampons de filetage</b> <b>Calibri a tampone filettati</b>		<b>Jauges bagues de filetage</b> <b>Calibri ad anello filettati</b>
<b>M</b> D5701-1 138      D5701-2 138      D5703 138		<b>M</b> D5704 139      D5714 139	
<b>MF</b> D5701-1 140      D5701-2 141      D5703 140		<b>MF</b> D5704 142      D5714 142	
<b>UNC</b> D5701-1 144      D5703 144		<b>UNC</b> D5704 144      D5714 144	
<b>UNF</b> D5701-1 145      D5703 145		<b>UNF</b> D5704 145      D5714 145	
<b>UNEF</b> D5703 145		<b>UNEF</b> D5704 145      D5714 145	
<b>G</b> D5701-1 146      D5701-2 146      D5703 146		<b>G</b> D5704 146      D5714 146	
<b>PG</b> D5725 146		<b>PG</b> D5704 146	
<b>NPT, NPTF</b> D5720 147		<b>NPT, NPTF</b> D5721 147	
<b>EG M, EG UNC, EG UNF</b> D5703 148			
<b>M nano</b> DN01 158      DN02 158		<b>M nano</b> DZ04 164      DZ14 164 DN04 169      DN14 169	
<b>MF nano</b> DN01 159      DN02 159		<b>MF nano</b> DZ04 165      DZ14 165 DN04 170      DN14 170	
<b>UNC nano</b> DN01 160      DN02 160		<b>UNC nano</b> DZ04 166      DZ14 166 DN04 171      DN14 171	
<b>UNF nano</b> DN01 160      DN02 160		<b>UNF nano</b> DZ04 166      DZ14 166 DN04 171      DN14 171	
<b>S nano</b> DN01 161      DN02 161		<b>S nano</b> DZ04 167      DZ14 167 DN04 172      DN14 172	
<b>SF nano</b> DN01 163      DN02 163		<b>SF nano</b> DZ04 168      DZ14 168 DN04 173      DN14 173	
<b>SL nano</b> DN01 163      DN02 163			
 <i>Toutes les jauges tampons de filetage nano sont certifiées SCS et le certificat payant est disponible sur commande.</i> Tutti i tamponi filettati nano sono certificati SCS e il certificato a pagamento è disponibile su ordinazione.		 <i>Toutes les jauges bagues de filetage nano ont un certificat de contrôle, réalisé avec des jauges tampons filetés de contrôle accrédités SCS. Le certificat de contrôle payant est disponible sur commande.</i> Tutti gli anelli di controllo nano hanno un certificato di misura, realizzato utilizzando tamponi di controllo a spina certificati SCS. Il certificato a pagamento è disponibile su ordinazione.	











































# REGISTRE — REGISTRO


	<p><i>Tampons rapporteurs</i> Tamponi di controllo a spina</p>		<p><i>Jauges étalons filetées</i> Campioni filettati</p>
<p><b>M nano</b> RN05-1 174      RN15-1 174 RN05-2 179      RN15-2 179</p> <p><b>MF nano</b> RN05-1 175      RN15-1 175 RN05-2 180      RN15-2 180</p> <p><b>UNC nano</b> RN05-1 176      RN15-1 176 RN05-2 181      RN15-2 181</p> <p><b>UNF nano</b> RN05-1 176      RN15-1 176 RN05-2 181      RN15-2 181</p> <p><b>S nano</b> RN05-1 177      RN15-1 177 RN05-2 182      RN15-2 182</p> <p><b>SF nano</b> RN05-1 178      RN15-1 178 RN05-2 183      RN15-2 183</p> <p> <i>Certificat SCS inclus.</i> <i>Certificato SCS incluso.</i></p>		<p><b>S nano</b> EN00 186</p> <p> <i>Certificat SCS inclus.</i> <i>Certificato SCS incluso.</i></p> <p></p> <p><i>Jauges nano - Équipement de contrôle - Certificat SCS</i> <i>Formulaire de commande pour jauges nano</i> <i>Micro-Safelock</i></p> <p><i>Table de dureté</i> <i>Tablette pouces - mm</i> <i>Table de conversion</i> <i>Perçage d'avant-trous</i> <i>Diamètre de tournage</i> <i>Questionnaire technique</i> <i>Conditions de livraison</i></p> <p><b>Vous trouverez de plus amples informations sous</b> <b><a href="http://www.dcswiss.com">www.dcswiss.com</a></b></p>	
	<p><i>Témoins d'usure</i> Testimone di usura</p>		
<p><b>M nano</b> RN05-3 184      RN15-3 184</p> <p><b>MF nano</b> RN05-3 185      RN15-3 185</p> <p> <i>Certificat SCS inclus.</i> <i>Certificato SCS incluso.</i></p>		<p>Calibri filettati nano - Dispositivi di ispezione - Certificato di misura SCS Modulo d'ordine per calibri filettati nano Micro-Safelock</p> <p>Tabella di durezza Tabella pollici - mm Tabella di conversione Prefori per filettare Diametri di tornitura Questionario tecnico Condizioni generali di vendita</p> <p><b>Potete trovare ulteriori informazioni sotto</b> <b><a href="http://www.dcswiss.com">www.dcswiss.com</a></b></p>	


# PICTOGRAMMES — SIMBOLI


**Tourbillonneurs, fraises à fileter, fraises à percer-fileter, tourbillonneurs-perceurs, mèches à centrer, mèches en carbure monobloc**  
**Fresa a filettare vorticosa, fresa a filettare, fresa a forare/filettare, fresa per filettatura circolare, punte da centro, punte elicoidali, in metallo duro integrale**

	Carbure monobloc Metallo duro integrale		Lubrification intérieure min. 20 bar Lubrificazione interna min. 20 bar
	Protection contre l'usure "VS" pour utilisation générale Protezione antiusura "VS" per uso generale		Canal de lubrification Canale di lubrificazione interno
	Protection "VX" pour aciers inoxydables et alliages de Nickel Protezione antiusura "VX" per acciai inossidabili e Leghe al Nickel		Canal de lubrification (BGF, 2 lèvres) Canale di lubrificazione interno (BGF, 2 taglianti)
	Protection "VH" pour aciers trempés ( $\leq 63$ HRC) Protezione antiusura "VH" per acciai temprati ( $\leq 63$ HRC)		Canal de lubrification (BGF, 3 lèvres) Canale di lubrificazione interno (BGF, 3 taglianti)
	Normes de l'industrie horlogère suisse Norme dell'industria degli orologi		Goujures hélicoïdales, hélice à 10° à droite Scanalature elicoidali con elica a 10° a destra
	Pour matières $\leq 63$ HRC (GWH - GFH) Per materiali $\leq 63$ HRC (GWH - GFH)		Goujures hélicoïdales, hélice à 15° à droite Scanalature elicoidali con elica a 15° a destra
	Tolérance de queue h5 / h6 Toleranza del gambo h5 / h6		Goujures hélicoïdales, hélice à 27° à droite Scanalature elicoidali con elica a 27° a destra
	Tolérance de queue h5 Toleranza del gambo h5		Goujures hélicoïdales, hélice à 27° à droite Scanalature elicoidali con elica a 27° a destra
	Tolérance de queue h6 Toleranza del gambo h6		Angle d'hélice à 0° (GWi5000 - GWH) 0° angolo d'elica (GWi5000 - GWH)
	Coaxialité Coassialità		Angle d'hélice à 10° à droite 10° angolo d'elica a destra
	Usinage HSC Lavorazione HSC		Angle d'hélice à 3° à gauche (ZBGF) 3° angolo d'elica a sinistra (ZBGF)
	GW1000 profil GW1000 profilo		Avec biseau circulaire à 45° pour chanfreiner le filetage Con taglio a 45° per smussare
	GW2000 profil GW2000 profilo		Rayon sur le diamètre extérieur Raggio sul diametro esterno
	GW3000 profil GW3000 profilo		Canal de lubrification GWi $\varnothing 0.8 - \leq 6.35$ mm Canale di lubrificazione interno GWi $\varnothing 0.8 - \leq 6.35$ mm
	GWi3000 profil GWi3000 profilo		Canal de lubrification GWi $\varnothing > 6.35 - \leq 20$ mm Canale di lubrificazione interno GWi $\varnothing > 6.35 - \leq 20$ mm
	GWi5000 profil GWi5000 profilo		Filetage conique 1:16 (NPT - NPTF) Filettatura conica 1:16 (NPT - NPTF)
	Nombre de dents pour programmation (GWi5000) Numero di denti per la programmazione (GWi5000)		Longueur fileté 2 x D <sub>1</sub> Lunghezza di filettatura 2 x D <sub>1</sub>
	Pour filetages exempts de bavures (GWi5000) Per filettature senza tracce di bavature (GWi5000)		Longueur fileté 2.5 x D <sub>1</sub> Lunghezza di filettatura 2.5 x D <sub>1</sub>
	Profil des tourbillonneurs-perceurs Profilo della fresa a filettare circolare		Longueur fileté 3 x D <sub>1</sub> Lunghezza di filettatura 3 x D <sub>1</sub>
	Tourbillonneurs-perceurs avec canal de lubrification Fresa per filettatura circolare con canale di lubrificazione		Longueur fileté 4 x D <sub>1</sub> Lunghezza di filettatura 4 x D <sub>1</sub>

# PICTOGRAMMES — SIMBOLI


 *Longueur filetée 1.5 x D<sub>1</sub>*  
Lunghezza di filettatura 1.5 x D<sub>1</sub>


 *Longueur filetée 2 x D<sub>1</sub>*  
Lunghezza di filettatura 2 x D<sub>1</sub>


 *Longueur filetée 2.5 x D<sub>1</sub>*  
Lunghezza di filettatura 2.5 x D<sub>1</sub>


 *Filetage intérieur*  
Filettatura interna


 *Filetage extérieur*  
Filettatura esterna

 *Filetage intérieur (GW - GWi - GWH)*  
Filettatura interna (GW - GWi - GWH)


 *Trou borgne (BGF)*  
Foro cieco (BGF)


 *Trou traversant (BGF)*  
Foro passante (BGF)


 *BGF, 2 lèvres*  
BGF, 2 taglienti


 *BGF, 3 lèvres*  
BGF, 3 taglienti


 *Filetage EG*  
Filettatura EG


 *Diamètre d'avant-trou*  
Prefori


 *Nombre de lèvres (Z)*  
Numero dei taglienti (Z)


 *LH-rot.*  
Direzione di rotazione a sinistra


 *HB*  
*HE*  
Sur demande  
Su richiesta

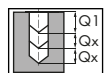
 *Enlèvement de la dent incomplète (GF61 - GFH61),*  
*passage à la nouvelle version en cours*  
*Rimozione della filettatura incompleta (GF61 - GFH61),*  
*in corso il passaggio alla nuova versione*


 *90°*  
*Angle de chanfrein 90°*  
Angolo di smussatura 90°


 *5x d<sub>1</sub>*  
*Profondeur de perçage 5 x d<sub>1</sub>*  
Profondità del foro 5 x d<sub>1</sub>


 *6x d<sub>1</sub>*  
*Profondeur de perçage 6 x d<sub>1</sub>*  
Profondità del foro 6 x d<sub>1</sub>


 *8x d<sub>1</sub>*  
*Profondeur de perçage 8 x d<sub>1</sub>*  
Profondità del foro 8 x d<sub>1</sub>


 *Q1*  
*Qx*  
*Qx*  
*Perçage par déburrage*  
Foratura profonda con alleggerimento delle sollecitazioni


 *130°*  
*Angle de pointe à 130°*  
Angolo di punta di 130°


 *140°*  
*Angle de pointe à 140°*  
Angolo di punta di 140°

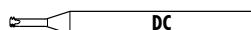
 *R30*  
*Goujures hélicoïdales, hélice à 30° à droite*  
Scanalature elicoidali con elica a 30° a destra

 *Lubrification intérieure, avec 2 sorties frontales*  
Lubrificazione interna, con 2 uscite frontali

 *Lubrification intérieure, avec 2 canaux torsadés*  
Lubrificazione interna, con 2 canali di raffreddamento a spirale

 *3x d<sub>1</sub>*  
*Pour profondeur à percer 3 x d<sub>1</sub>*  
Per profondità di foratura 3 x d<sub>1</sub>

 *5x d<sub>1</sub>*  
*Pour profondeur à percer 5 x d<sub>1</sub>*  
Per profondità di foratura 5 x d<sub>1</sub>




*Dimensions générales selon norme d'usine DC*  
Dimensioni di costruzione secondo lo standard di fabbrica DC




*Dimensions de queue selon DIN 6535 HA*  
Dimensioni del gambo secondo DIN 6535 HA

## Notice GFM

 *Pour éviter de recouper le profil, le diamètre de la fraise ne doit pas excéder 2/3 du diamètre à réaliser pour les pas standards (3/4 pour les pas fins).*

## Nota GFM

 Per evitare di ritagliare il profilo, il diametro della fresa non deve superare i 2/3 del diametro da realizzare per i passi standard e i 3/4 per i passi fini

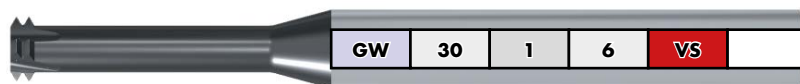


# CODIFICATION — CODIFICAZIONE

**DC** Tourbillonneurs en carbure monobloc

**DC** Frese a filettare vorticoso in metallo duro integrale

Exemple - Esempio



Exécution standard	Esecuzione standard	<b>GW</b>		
Pour aciers trempés (55 - ≤ 63 HRC)	Per acciai temprati (55 - ≤ 63 HRC)	<b>GWH</b>		
Avec canal de lubrification	Con canale di lubrificazione	<b>GWi</b>		
Une dent	Monodente		<b>11</b>	
Multi-dents à un profil	Multidenti ad un profilo		<b>20</b>	
Multi-dents à double profil	Multidenti a doppio profilo		<b>30</b>	
Multi-dents avec profil complet	Multidenti con profilo completo		<b>50</b>	
Lubrification extérieure	Lubrificazione esterna		<b>1</b>	
Lubrification intérieure	Lubrificazione interna		<b>6</b>	
Longueur fileté 2 x D <sub>1</sub>	Lunghezza di filettatura 2 x D <sub>1</sub>			<b>5</b>
Longueur fileté 2.5 x D <sub>1</sub>	Lunghezza di filettatura 2.5 x D <sub>1</sub>			<b>6</b>
Longueur fileté 3 x D <sub>1</sub>	Lunghezza di filettatura 3 x D <sub>1</sub>			<b>7</b>
Longueur fileté 4 x D <sub>1</sub>	Lunghezza di filettatura 4 x D <sub>1</sub>			<b>9</b>
Protection "VS" pour utilisation générale	Protezione antiusura "VS" per uso generale			<b>VS</b>
Protection "VX" pour aciers inoxydables et alliages de Nickel	Protezione antiusura "VX" per acciai inossidabili e Leghe al Nickel			<b>VX</b>
Protection "VH" pour aciers trempés (≤ 63 HRC)	Protezione antiusura "VH" per acciai temprati (≤ 63 HRC)			<b>VH</b>
Exécution spéciale	Esecuzione speciale			<b>SP</b>

**DC** Tourbillonneurs-perceurs en carbure monobloc

**DC** Frese a filettare evoluto in metallo duro integrale

Exemple - Esempio



Exécution standard	Esecuzione standard	<b>ZBGF</b>		
Goujures hélicoïdales, hélice à 3° à gauche	Scanalature elicoidali con elica a 3° a sinistra		<b>60</b>	
Lubrification intérieure	Lubrificazione interna		<b>6</b>	
Longueur fileté 2 x D <sub>1</sub>	Lunghezza di filettatura 2 x D <sub>1</sub>			<b>5</b>
Longueur fileté 3 x D <sub>1</sub>	Lunghezza di filettatura 3 x D <sub>1</sub>			<b>7</b>
Protection "VS" pour utilisation générale	Protezione antiusura "VS" per uso generale			<b>VS</b>
Exécution spéciale	Esecuzione speciale			<b>SP</b>

# CODIFICATION — CODIFICAZIONE

**DC** Fraises à fileter en carbure monobloc **DC** Frese a filettare in metallo duro integrale

Exemple - Esempio



Exécution standard	Esecuzione standard	<b>GF</b>				
Pour aciers trempés (55 - ≤ 63 HRC)	Per acciai temprati (55 - ≤ 63 HRC)	<b>GFH</b>				
Avec biseau circulaire à 45° pour chanfreiner le filetage	Con taglio per smusso a 45°	<b>GFS</b>				
Fraise à fileter polyvalente	Fresa polivalente	<b>GFM</b>				
Fraise à percer-fileter	Fresa a forare/filettare	<b>BGF</b>				
Goujures hélicoïdales 27° (GF61), 10° (GFH)	Scanalature elicoidali a 27° (GF61), 10° (GFH)		<b>61</b>			
Goujures hélicoïdales 15° (GF62, GFM62)	Scanalature elicoidali a 15° (GF62, GFM62)		<b>62</b>			
Goujures hélicoïdales 27° (GFS)	Scanalature elicoidali a 27° (GFS)		<b>66</b>			
Fraise à percer-fileter 2 lèvres	Fresa a forare/filettare 2 taglienti		<b>67</b>			
Fraise à percer-fileter 3 lèvres	Fresa a forare/filettare 3 taglienti		<b>68</b>			
Lubrification extérieure	Lubrificazione esterna			<b>1</b>		
Lubrification intérieure	Lubrificazione interna			<b>6</b>		
Longueur filetée 1.5 x D <sub>i</sub>	Lunghezza di filettatura 1.5 x D <sub>i</sub>				<b>0</b>	
Longueur filetée 2 x D <sub>i</sub>	Lunghezza di filettatura 2 x D <sub>i</sub>				<b>5</b>	
Longueur filetée 2.5 x D <sub>i</sub>	Lunghezza di filettatura 2.5 x D <sub>i</sub>				<b>6</b>	
Protection "VS" pour utilisation générale	Protezione antiusura "VS" per uso generale					<b>VS</b>
Protection "VX" pour aciers inoxydables et alliages de Nickel	Protezione antiusura "VX" per acciai inossidabili e Leghe al Nickel					<b>VX</b>
Protection "VH" pour aciers trempés (≤ 63 HRC)	Protezione antiusura "VH" per acciai temprati (≤ 63 HRC)					<b>VH</b>
Exécution spéciale	Esecuzione speciale					<b>SP</b>
Profil pour filetages extérieurs	Profilo per filettatura esterna					<b>EX</b>

## Notice GFM



Pour éviter de recouper le profil, le diamètre de la fraise ne doit pas excéder  $\frac{2}{3}$  du diamètre à réaliser pour les pas standards ( $\frac{3}{4}$  pour les pas fins).

## Nota GFM



Per evitare di ritagliare il profilo, il diametro della fresa non deve superare  $\frac{2}{3}$  del diametro da realizzare per i passi standard e  $\frac{3}{4}$  per i passi fini.

# CLASSIFICATION DES MATIÈRES

## Exemples pratiques de classification des matières

<b>11</b> Aciers de décolletage 1.0711 9S20 1.0715 9SMn28 1.0718 9SMnPb28 1.0726 3SS20 1.0737 9SMnPb36	<b>12</b> Aciers de construction ou de cémentation 1.0037 S137-2 (S235JR) 1.0050 S150-2 (E295) 1.0060 S160-2 (E335) 1.5919 15CrNi6 1.7131 16MnCr5	<b>13</b> Aciers au carbone 1.0503 C45 1.0535 C55 1.0601 C60 1.1545 C105W1 1.2067 102Cr6 (100Cr6)	<b>14</b> Aciers alliés < 850 N/mm <sup>2</sup> 1.2363 X100CrMoV5-1 1.3551 80MoCrV42-16 1.7218 25CrMo4 1.7220 34CrMo4 1.7225 42CrMo4	<b>15</b> Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup> 1.3553 X82WMoCrV6-5-4 1.6580 30CrNiMo8 1.7220 34CrMo4 1.7225 42CrMo4 1.8507 34CrAlMo5
<b>16</b> Aciers haute résistance ≤ 44 HRC EN-GJS-1200-2 1.6582 34CrNiMo6v 1.7225 42CrMo4v 1.7228 50CrMo4v 1.8515 31CrMo12v	<b>17</b> Aciers affinés > 44 - ≤ 54 HRC > 44 - ≤ 54 HRC	<b>18</b> Aciers trempés > 54 - ≤ 63 HRC > 54 - ≤ 63 HRC	<b>21</b> Aciers inoxydables, soufrés 1.4005 X12CrS13 1.4104 X14CrMoS17 1.4305 X10CrNiS18-9	<b>22</b> Austénitiques 1.4301 X5CrNi18-10 1.4406 X2CrNiMoN17-12-2 1.4435 X2CrNiMo18-14-3 1.4541 X6CrNiTi18-10 1.4571 X6CrNiMoTi17-12-2
<b>23</b> Ferritiques et martensitiques < 850 N/mm <sup>2</sup> 1.4112 X90CrMoV18 1.4540 X4CrNiCuNb16-4 1.4582 X4CrNiMoNb25-7 1.4762 X10CrAl24 1.4922 X20CrMo11-1	<b>24</b> Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup> 1.4057 X17CrNi17-2 1.4125 X105CrMo17 1.4542 X5CrNiCuNb16-4 1.4548 X5CrNiCuNb17-4-4 1.4748 X85CrMoV18-2	<b>31</b> Fonte grise 0.6015 GG15 0.6020 GG20 0.6025 GG25 0.6030 GG30	<b>32</b> Fonte à graphite sphéroïdale et malléable 0.7040 GGG40 0.7043 GGG40.3 0.7050 GGG50 0.7060 GGG60 0.7080 GGG80	<b>41</b> Titane pur 3.7024 Grad1 3.7034 Grad2 3.7055 Grad3 3.7065 Grad4
<b>42</b> Alliage de titane 3.7124 TiCu2.5 Ti6Al7Nb 3.7164 TiAl6V4 (Grad5) 3.7174 TiAl6V6Sn2	<b>51</b> Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup> 1.3912 Ni36 (Invar) 2.4360 NiCu30Fe (Monel 400) 2.4816 NiCr15Fe (Inconel 600) 1.4876 X10NiCrAlTi32-20	<b>52</b> Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup> 2.4375 NiCu30Al (MonelK500) 2.4631 NiCr20TiAl (Nimonic 80) 2.4668 NiCr19NbMo (Inconel718)	<b>53</b> Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup> 2.4631 NiCr20TiAl (Nimonic80) 2.4668 NiCr19NbMo (Inconel718)	<b>61</b> Cuivre pur (électrolytique) 2.0060 E-Cu57 (E-Cu)
<b>62</b> Laiton, bronze (couteux courts) 2.0401 CuZn39Pb3 (Ms58) 2.0402 CuZn40Pb2 (Ms58) 2.1030 CuSn8 (Bz) 2.1096 G-CuSn5ZnPb	<b>63</b> Laiton (couteux longs) 2.0240 CuZn15 (Ms85) 2.0265 CuZn30 (Ms70) 2.0321 CuZn37 (Ms63)	<b>71</b> Al non allié 3.0205 Al99 3.0255 Al99.5	<b>72</b> Al allié Si < 1.5 % 3.1255 AlCuSiMn 3.1355 AlCuMg2 3.2315 AlMgSi1 3.3206 AlMgSi0.5 3.4345 AlZnMgCu0.5	<b>73</b> Al allié Si > 1.5 % - < 10 % 3.2161 G-AlSi8Cu3 3.2162 GD-AlSi8Cu3 3.2341 G-AlSi5Mg 3.2371 G-AlSi7Mg
<b>74</b> Al allié Si > 10 %, Alliage Magnésium 3.2381 G-AlSi10Mg 3.2382 GD-AlSi10Mg 3.2581 G-AlSi12 3.2583 G-AlSi12 (Cu)	<b>81</b> Matières thermoplastiques Delrin (POM) Teflon Nylon	<b>82</b> Matières duroplastiques Bakelit Novopan	<b>83</b> Matières plastiques renforcées par fibres Thermo et duroplastiques, renforcées par fibre de verre	<b>Référence: DIN</b>
<b>91</b> Or jaune 2N18 Au585AgCu205 3N18 Au917AgCu44	<b>92</b> Or rose 4N18 5N18 Au585CuAg325 Au750AgCu Au917Cu83	<b>93</b> Or blanc Au750PdCu125 Au750PdCu150 Au585PdCu150 Au925Pd75	<b>94</b> Argent Ag999 Ag800Cu Ag925Cu	



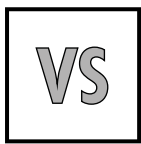
# CLASSIFICAZIONE DEI MATERIALI

## Esempi pratici della classificazione dei materiali

<b>11</b> Acciai da tornitura 1.0711 1212 1.0715 1213 1.0718 12L13 1.0726 1140 1.0737 12L14	<b>12</b> Acciai da costruzione / da cementazione 1.0037 1015 1.0050 A570 Gr.50 1.0060 A572 Gr.65 1.5919 3115 1.7131 5115	<b>13</b> Acciai al carbonio 1.0503 1045 1.0535 1055 1.0601 1060 1.1545 W110 1.2067 L 3	<b>14</b> Acciai legati < 850 N/mm <sup>2</sup> 1.2363 A2 1.3551 M50 1.7218 4130 1.7220 4135 1.7225 4140	<b>15</b> Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup> 1.3553 - 1.6580 4340 1.7220 4135 1.7225 4140 1.8507 A355CLD (K23510)
<b>16</b> Acciai ad alta resistenza ≤ 44 HRC EN-GJS-1200-2 1.6582 4340 1.7225 4140 1.7228 4150 1.8515 -	<b>17</b> Acciai raffinato > 44 - ≤ 54 HRC > 44 - ≤ 54 HRC	<b>18</b> Acciai temprati > 54 - ≤ 63 HRC > 54 - ≤ 63 HRC	<b>21</b> Acciai inox, allo zolfo 1.4005 416 1.4104 430F 1.4305 303	<b>22</b> Acciai inox, austenitici 1.4301 304 1.4406 316LN 1.4435 316L 1.4541 321 1.4571 316Ti
<b>23</b> Ferritici e martensitici < 850 N/mm <sup>2</sup> 1.4112 440B 1.4540 XM12 (15-5PH) 1.4582 - 1.4762 446 1.4821 4922	<b>24</b> Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup> 1.4057 431 1.4125 440C 1.4542 630 (17-4PH) 1.4748 -	<b>31</b> Ghisa grigia 0.6015 A48-25B 0.6020 A48-30B 0.6025 A48-40B 0.6030 A48-45B	<b>32</b> Ghisa grafitica sferoidale e malleabile 0.7040 60-40-18 0.7043 - 0.7050 65-45-12 0.7060 80-55-06 0.7080 120-90-02	<b>41</b> Titanio puro 3.7024 Gr.1 3.7034 Gr.2 3.7055 Gr.3 3.7065 Gr.4
<b>42</b> Leghe al titanio 3.7124 Alloy 230 F-1295 3.7164 Gr.5 3.7174 -	<b>51</b> Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup> 1.3912 K93600 2.4360 N04400 1.4816 N08800	<b>52</b> Leghe al Nickel 2 > 850 - < 1150 N/mm <sup>2</sup> 2.4375 N05500 (B865) 2.4631 N07080 (B637) 2.4668 N07718 (B637)	<b>53</b> Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup> 2.4631 N07080 (B637) 2.4668 N07718 (B637)	<b>61</b> Rame puro (elettrolitico) 2.0060 C11000
<b>62</b> Ottone, bronzo (trucioli corti) 2.0401 C38500 2.0402 C37800 2.1030 C52100 2.1096 -	<b>63</b> Ottone (trucioli lunghi) 2.0240 C23000 2.0265 C26000 2.0321 C27200	<b>71</b> Alluminio non legato 3.0205 1200 3.0255 1050A	<b>72</b> Leghe di alluminio Si < 1.5 % 3.1255 2014 3.1355 2024 3.2315 6082 3.3206 6060 3.4345 7020	<b>73</b> Leghe di alluminio Si > 1.5 % - < 10 % 3.2161 380.1 3.2162 - 3.2341 - 3.2371 A 356.2
<b>74</b> Leghe di al. Si > 10 %, Leghe al magnesio 3.2381 A360 3.2382 - 3.2581 A413 3.2583 413.1	<b>81</b> Materie termoplastiche Delrin (POM) Teflon Nylon	<b>82</b> Materie termoindurenti Bakelit Novopan	<b>83</b> Materie plastiche rinforzate con fibre Materie plastiche rinforzato con fibre	<b>Referenze:</b> <b>AISI/ASTM/UNS</b>
<b>91</b> Oro giallo 2N18 Au585AgCu205 3N18 Au917AgCu44	<b>92</b> Oro rosso 4N18 5N18 Au585CuAg325 Au750AgCu Au917Cu83	<b>93</b> Oro bianco Au750PdCu125 Au750PdCu150 Au585PdCu150 Au925Pd75	<b>94</b> Argento Ag999 Ag800Cu Ag925Cu	

# SPÉCIFICATIONS — SPECIFICHE

## REVÊTEMENT VS — VS-RIVESTIMENTO



- Protection contre l'usure "VS" pour utilisation générale
- Pour éviter les soudures froides  
\*\*\* \*\*
- Protezione contro l'usura "VS" per uso generale
- Per evitare saldature a freddo

## NOUVEAU : REVÊTEMENT VX — NUOVO: VX-RIVESTIMENTO



- Protection contre l'usure "VX" pour une meilleure résistance à l'usure dans des aciers inoxydables et les alliages de Nickel, permettant une plus longue durée de vie de l'outil  
\*\*\* \*\*
- Pour éviter les soudures froides  
\*\*\* \*\*
- Il rivestimento "VX" garantisce una maggiore resistenza all'usura sull'Acciai inossidabile e sulle leghe di Nickel, consente, inoltre, una maggiore durata di vita all'utensile
- Per evitare saldature a freddo

## NOUVEAU : REVÊTEMENT VH — NUOVO: VH-RIVESTIMENTO



- Protection contre l'usure "VH" pour l'usinage à sec des aciers trempés de dureté 55 - 63 HRC
- Contre le développement de la chaleur et la déformation plastique  
\*\*\* \*\*
- Rivestimento antiusura "VH" per la lavorazione a secco di acciai temprati con durezza 55 - 63 HRC
- Contro lo sviluppo di calore e la deformazione plastica

## Tourbillonneur GW SERIES 1000 — Fresa per filettare vorticoso GW SERIES 1000



- Application universelle
- Sécurité de processus élevée
- Adapté aux petites dimensions, dès 0.3 mm
- Espace suffisant pour l'évacuation des copeaux  
\*\*\* \*\*
- Pour longueurs filetées jusqu'à  $2.5 \times D_1$
- Universalmente applicabile
- Elevata affidabilità di processo
- Adatta per i diametri più piccoli, da 0.3 mm
- Più spazio per l'evacuazione dei trucioli
- Per lunghezza di filettatura fino a  $2.5 \times D_1$

## Tourbillonneur GW SERIES 2000 — Fresa per filettare vorticoso GW SERIES 2000



- Vitesse d'avance multipliée par le nombre de dents
- Moins d'usure, durée de vie augmentée
- Le nombre de dents varie selon la dimension
- Pour longueurs filetées jusqu'à  $2.5 \times D_1$   
\*\*\* \*\*
- Velocità di avanzamento moltiplicata per il numero di denti
- Minore usura, maggiore durata
- Numero variabile di denti, a seconda della dimensione
- Per lunghezza di filettatura fino a  $2.5 \times D_1$

## Tourbillonneur GW SERIES 3000 — Fresa per filettare vorticoso GW SERIES 3000



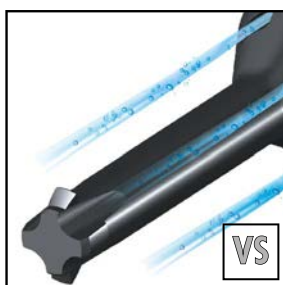
- Processus sécurisé, diminution des corrections sur CNC
- Pour longueurs filetées jusqu'à  $4 \times D_1$   
\*\*\* \*\*
- Affidabilità del processo, meno correzioni del raggio utensile sul CNC
- Per lunghezza di filettatura fino a  $4 \times D_1$

## Tourbillonneur **GWi SERIES 3000** — Fresa per filettare vorticoso **GWi SERIES 3000**



- Grâce à une alimentation optimale et spécifique en lubrifiant :
  - évacuation de copeaux améliorée
  - durée de vie doublée
- Pour longueurs filetées jusqu'à  $4 \times D_1$   
\*\*\* \*\*
- Grazie a una soluzione ottimale e specifica di lubrificazione :
  - evacuazione dei trucioli migliore
  - raddoppio della vita utensile
- Per lunghezza di filettatura fino a  $4 \times D_1$

## Tourbillonneur **GWi SERIES 5000** — Fresa per filettare vorticoso **GWi SERIES 5000**



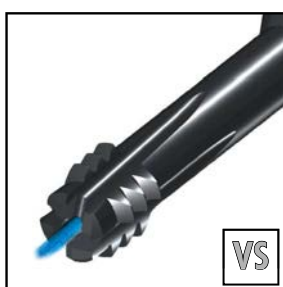
- Sa géométrie spécifique permet le fraisage finition du diamètre intérieur et aussi l'ébavurage du profil réalisé
- Filet géométriquement parfait grâce à un dispositif de coupe spécial
- Pour des filetages absolument sans bavures, même dans des matériaux difficiles à usiner, tout en conservant la précision dimensionnelle (tolérance)
- Qualité de surface élevée grâce à un conditionnement spécifique des arêtes de coupe
- Très bonne évacuation des copeaux et longue durée de vie des outils grâce à une alimentation optimale en lubrifiant
- Fiabilité du processus, moins de corrections de rayon d'outil sur la CNC
- Coupe à gauche, travail en avalant, pour moins de pression sur les arêtes de coupe
- Pour longueurs filetées jusqu'à  $3 \times D_1$   
\*\*\* \*\*
- La sua geometria specifica permette la fresatura finale del diametro interno e anche la sbavatura del profilo realizzato
- Filettatura perfetta dal punto di vista geometrico grazie alla speciale disposizione dei taglienti
- Per filettature assolutamente prive di bavature, anche su materiali difficili da lavorare, mantenendo la precisione dimensionale (tolleranza)
- Elevata qualità della superficie grazie alla qualità estremamente accurata del filo tagliente
- Ottima evacuazione dei trucioli e lunga durata dell'utensile grazie alle particolari caratteristiche della lubrificazione
- Affidabilità del processo, meno correzioni del raggio utensile sul CNC
- Rotazione sinistra - Taglio sinistro per garantire una minore pressione sui taglienti
- Per lunghezza di filettatura fino a  $3 \times D_1$

## Tourbillonneur **GWH SERIES 3000** — Fresa per filettare vorticoso **GWH SERIES 3000**



- Géométrie de coupe spécialement adaptée pour une grande sécurité de processus lors de l'usinage de matériaux à haute résistance jusqu'à 63 HRC
- Qualité de surface élevée grâce à un conditionnement spécifique des arêtes de coupe
- Coupe à gauche, travail en avalant, pour moins de pression sur les arêtes de coupe
- Pour longueurs filetées jusqu'à  $3 \times D_1$   
\*\*\* \*\*
- Geometria del tagliente appositamente adattata per un'elevata sicurezza di processo nella lavorazione di materiali ad alta resistenza fino a 63 HRC
- Elevata qualità della superficie grazie alla qualità estremamente accurata del filo tagliente
- Rotazione sinistra - Taglio sinistro per garantire una minore pressione sui taglienti
- Per lunghezza di filettatura fino a  $3 \times D_1$

## Tourbillonneur-perceur **ZBGF SERIES 6000** — Fresa per filettare evoluta **ZBGF SERIES 6000**



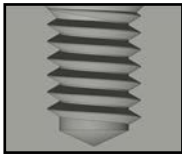
- Outil combiné pour la coupe de l'avant-trou et le tourbillonnage du filet
- Lubrification intérieure avancée pour une évacuation de copeaux optimale (au moins 20 bars)
- Très bonne qualité de surface grâce à un conditionnement spécifique des arêtes de coupe
- Coupe à gauche, travail en avalant, pour moins de pression sur les arêtes de coupe
- Pour longueurs filetées jusqu'à  $3 \times D_1$   
\*\*\* \*\*
- Utensile combinato per il taglio del preforo del nucleo e la fresatura del filetto
- Lubrificazione interna avanzata per una rimozione ottimale dei trucioli (almeno 20 bar)
- Elevata qualità della superficie grazie al condizionamento accurato del filo tagliente
- LH-Rot- Taglio a sinistra, lavorando a favore, per garantire una minore pressione sui taglienti
- Per lunghezza di filettatura fino a  $3 \times D_1$



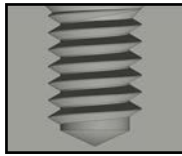
# APPLICATIONS SPÉCIFIQUES — APPLICAZIONI SPECIFICHE

## GW - GWH - GWi - GF - GFH - GFS - GFM

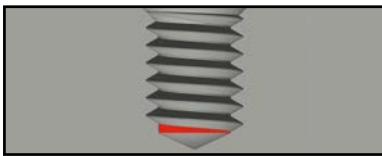
**RH**



**LH**

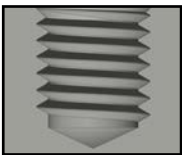


*Un seul tourbillonneur / une seule fraise pour filetages à droite et à gauche*  
*Una sola fresa vorticososa / una sola fresa a filettare per filetti destri e sinistri*

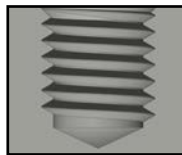


*Profondeur du filetage utile proche du fond du trou*  
*Profondità del filetto utile vicino al fondo del preforo*

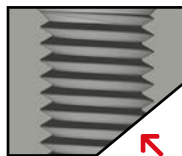
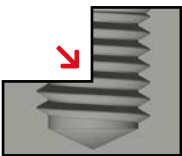
**M8 6H**



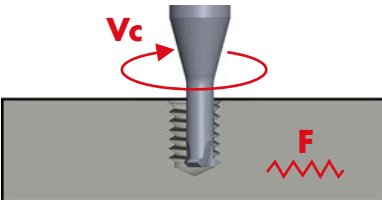
**M8 7G**



*Tolérances requises réglables à choix*  
*Tolleranze regolabili a piacere*

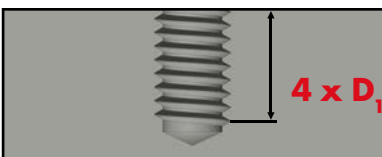


*Possibilité de réaliser des filetages incomplets ou interrompus*  
*Possibilità di realizzare filettature incomplete o interrotte*



*Vitesse de coupe et avance réglables individuellement en fonction de la matière à usiner*  
*Velocità di taglio ed avanzamento regolabili singolarmente in funzione del materiale impiegato*

## GW - GWi



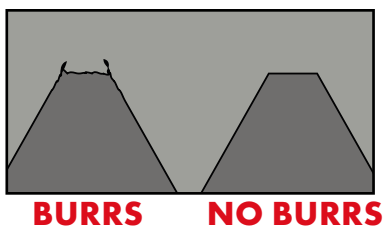
*Idéal pour trous borgnes profonds*  
*Ideale per fori ciechi profondi*

## GWH - GFH



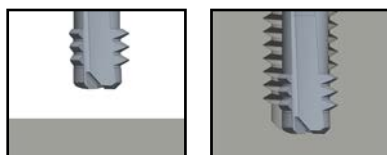
*Possibilité de réaliser des filetages dans des aciers trempés*  
*Possibilità di realizzare filettature negli acciai temprati*

## GWi5000

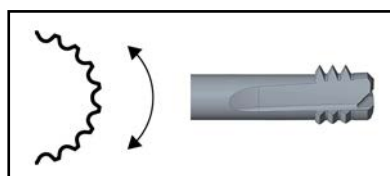


*Pour tourbillonner des filetages sans bavures*  
Per filettature senza bavatura

## ZBGF

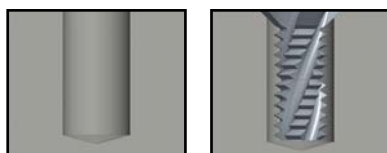


*Outil combiné pour percer l'avant-trou et le filetage*  
Utensile multifunzione per fresatura dei preforo e filetto



*Gain de place dans le magasin d'outils et économie de temps en changement d'outils*  
Risparmio di spazio nel magazzino utensili della macchina; risparmio di tempo durante il cambio utensile

## GFS

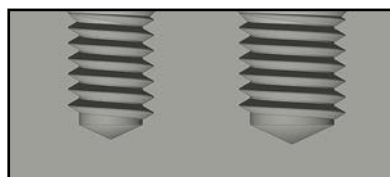


*Chanfreinage à 45° et fraisage du filet avec un seul outil*  
Smussare a 45° e fresatura del filetto con un solo utensile

## GFM

**M18X1**

**M24X1**

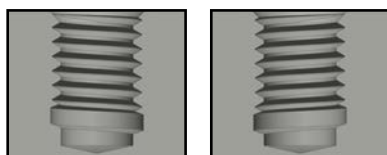


*Une seule fraise pour une grande plage de filetages avec le même pas*  
Una sola fresa per un'ampia gamma di diametri avente un unico passo

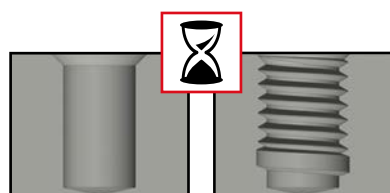
## BGF

**RH**

**LH**



*Une seule fraise à percer-fileter pour filetages à droite et à gauche*  
La stessa fresa per forare/filettare può essere utilizzata per filetti destri e sinistri

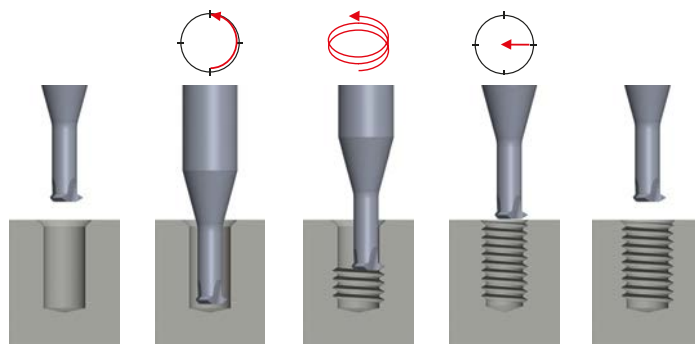


*Economie de temps et gain de place dans le magasin d'outils*  
Ridotti tempi di lavorazione e diminuzione dello spazio nel magazzino

# TABELLE D'UTILISATION GW — TABELLA D'IMPIEGO GW

Cycle de programmation pour tourbillonneurs GW1000 et GW2000

Ciclo di programmazione per frese a filettare vorticoso tipo GW1000 e GW2000



**DC** *Table de utilisation pour tourbillonneurs* **DC** *Tabella d'impiego per frese a filettare vorticoso*

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		<b>OE</b>
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		<b>OE</b>
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		<b>OE</b>
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		<b>OE</b>
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		<b>OE</b>
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		<b>OE</b>
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		<b>OE</b>
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		<b>OE</b>
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		<b>OE</b>
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		<b>OE</b>
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		<b>OE</b>
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		<b>OE A</b>
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		<b>OE</b>
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850	<b>OE</b>	<b>OE</b>
	42 Alliage de titane	Leghe al titanio	> 250	> 850	<b>OE</b>	<b>OE</b>
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		<b>OE</b>
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		<b>OE</b>
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		<b>OE</b>
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400	<b>OE</b>	<b>OE</b>
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700	<b>OE A</b>	<b>OE A</b>
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700	<b>OE</b>	<b>OE</b>
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350	<b>OE</b>	<b>OE</b>
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500	<b>OE</b>	<b>OE</b>
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		<b>OE</b>
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		<b>OE</b>
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-	<b>E</b>	<b>E</b>
	82 Matières duroplastiques	Materie termoindurenti	-	-	<b>E</b>	<b>E</b>
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		<b>E A</b>
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-	<b>OE</b>	<b>OE</b>
	92 Or rose	Oro rosso	-	-	<b>OE</b>	<b>OE</b>
	93 Or blanc	Oro bianco	-	-		<b>OE</b>
	94 Argent	Argento	-	-		<b>OE</b>

**O** Optimale avec huile de coupe  
Ottimale con olio da taglio

**O** Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

**E** Optimale avec émulsion  
Ottimale con emulsione

**E** Fonctionnelle avec émulsion  
Funzionale con emulsione



## GW1116



VS

Vc (m/min)		Avance fz (mm/dent)	Avanzamento fz (mm/dente)
Standard	Revêtu Rivestito	Ø 0.30 - 1.40	
	80-100		0.004-0.02
	80-100		0.004-0.02
	70-90		0.004-0.02
	70-90		0.004-0.02
	30-50		0.004-0.02
	15-40		0.004-0.02
	15-30		0.004-0.02
	40-60		0.004-0.02
	30-50		0.004-0.02
	30-50		0.004-0.02
	30-50		0.004-0.02
	90-120		0.004-0.02
	70-90		0.004-0.02
10-20	20-40	0.004-0.02	0.004-0.02
10-20	15-35	0.004-0.02	0.004-0.02
	20-40		0.004-0.02
	20-40		0.004-0.02
	20-30		0.004-0.02
150-200	200-250	0.004-0.02	0.004-0.02
100-150	150-200	0.004-0.02	0.004-0.02
100-150	150-200	0.004-0.02	0.004-0.02
150-200	200-250	0.004-0.02	0.004-0.02
150-200	200-250	0.004-0.02	0.004-0.02
	200-250		0.004-0.02
	200-250		0.004-0.02
150-200	200-250	0.004-0.02	0.004-0.02
80-120	100-200	0.004-0.02	0.004-0.02
	80-100		0.004-0.02
100-150	150-200	0.004-0.02	0.004-0.02
	70-90		0.004-0.02
	30-50		0.004-0.02
	90-120		0.004-0.02

## GW2016



VS

VS

VS

VS

Vc (m/min)		Avance fz (mm/dent)				Avanzamento fz (mm/dente)				
Standard	Revêtu Rivestito	Ø 0.50 - 1.00		Ø 1.01 - 2.74		Ø 2.75 - 6.00		Ø 6.01 - 20.00		
	80-100		0.004-0.01		0.01-0.05		0.04-0.10		0.08-0.15	11
	80-100		0.004-0.01		0.01-0.05		0.04-0.10		0.08-0.15	12
	70-90		0.004-0.01		0.01-0.05		0.02-0.10		0.05-0.15	13
	70-90		0.004-0.01		0.01-0.05		0.02-0.10		0.05-0.15	14
	30-50		0.004-0.01		0.01-0.05		0.02-0.08		0.04-0.15	15
	15-40		0.003-0.01		0.006-0.03		0.008-0.05		0.01-0.08	16
	15-30		0.003-0.01		0.006-0.025		0.008-0.04		0.01-0.06	17
										18
	40-60		0.004-0.01		0.01-0.05		0.02-0.10		0.05-0.15	21
	30-50		0.004-0.01		0.01-0.03		0.02-0.05		0.03-0.08	22
	30-50		0.004-0.01		0.01-0.03		0.02-0.05		0.03-0.08	23
	30-50		0.004-0.01		0.01-0.03		0.02-0.05		0.03-0.08	24
	90-120		0.004-0.01		0.01-0.05		0.04-0.10		0.08-0.15	31
	70-90		0.004-0.01		0.01-0.05		0.02-0.10		0.05-0.15	32
10-20	20-40	0.004-0.01	0.004-0.01	0.01-0.03	0.01-0.03	0.02-0.05	0.02-0.05	0.03-0.08	0.03-0.08	41
10-20	15-35	0.004-0.01	0.004-0.01	0.01-0.03	0.01-0.03	0.02-0.05	0.02-0.05	0.03-0.08	0.03-0.08	42
	20-40		0.004-0.01		0.01-0.03		0.02-0.06		0.03-0.08	51
	20-40		0.004-0.01		0.01-0.03		0.02-0.06		0.03-0.08	52
	20-30		0.003-0.01		0.006-0.03		0.008-0.05		0.03-0.08	53
150-200	200-250	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.02-0.10	0.02-0.10	0.05-0.15	0.05-0.15	61
100-150	150-200	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.04-0.10	0.04-0.10	0.08-0.15	0.08-0.15	62
100-150	150-200	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.02-0.10	0.02-0.10	0.05-0.15	0.05-0.15	63
150-200	200-300	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.05-0.10	0.05-0.10	0.10-0.20	0.10-0.20	71
150-200	200-300	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.05-0.10	0.05-0.10	0.10-0.20	0.10-0.20	72
	200-300		0.004-0.01		0.01-0.05		0.05-0.10		0.10-0.20	73
	200-300		0.004-0.01		0.01-0.05		0.04-0.10		0.08-0.15	74
150-200	200-300	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.05-0.10	0.05-0.10	0.10-0.20	0.10-0.20	81
80-120	100-200	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.04-0.10	0.04-0.10	0.08-0.15	0.08-0.15	82
	80-100		0.004-0.01		0.01-0.05		0.04-0.10		0.08-0.15	83
100-150	150-200	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.04-0.10	0.04-0.10	0.08-0.15	0.08-0.15	91
	70-90		0.004-0.01		0.01-0.05	0.02-0.10	0.02-0.10	0.04-0.15	0.04-0.15	92
	30-50		0.004-0.01		0.01-0.05		0.02-0.05		0.03-0.08	93
	90-120		0.004-0.01		0.01-0.05		0.02-0.10		0.04-0.15	94

**A** Optimale avec air  
Ottimale con aria

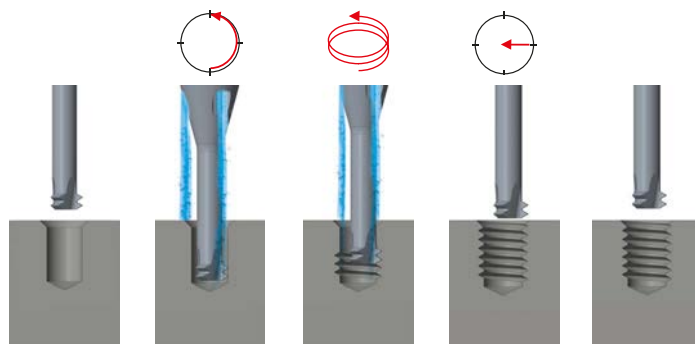
**A** Fonctionnelle avec air  
Funzionale con aria

Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.

# TABELLE D'UTILISATION GW - GWi — TABELLA D'IMPIEGO GW - GWi

Cycle de programmation pour tourbillonneurs GW3000 - GWi3000

Ciclo di programmazione per frese a filettare vorticoso GW3000 e GWi3000



**DC** **Tabelle d'utilisation pour tourbillonneurs** **DC** **Tabella d'impiego per frese a filettare vorticoso**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		OE
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		OE
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		OE
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		OE
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		OE
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		OE
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		OE
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		OE
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		OE
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		OE
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		OE
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		OE A
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		OE
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850	OE	OE
	42 Alliage de titane	Leghe al titanio	> 250	> 850	OE	OE
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		OE
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		OE
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		OE
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400	OE	OE
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700	OE A	OE A
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700	OE	OE
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350	OE	OE
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500	OE	OE
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		OE
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		OE
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-	E	E
	82 Matières duroplastiques	Materie termoindurenti	-	-	E	E
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		E A
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-	OE	OE
	92 Or rose	Oro rosso	-	-	OE	OE
	93 Or blanc	Oro bianco	-	-		OE
	94 Argent	Argento	-	-		OE

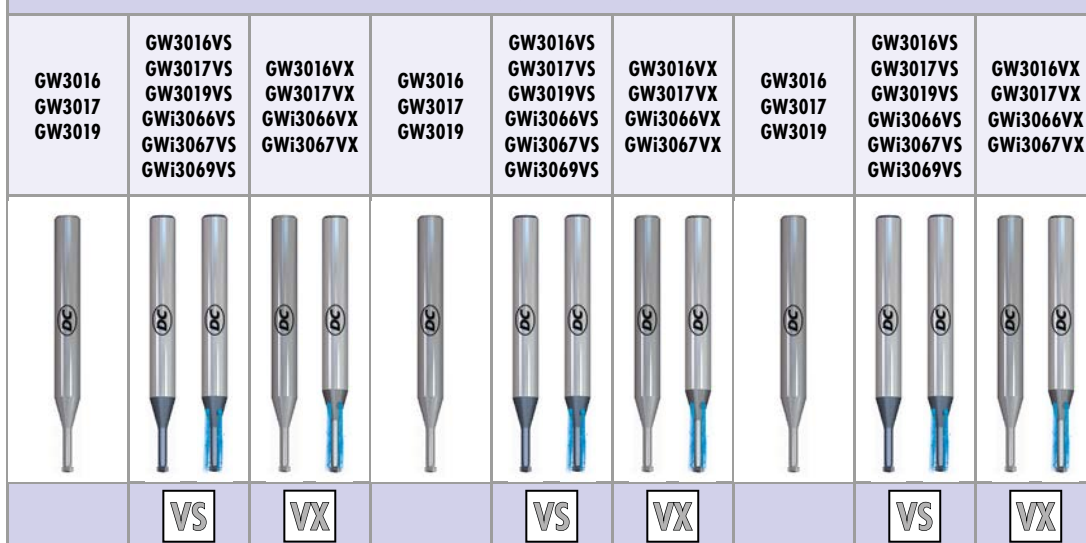
**O** Optimale avec huile de coupe  
Ottimale con olio da taglio

**O** Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

**E** Optimale avec émulsion  
Ottimale con emulsione

**E** Fonctionnelle avec émulsion  
Funzionale con emulsione

## GW3000 - GWi3000



Vc (m/min)		Avance fz (mm/dent)				Avanzamento fz (mm/dente)					
Standard Standard	Revêtu Rivestito	Ø 0.80 - 2.74		Ø 2.75 - 6.00		Ø 6.01 - 20.00					
	80-100		0.01-0.05	0.01-0.05		0.04-0.10	0.04-0.10		0.08-0.15	0.08-0.15	11
	80-100		0.01-0.05	0.01-0.05		0.04-0.10	0.04-0.10		0.08-0.15	0.08-0.15	12
	70-90		0.01-0.05	0.01-0.05		0.02-0.10	0.02-0.10		0.05-0.15	0.05-0.15	13
	70-90		0.01-0.05	0.01-0.05		0.02-0.10	0.02-0.10		0.05-0.15	0.05-0.15	14
	30-50		0.01-0.05	0.01-0.05		0.02-0.08	0.02-0.08		0.04-0.15	0.04-0.15	15
	15-40		0.006-0.03	0.006-0.03		0.008-0.05	0.008-0.05		0.01-0.08	0.01-0.08	16
	15-30		0.006-0.025	0.006-0.025		0.008-0.04	0.008-0.04		0.01-0.06	0.01-0.06	17
											18
	40-60		0.01-0.05	0.01-0.05		0.02-0.10	0.02-0.10		0.05-0.15	0.05-0.15	21
	30-50		0.01-0.03	0.01-0.03		0.02-0.05	0.02-0.05		0.03-0.08	0.03-0.08	22
	30-50		0.01-0.03	0.01-0.03		0.02-0.05	0.02-0.05		0.03-0.08	0.03-0.08	23
	30-50		0.01-0.03	0.01-0.03		0.02-0.05	0.02-0.05		0.03-0.08	0.03-0.08	24
	90-120		0.01-0.05	0.01-0.05		0.04-0.10	0.04-0.10		0.08-0.15	0.08-0.15	31
	70-90		0.01-0.05	0.01-0.05		0.02-0.10	0.02-0.10		0.05-0.15	0.05-0.15	32
10-20	20-40	0.01-0.03	0.01-0.03	0.01-0.03	0.02-0.05	0.02-0.05	0.02-0.05	0.03-0.08	0.03-0.08	0.03-0.08	41
10-20	15-35	0.01-0.03	0.01-0.03	0.01-0.03	0.02-0.05	0.02-0.05	0.02-0.05	0.03-0.08	0.03-0.08	0.03-0.08	42
	20-40		0.01-0.03	0.01-0.03		0.02-0.06	0.02-0.06		0.03-0.08	0.03-0.08	51
	20-40		0.01-0.03	0.01-0.03		0.02-0.06	0.02-0.06		0.03-0.08	0.03-0.08	52
	20-30		0.006-0.03	0.006-0.03		0.008-0.05	0.008-0.05		0.03-0.08	0.03-0.08	53
150-200	200-250	0.01-0.05	0.01-0.05	0.01-0.05	0.02-0.10	0.02-0.10	0.02-0.10	0.05-0.15	0.05-0.15	0.05-0.15	61
100-150	150-200	0.01-0.05	0.01-0.05	0.01-0.05	0.04-0.10	0.04-0.10	0.04-0.10	0.08-0.15	0.08-0.15	0.08-0.15	62
100-150	150-200	0.01-0.05	0.01-0.05	0.01-0.05	0.02-0.10	0.02-0.10	0.02-0.10	0.05-0.15	0.05-0.15	0.05-0.15	63
150-200	200-300	0.01-0.05	0.01-0.05	0.01-0.05	0.05-0.10	0.05-0.10	0.05-0.10	0.10-0.20	0.10-0.20	0.10-0.20	71
150-200	200-300	0.01-0.05	0.01-0.05	0.01-0.05	0.05-0.10	0.05-0.10	0.05-0.10	0.10-0.20	0.10-0.20	0.10-0.20	72
	200-300		0.01-0.05	0.01-0.05		0.05-0.10	0.05-0.10		0.10-0.20	0.10-0.20	73
	200-300		0.01-0.05	0.01-0.05		0.04-0.10	0.04-0.10		0.08-0.15	0.08-0.15	74
150-200	200-300	0.01-0.05	0.01-0.05	0.01-0.05	0.05-0.10	0.05-0.10	0.05-0.10	0.10-0.20	0.10-0.20	0.10-0.20	81
80-120	100-200	0.01-0.05	0.01-0.05	0.01-0.05	0.04-0.10	0.04-0.10	0.04-0.10	0.08-0.15	0.08-0.15	0.08-0.15	82
	80-100		0.01-0.05	0.01-0.05		0.04-0.10	0.04-0.10		0.08-0.15	0.08-0.15	83
100-150	150-200	0.01-0.05	0.01-0.05	0.01-0.05	0.04-0.10	0.04-0.10	0.04-0.10	0.08-0.15	0.08-0.15	0.08-0.15	91
70-90	90-120	0.01-0.05	0.01-0.05	0.01-0.05	0.02-0.10	0.02-0.10	0.02-0.10	0.04-0.15	0.04-0.15	0.04-0.15	92
	30-50		0.01-0.05	0.01-0.05		0.02-0.05	0.02-0.05		0.03-0.08	0.03-0.08	93
	90-120		0.01-0.05	0.01-0.05		0.02-0.10	0.02-0.10		0.04-0.15	0.04-0.15	94

**A** Optimale avec air  
Ottimale con aria

**A** Fonctionnelle avec air  
Funzionale con aria

Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.



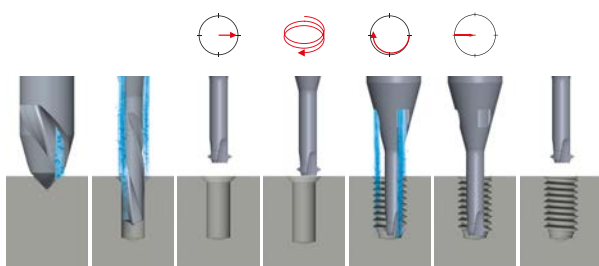


# TABELLE D'UTILISATION GWi - GWH — TABELLA D'IMPIEGO GWi - GWH

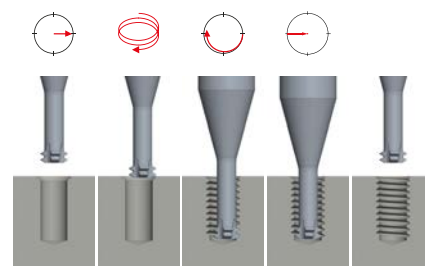
Cycle de programmation pour tourbillonneurs GWi5000 - GWH3000

Ciclo di programmazione per frese a filettare vorticoso GWi5000 e GWH3000

## GWi5000



## GWH3000



## (DC) Tabelle d'utilisation pour tourbillonneurs (DC) Tabella d'impiego per frese a filettare vorticoso

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		OE
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		OE
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		OE
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		OE
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		OE
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		OE
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		OE
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		OE
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		OE
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		OE
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		OE
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		OE
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		OE
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		OE
	42 Alliage de titane	Leghe al titanio	> 250	> 850		OE
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		OE
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		OE
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		OE
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (eletrolitico)	< 120	< 400		OE
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		OE
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		OE
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		OE
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		OE
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		OE
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		OE
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-		E
	82 Matières duroplastiques	Materie termoindurenti	-	-		E
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		E
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		OE
	92 Or rose	Oro rosso	-	-		OE
	93 Or blanc	Oro bianco	-	-		OE
	94 Argent	Argento	-	-		OE

Optimale avec huile de coupe  
Ottimale con olio da taglio

Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

Optimale avec émulsion  
Ottimale con emulsione

Fonctionnelle avec émulsion  
Funzionale con emulsione

### GW5000



VS

VS

Vc (m/min)		Avance fz (mm/dent)	Avanzamento fz (mm/dente)
Standard	Revêtu Rivestito	Ø 0.80 - 2.74	Ø 2.75 - 6.00
	80-100	0.007-0.05	0.04-0.10
	80-100	0.007-0.05	0.04-0.10
	70-90	0.007-0.05	0.02-0.10
	70-90	0.007-0.05	0.02-0.10
	30-50	0.007-0.05	0.02-0.08
	15-40	0.004-0.03	0.008-0.05
	15-30	0.004-0.025	0.008-0.04
	40-60	0.007-0.05	0.02-0.10
	30-50	0.007-0.03	0.02-0.05
	30-50	0.007-0.03	0.02-0.05
	30-50	0.007-0.03	0.02-0.05
	90-120	0.007-0.05	0.04-0.10
	70-90	0.007-0.05	0.02-0.10
	20-40	0.007-0.03	0.02-0.05
	15-35	0.007-0.03	0.02-0.05
	20-40	0.007-0.03	0.02-0.06
	20-40	0.007-0.03	0.02-0.06
	20-30	0.004-0.03	0.008-0.05
	200-250	0.007-0.05	0.02-0.10
	150-200	0.007-0.05	0.04-0.10
	150-200	0.007-0.05	0.02-0.10
	200-300	0.007-0.05	0.05-0.10
	200-300	0.007-0.05	0.05-0.10
	200-300	0.007-0.05	0.05-0.10
	200-300	0.007-0.05	0.04-0.10
	200-300	0.007-0.05	0.05-0.10
	100-200	0.007-0.05	0.04-0.10
	80-100	0.007-0.05	0.04-0.10
	150-200	0.007-0.05	0.04-0.10
	90-120	0.007-0.05	0.02-0.10
	30-50	0.007-0.05	0.02-0.05
	90-120	0.007-0.05	0.02-0.10

### GWH3000



VH

VH

Lubrifiant Lubrificante		Vc (m/min)		Avance fz (mm/dent)	Avanzamento fz (mm/dente)	
Standard	Revêtu Rivestito	Standard	Revêtu Rivestito	Ø 2.75 - 6.00	Ø 6.01 - 12.70	
						11
						12
						13
						14
						15
			15-40	0.008-0.05	0.01-0.08	16
			15-30	0.008-0.04	0.01-0.06	17
			25-50	0.01-0.025	0.015-0.035	18
						21
						22
						23
						24
			90-120	0.04-0.10	0.08-0.15	31
						32
						41
						42
						51
						52
						53
						61
			150-200	0.04-0.10	0.08-0.15	62
						63
						71
						72
						73
			200-300	0.04-0.10	0.08-0.15	74
						81
						82
			80-100	0.04-0.10	0.08-0.15	83
						91
						92
						93
						94

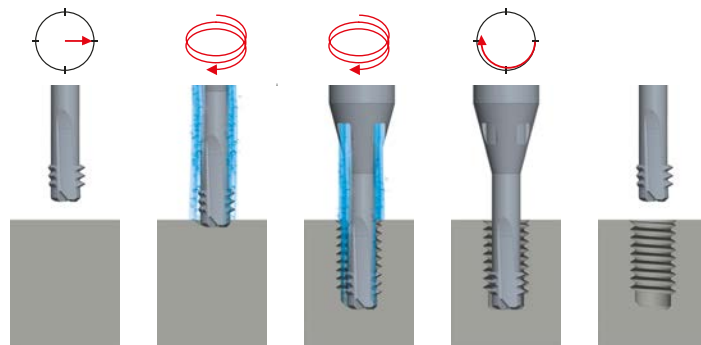
Optimale avec air  
Ottimale con aria

Fonctionnelle avec air  
Funzionale con aria

Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.

# TABELLE D'UTILISATION ZBGF — TABELLA D'IMPIEGO ZBGF

Cycle de programmation pour tourbillonneurs-perceurs ZBGF6065 - ZBGF6067  
Ciclo di programmazione per frese a filettare evoluto ZBGF6065 - ZBGF6067



**DC** **Tabelle d'utilisation pour**  
**tourbillonneur-perceur ZBGF**

**DC** **Tabella d'impiego per**  
**frese a filettare evoluto ZBGF**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		OE
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		OE
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		OE
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		OE
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		OE
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		OE
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		OE
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		OE
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		OE
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		OE
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		OE
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		OE
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		OE
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		OE
	42 Alliage de titane	Leghe al titanio	> 250	> 850		OE
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		OE
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		OE
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		OE
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400		
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		OE
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		OE
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		OE
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		OE
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		OE
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		OE
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-		E
	82 Matières duroplastiques	Materie termoindurenti	-	-		E
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		E
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		OE
	92 Or rose	Oro rosso	-	-		OE
	93 Or blanc	Oro bianco	-	-		OE
	94 Argent	Argento	-	-		OE

**O** Optimale avec huile de coupe  
Ottimale con olio da taglio

**O** Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

**E** Optimale avec émulsion  
Ottimale con emulsione

**E** Fonctionnelle avec émulsion  
Funzionale con emulsione

## ZBCF

ZBCF6065VS

ZBCF6067VS



VS

VS

Avance fz  
(mm/dent)

Avanzamento fz  
(mm/dente)

Vc (m/min)			
Standard	Revêtu Rivestito		
	50-100	0.02-0.06	11
	50-100	0.01-0.05	12
	50-100	0.01-0.05	13
	50-100	0.01-0.05	14
	40-80	0.01-0.05	15
	30-60	0.008-0.04	16
	30-60	0.006-0.025	17
			18
	40-80	0.01-0.04	21
	30-50	0.01-0.04	22
	30-60	0.01-0.04	23
	30-50	0.01-0.03	24
	70-140	0.01-0.05	31
	50-100	0.01-0.05	32
	30-50	0.01-0.04	41
	30-50	0.01-0.04	42
	40-60	0.01-0.03	51
	30-50	0.01-0.03	52
	30-50	0.005-0.03	53
			61
	100-200	0.01-0.05	62
	100-200	0.01-0.05	63
	100-200	0.01-0.05	71
	100-200	0.01-0.05	72
	100-200	0.01-0.05	73
	70-140	0.01-0.05	74
	80-180	0.05-0.10	81
	80-180	0.02-0.08	82
	50-150	0.02-0.10	83
	80-120	0.02-0.08	91
	50-100	0.01-0.05	92
	40-80	0.01-0.04	93
	50-100	0.01-0.05	94



**A** Optimale avec air  
Ottimale con aria

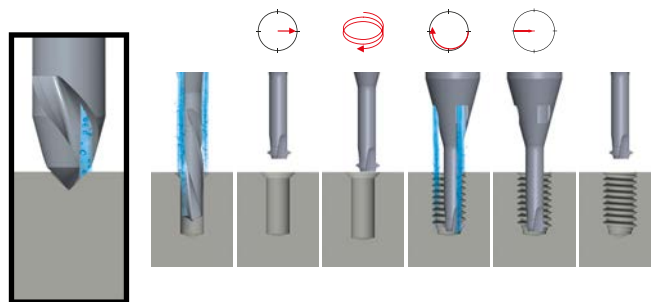
**A** Fonctionnelle avec air  
Funzionale con aria

Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.



# TABELLE D'UTILISATION C315VS — TABELLA D'IMPIEGO C315VS

## Cycle de programmation pour mèches à centrer C315VS Ciclo di programmazione per punte da centro C315VS



### **Table de utilisation pour mèches à centrer** **Tabella d'impiego per punte da centro**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinato > 44 - ≤ 54 HRC	> 410	> 1400		
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		
	42 Alliage de titane	Leghe al titanio	> 250	> 850		
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400		
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-		
	82 Matières duroplastiques	Materie termoindurenti	-	-		
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		
	92 Or rose	Oro rosso	-	-		
	93 Or blanc	Oro bianco	-	-		
	94 Argent	Argento	-	-		

Optimale avec huile de coupe  
Ottimale con olio da taglio

Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

Optimale avec émulsion  
Ottimale con emulsione

Fonctionnelle avec émulsion  
Funzionale con emulsione

# G315VS



Vc (m/min)		Avance f (mm/tour)			Avanzamento f (mm/giro)			
Standard	Revêtu Rivestito	Ø 1.40	Ø 2.00	Ø 3.00	Ø 4.00	Ø 6.00	Ø 8.00	
	120	0.05	0.08	0.10	0.12	0.15	0.20	11
	120	0.05	0.08	0.10	0.12	0.15	0.20	12
	120	0.05	0.08	0.10	0.12	0.15	0.20	13
	80	0.05	0.08	0.10	0.12	0.15	0.20	14
	60	0.03	0.04	0.06	0.08	0.12	0.18	15
	40	0.02	0.03	0.04	0.05	0.06	0.07	16
	40	0.02	0.03	0.04	0.05	0.06	0.07	17
								18
	60	0.03	0.04	0.06	0.08	0.12	0.18	21
	50	0.03	0.04	0.06	0.07	0.09	0.11	22
	50	0.03	0.04	0.06	0.07	0.09	0.11	23
	50	0.03	0.04	0.06	0.07	0.09	0.11	24
	100	0.04	0.05	0.07	0.09	0.11	0.15	31
	100	0.04	0.05	0.07	0.09	0.11	0.15	32
	25	0.03	0.04	0.06	0.07	0.09	0.11	41
	25	0.04	0.07	0.09	0.11	0.14	0.18	42
	25	0.025	0.03	0.04	0.05	0.07	0.09	51
	20	0.025	0.03	0.04	0.05	0.07	0.09	52
	10	0.025	0.03	0.04	0.05	0.07	0.09	53
	100	0.06	0.09	0.11	0.13	0.18	0.23	61
	100	0.06	0.09	0.11	0.13	0.16	0.18	62
	80	0.06	0.09	0.11	0.13	0.16	0.18	63
	150	0.06	0.09	0.11	0.13	0.18	0.23	71
	150	0.06	0.09	0.11	0.13	0.18	0.23	72
	100	0.06	0.09	0.11	0.13	0.18	0.23	73
	100	0.06	0.09	0.11	0.13	0.18	0.23	74
	200	0.08	0.11	0.13	0.15	0.20	0.25	81
	200	0.08	0.11	0.13	0.15	0.20	0.25	82
	100	0.08	0.11	0.13	0.15	0.20	0.25	83
	200	0.08	0.11	0.13	0.15	0.20	0.25	91
	150	0.08	0.11	0.13	0.15	0.20	0.25	92
	100	0.08	0.11	0.13	0.15	0.20	0.25	93
	100	0.08	0.11	0.13	0.15	0.20	0.25	94

**A** Optimale avec air  
Ottimale con aria

**A** Fonctionnelle avec air  
Funzionale con aria

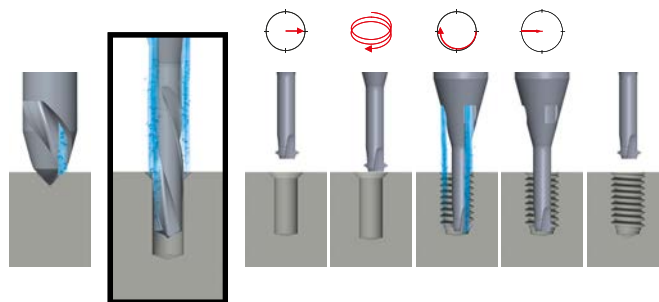
Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.



# TABELLE D'UTILISATION FZ315VS — TABELLA D'IMPIEGO FZ315VS

































## Cycle de programmation pour mèches FZ315VS


## Ciclo di programmazione per punte elicoidali FZ315VS





### **Tabelle d'utilisation pour mèches**

### **Tabella d'impiego per punte elicoidali**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		
	42 Alliage de titane	Leghe al titanio	> 250	> 850		
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400		
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-		
	82 Matières duroplastiques	Materie termoindurenti	-	-		
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		
	92 Or rose	Oro rosso	-	-		
	93 Or blanc	Oro bianco	-	-		
	94 Argent	Argento	-	-		

 Optimale avec huile de coupe  
Ottimale con olio da taglio

 Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

 Optimale avec émulsion  
Ottimale con emulsione

 Fonctionnelle avec émulsion  
Funzionale con emulsione

### FZ315VS



Vc (m/min) Ø 0.58 - 2.0		Avance f (mm/tour)				Avanzamento f (mm/giro)	
Standard	Revêtu Rivestito	Ø0.58-0.82	Ø0.83-1.07	Ø1.08-1.46	Ø1.47-2.0	Q1	Qx
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	1xd,-4xd	1xd,-2xd
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	1xd,-4xd	1xd,-2xd
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	30-45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	30-45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	30-45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	1xd,-4xd	1xd,-2xd
	35-50	0.02-0.025	0.025-0.035	0.04-0.05	0.05-0.065	1xd,-4xd	1xd,-2xd
	35-50	0.02-0.025	0.025-0.035	0.04-0.05	0.05-0.065	1xd,-4xd	1xd,-2xd
	50-80	0.025-0.045	0.045-0.065	0.065-0.085	0.085-0.10	4xd,-8xd	4xd
	40-70	0.025-0.045	0.045-0.065	0.065-0.085	0.085-0.10	4xd,-8xd	4xd
	15-25	0.005-0.02	0.015-0.045	0.04-0.06	0.055-0.07	1/2xd,-1xd	1/4xd,-1/2xd
	15-25	0.005-0.02	0.015-0.045	0.04-0.06	0.055-0.07	1/2xd,-1xd	1/4xd,-1/2xd
	15-25	0.005-0.02	0.02-0.025	0.025-0.035	0.035-0.05	1/2xd,-1xd	1/2xd
	15-25	0.015-0.02	0.02-0.025	0.025-0.035	0.035-0.05	1/2xd,-1xd	1/2xd
	15-25	0.005-0.01	0.01-0.02	0.02-0.03	0.03-0.04	1/2xd,-1xd	1/2xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	4xd,-8xd	4xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	4xd,-8xd	4xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	4xd,-8xd	4xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	2xd,-3xd	3xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	2xd,-3xd	3xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	2xd,-3xd	3xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	4xd,-8xd	4xd
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	4xd,-8xd	4xd
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	2xd,-3xd	3xd
	50-80	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	2xd,-3xd	3xd
	50-80	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	2xd,-3xd	3xd
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	2xd,-3xd	3xd
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	2xd,-3xd	3xd

**A** Optimale avec air  
Ottimale con aria

**A** Fonctionnelle avec air  
Funzionale con aria

### FZ315VS



Vc (m/min) Ø 2.01 - 5.4		Avance f (mm/tour)			Avanzamento f (mm/giro)
Standard	Revêtu Rivestito	Ø2.01-3.05	Ø3.06-4.5	Ø4.51-5.4	Qx
	80-110	0.07-0.12	0.12-0.18	0.18-0.23	
	80-110	0.07-0.12	0.12-0.17	0.17-0.22	
	70-100	0.07-0.12	0.12-0.17	0.17-0.22	
	70-100	0.07-0.12	0.12-0.17	0.17-0.22	
	70-100	0.07-0.12	0.12-0.17	0.17-0.22	
	70-100	0.07-0.12	0.12-0.17	0.17-0.22	
	70-100	0.07-0.10	0.10-0.14	0.14-0.17	
	60-80	0.07-0.10	0.10-0.15	0.14-0.18	
	60-80	0.045-0.055	0.055-0.07	0.07-0.10	
	60-80	0.045-0.055	0.055-0.07	0.07-0.10	
	60-80	0.05-0.065	0.05-0.065	0.06-0.09	
	60-80	0.05-0.065	0.05-0.065	0.06-0.09	
	90-130	0.10-0.15	0.15-0.20	0.20-0.25	
	80-120	0.10-0.14	0.14-0.18	0.18-0.23	
	30-40	0.055-0.07	0.055-0.07	0.055-0.07	1/3xd,-1/2xd
	30-40	0.055-0.07	0.055-0.07	0.055-0.07	1/3xd,-1/2xd
	30-40	0.035-0.05	0.035-0.05	0.05-0.08	
	30-40	0.035-0.05	0.035-0.05	0.05-0.08	
	30-40	0.03-0.04	0.03-0.04	0.04-0.06	
	130-180	0.12-0.15	0.15-0.20	0.20-0.25	
	130-180	0.12-0.15	0.15-0.20	0.20-0.25	
	80-110	0.12-0.15	0.14-0.18	0.18-0.23	
	130-180	0.12-0.15	0.15-0.20	0.20-0.25	
	130-180	0.12-0.15	0.15-0.20	0.20-0.25	
	100-130	0.12-0.15	0.14-0.18	0.18-0.23	
	100-130	0.12-0.15	0.14-0.18	0.18-0.23	
	130-180	0.12-0.15	0.15-0.20	0.20-0.25	
	130-180	0.12-0.15	0.15-0.20	0.20-0.25	
	80-120	0.07-0.12	0.12-0.18	0.18-0.23	
	130-180	0.07-0.12	0.12-0.17	0.17-0.22	
	130-180	0.07-0.12	0.12-0.17	0.17-0.22	
	80-110	0.07-0.12	0.12-0.17	0.17-0.22	
	80-110	0.07-0.12	0.12-0.17	0.17-0.22	



















Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.





# TABELLE D'UTILISATION F286VS — TABELLA D'IMPIEGO F286VS


## **Tabelle d'utilisation pour mèches**


## **Tabella d'impiego per punte elicoidali**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		
	42 Alliage de titane	Leghe al titanio	> 250	> 850		
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400		
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-		
	82 Matières duroplastiques	Materie termoindurenti	-	-		
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		
	92 Or rose	Oro rosso	-	-		
	93 Or blanc	Oro bianco	-	-		
	94 Argent	Argento	-	-		

 Optimale avec huile de coupe  
Ottimale con olio da taglio

 Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

 Optimale avec émulsion  
Ottimale con emulsione

 Fonctionnelle avec émulsion  
Funzionale con emulsione

## F286VS



VS VS VS VS VS VS

V <sub>c</sub> (m/min)		Avance f (mm/tour)			Avanzamento f (mm/giro)			
		Ø 0.8 - 1.2	Ø 1.21 - 3.0	Ø 3.01 - 6.0	Ø 6.01 - 8.5	Ø 8.51 - 11.0	Ø 11.02 - 14.0	
Standard	Standard							
	Revêtu Rivestito							
	70-90	0.015-0.025	0.015-0.025	0.035-0.045	0.11-0.13	0.15-0.17	0.18-0.22	11
	70-90	0.10-0.20	0.015-0.025	0.035-0.045	0.11-0.13	0.15-0.17	0.18-0.22	12
	70-90	0.10-0.20	0.015-0.025	0.035-0.045	0.11-0.13	0.15-0.17	0.18-0.22	13
	70-90	0.10-0.20	0.015-0.025	0.035-0.045	0.11-0.13	0.15-0.17	0.18-0.22	14
	60-80	0.10-0.20	0.015-0.025	0.035-0.045	0.07-0.09	0.11-0.13	0.15-0.17	15
								16
								17
								18
	40-60	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.15-0.16	21
	40-60	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.15-0.16	22
	40-60	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.15-0.16	23
	40-60	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.15-0.16	24
								31
								32
	40-80	0.003-0.006	0.008-0.012	0.01-0.018	0.025-0.03	0.055-0.06	0.075-0.085	41
								42
	30-50	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.11-0.13	51
								52
								53
	70-150	0.15-0.25	0.035-0.045	0.055-0.065	0.11-0.13	0.15-0.17	0.18-0.22	61
								62
	70-150	0.15-0.25	0.035-0.045	0.055-0.065	0.11-0.13	0.15-0.17	0.18-0.22	63
	100-160	0.025-0.035	0.045-0.055	0.075-0.085	0.15-0.17	0.22-0.26	0.30-0.34	71
	100-160	0.025-0.035	0.045-0.055	0.075-0.085	0.15-0.17	0.22-0.26	0.30-0.34	72
	60-130	0.02-0.03	0.035-0.045	0.055-0.065	0.11-0.13	0.16-0.20	0.22-0.26	73
								74
								81
								82
								83
								91
								92
	40-60	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.15-0.16	93
	40-60	0.008-0.012	0.015-0.02	0.035-0.04	0.075-0.085	0.095-0.105	0.15-0.16	94

**A** Optimale avec air  
Ottimale con aria













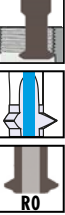



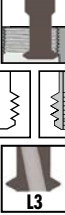

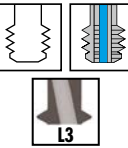
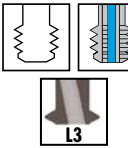
**A** Fonctionnelle avec air  
Funzionale con aria

Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.

**Répertoire - Tourbillonneurs en carbure monobloc type GW**  
**Rubrica - Frese a filettare vorticoso in metallo duro integrale tipo GW**




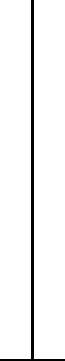















	GW											
Type Tipo	GW1116		GW2016		GW3016			GW3017			GW3019	
Revêtement Rivestimento	VS		VS		VS		VX	VS		VX	VS	
Longueur fileté Lunghezza filettatura												
Caractéristiques Caratteristiche												
<b>M</b> ISO DIN 14 ISO DIN 13	44	44	47	47	50	50	50	51	51	51	52	52
<b>MF</b> ISO DIN 13					53	53	53	54	54	54	55	55
<b>UNC</b> ASME B1.1					56	56	56	57	57	57	58	58
<b>UNF</b> ASME B1.1					59	59	59	60	60	60	61	61
<b>S</b> NIHS 06-10	45	45	48	48	62	62	62	63	63	63	64	64
<b>SL</b> SL 15-01	46	46	49	49	62	62						

**Répertoire - Tourbillonneurs en carbure monobloc type GWi - GWH, tourbillonneurs-perceurs type ZBGF**  
**Rubrica - Frese a filettare vorticoso in metallo duro integrale tipo GWi - GWH, frese per filettatura evoluto tipo ZBGF**

	GWi						GWH		ZBGF		
Type Tipo	GWi3066VS	GWi3066VX	GWi3067VS	GWi3067VX	GWi3069VS	GWi5066VS	GWi5067VS	GWH3015VH	GWH3017VH	ZBGF6065VS	ZBGF6067VS
Revêtement Rivestimento	VS	VX	VS	VX	VS	VS	VS	VH	VH	VS	VS
Longueur filetée Lunghezza filettatura											
Caractéristiques Caratteristiche											
<b>M</b> ISO DIN 14 ISO DIN 13	65	65	66	66	68	82	82	89	89	90	90
<b>MJ</b> ISO 5855			67	67							
<b>MF</b> ISO DIN 13	69	69	70	70	72						
<b>MJF</b> ISO 5855			71	71							
<b>UNC</b> ASME B1.1	73	73	74	74	76	83	83			91	91
<b>UNJC</b> ISO 3161			75	75							
<b>UNF</b> ASME B1.1	77	77	78	78	80	84	84			92	92
<b>UNJF</b> ISO 3161			79	79							
<b>S</b> NIHS 06-10	81	81	81	81		85					



**Répertoire - Mèches à centrer type C, mèches types FZ - F, en carbure monobloc**  
**Rubrica - Punta da centro tipo C, punte elicoidali FZ - F, in metallo duro integrale**

	C	FZ		F
Type Tipo	C315VS	FZ315VS	FZ315VS	F286VS
Revêtement Rivestimento	VS	VS	VS	VS
				
Profondeur de perçage Profondità del foro		8xd 	6xd 	5xd 
Caractéristiques Caratteristiche	  	 	  	   
C315VS	86			
FZ315VS		87	87	
F286VS				88

# **BESTSELLER**

**VOUS POUVEZ TROUVER NOTRE CATALOGUE  
"BESTSELLER" SUR NOTRE SITE WEB :  
[DCSWISS.COM/FR/DOWNLOAD](http://DCSWISS.COM/FR/DOWNLOAD)**



# **BESTSELLER**

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SUL NOSTRO SITE WEB: [DCSWISS.COM/IT/DOWNLOAD](http://DCSWISS.COM/IT/DOWNLOAD)**

## GW

GW1116

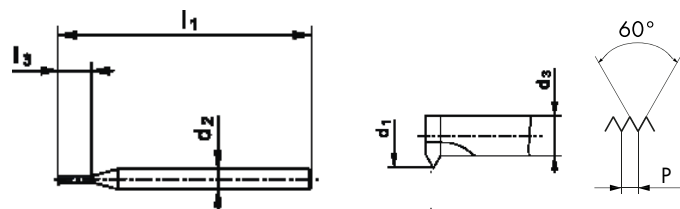
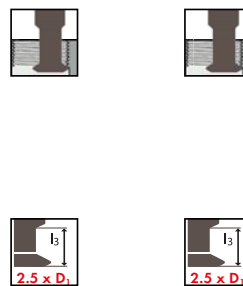


GW1116VS



GW1116

GW1116VS



$\emptyset D_1$ M	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h5 mm	$d_3$ mm			ID	ID
0.3	0.08	0.21	39	0.9	3	0.1	1	0.23	● 194227	● 194245
0.35	0.09	0.25	39	1	3	0.13	1	0.28	● 194228	● 194246
0.4	0.1	0.29	39	1.2	3	0.15	1	0.32 <sup>1</sup>	● 194229	● 194247
0.5	0.125	0.36	39	1.5	3	0.19	1	0.41 <sup>1</sup>	● 194230	● 194248
0.6	0.15	0.43	39	1.7	3	0.23	1	0.5 <sup>1</sup>	● 194231	● 194249
0.7	0.175	0.5	39	2	3	0.27	1	0.58 <sup>1</sup>	● 194232	● 194250
0.8	0.2	0.57	39	2.3	3	0.31	1	0.66 <sup>1</sup>	● 194233	● 194251
0.9	0.225	0.64	39	2.6	3	0.34	1	0.74 <sup>1</sup>	● 194234	● 194252
1	0.25	0.71	39	2.9	3	0.38	1	0.75	● 194235	● 194253
1.2	0.25	0.91	39	3.4	3	0.58	1	0.95	● 194236	● 194254
1.4	0.3	1.06	39	3.9	3	0.66	1	1.1	● 194237	● 194255

\* 4H5H → 4H6H = +0.02 mm

## GW

GW1116

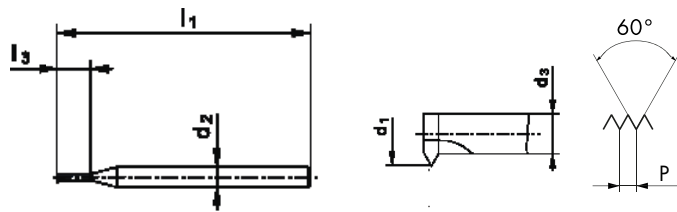


GW1116VS



GW1116

GW1116VS



$\frac{\emptyset D_1}{S}$	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h5 mm	$d_3$ mm			ID	ID
0.3	0.08	0.21	39	0.9	3	0.1	1	0.23	● 166930	● 166940
0.35	0.09	0.25	39	1	3	0.13	1	0.28	● 194226	● 194244
0.4	0.1	0.29	39	1.2	3	0.15	1	0.32 <sup>1</sup>	● 166931	● 166941
0.5	0.125	0.36	39	1.5	3	0.19	1	0.41 <sup>1</sup>	● 166932	● 166942
0.6	0.15	0.43	39	1.7	3	0.23	1	0.5 <sup>1</sup>	● 166933	● 166943
0.7	0.175	0.5	39	2	3	0.27	1	0.58 <sup>1</sup>	● 166934	● 166944
0.8	0.2	0.57	39	2.3	3	0.31	1	0.66 <sup>1</sup>	● 166935	● 166945
0.9	0.225	0.64	39	2.6	3	0.34	1	0.74 <sup>1</sup>	● 166936	● 166946
1	0.25	0.71	39	2.9	3	0.38	1	0.82 <sup>1</sup>	● 166937	● 166947
1.2	0.25	0.91	39	3.4	3	0.58	1	1.02 <sup>1</sup>	● 166938	● 166948
1.4	0.3	1.06	39	3.9	3	0.66	1	1.18 <sup>1</sup>	● 166939	● 166949

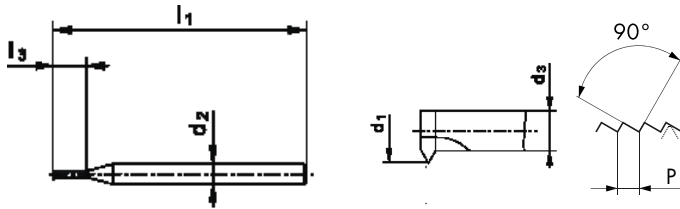
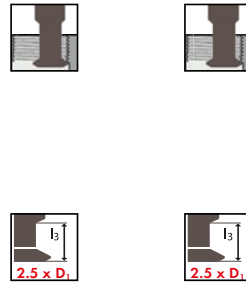
\* 4H5H → 4H6H = +0.02 mm



## GW

**GW1116**

**GW1116VS**

**GW1116**
**GW1116VS**


$\emptyset D_1$ SL	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h5 mm	$d_3$ mm			ID	ID
0.3	0.06	0.23	39	0.9	3	0.15	1	0.27	● 600017	● 600023
0.35	0.06	0.28	39	1	3	0.2	1	0.32	● 600237	● 600243
0.4	0.08	0.31	39	1.2	3	0.2	1	0.36	● 600018	● 600024
0.5	0.1	0.39	39	1.4	3	0.25	1	0.46	● 600019	● 600025
0.6	0.125	0.46	39	1.7	3	0.29	1	0.55	● 600020	● 600026
0.7	0.15	0.53	39	2	3	0.32	1	0.64	● 600021	● 600027
0.8	0.15	0.63	39	2.2	3	0.42	1	0.74	● 600238	● 600244
0.9	0.175	0.7	39	2.5	3	0.46	1	0.83	● 600239	● 600245
1	0.2	0.77	39	2.8	3	0.49	1	0.92	● 600240	● 600246
1.2	0.2	0.97	39	3.3	3	0.69	1	1.12	● 600241	● 600247
1.4	0.25	1.11	39	3.9	3	0.76	1	1.3	● 600242	● 600248

## GW

GW2016

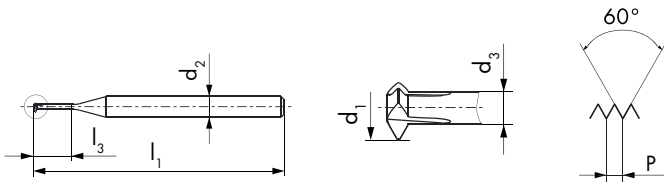
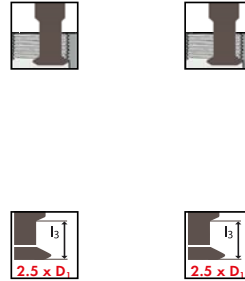


GW2016VS



GW2016

GW2016VS



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID
0.5	0.125	0.36	39	1.5	3	0.19	3	0.41 <sup>1</sup>	● 194262	● 194275
0.6	0.15	0.43	39	1.7	3	0.22	3	0.5 <sup>1</sup>	● 194263	● 194276
0.7	0.175	0.5	39	2	3	0.26	3	0.58 <sup>1</sup>	● 194264	● 194277
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 <sup>1</sup>	● 166974	● 166993
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 <sup>1</sup>	● 166975	● 166994
1	0.25	0.71	39	2.9	3	0.36	3	0.75	● 166976	● 166995
1.2	0.25	0.91	39	3.4	3	0.56	3	0.95	● 166977	● 166996
1.4	0.3	1.06	39	3.9	3	0.64	3	1.1	● 166978	● 166997
1.6	0.35	1.2	39	4.5	3	0.71	3	1.25	● 166979	● 166998
1.8	0.35	1.4	39	5	3	0.91	3	1.45	● 166980	● 166999
2	0.4	1.54	39	5.6	3	0.98	3	1.6	● 166981	● 167000
2.3	0.4	1.84	39	6.3	3	1.28	3	1.9	● 194265	● 167399
2.5	0.45	1.98	39	6.9	3	1.35	3	2.05	● 166982	● 167001
2.6	0.45	2.08	39	7.1	3	1.45	3	2.15	● 194266	● 194278
3	0.5	2.43	51	8.4	5	1.73	4	2.5	● 166983	● 167002
3.5	0.6	2.81	51	9.9	5	1.97	4	2.9	● 166984	● 167003
4	0.7	3.2	51	11.3	5	2.22	4	3.3	● 166985	● 167004
5	0.8	4.08	51	14	5	2.96	4	4.2	● 166986	● 167005
6	1	4.85	51	16.8	5	3.45	4	5	● 166987	● 167006

\* 4H5H → 4H6H = +0.02 mm

## GW

GW2016

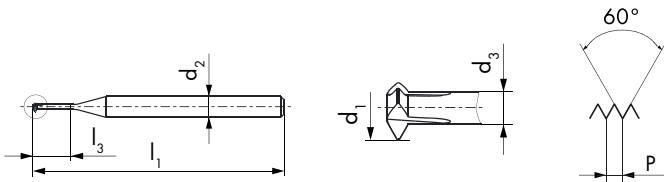


GW2016VS



GW2016

GW2016VS



$\frac{\theta}{S}$	$D_1$	P	$d_1$	$l_1$	$l_3$	$d_2$ h5	$d_3$			ID	ID
0.5	0.125	0.36	39	1.5	3	0.19	3	0.41 <sup>1</sup>		● 181410	● 181413
0.6	0.15	0.43	39	1.7	3	0.22	3	0.5 <sup>1</sup>		● 181374	● 180947
0.7	0.175	0.5	39	2	3	0.26	3	0.58 <sup>1</sup>		● 181375	● 181378
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 <sup>1</sup>		● 166969	● 166988
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 <sup>1</sup>		● 166970	● 166989
1	0.25	0.71	39	2.9	3	0.36	3	0.82 <sup>1</sup>		● 166971	● 166990
1.2	0.25	0.91	39	3.4	3	0.56	3	1.02 <sup>1</sup>		● 166972	● 166991
1.4	0.3	1.06	39	3.9	3	0.64	3	1.18 <sup>1</sup>		● 166973	● 166992

\* 4H5H → 4H6H = +0.02 mm

## GW

GW2016

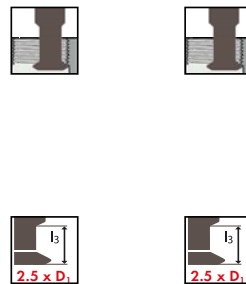
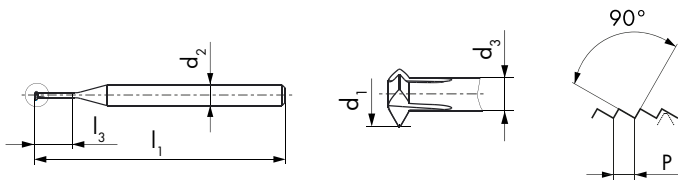


GW2016VS



GW2016

GW2016VS



$\emptyset D_1$ SL	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h5 mm	$d_3$ mm		
0.5	0.1	0.39	39	1.4	3	0.25	3	0.46
0.6	0.125	0.46	39	1.7	3	0.29	3	0.55
0.7	0.15	0.53	39	2	3	0.32	3	0.64
0.8	0.15	0.63	39	2.2	3	0.42	3	0.74
0.9	0.175	0.7	39	2.5	3	0.46	3	0.83
1	0.2	0.77	39	2.8	3	0.49	3	0.92
1.2	0.2	0.97	39	3.3	3	0.69	3	1.12
1.4	0.25	1.11	39	3.9	3	0.76	3	1.3

ID

ID

● 600249	● 600257
● 600250	● 600258
● 600251	● 600259
● 600252	● 600260
● 600253	● 600261
● 600254	● 600262
● 600255	● 600263
● 600256	● 600264

# GW

GW3016



GW3016VS



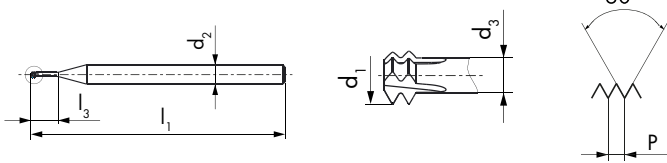
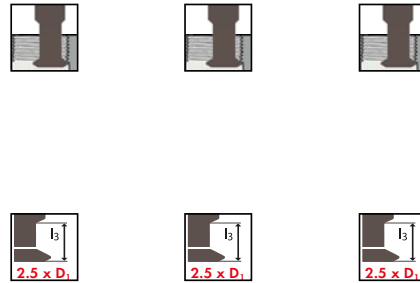
GW3016VX






GW3016


GW3016VS

GW3016VX



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 <sup>1</sup>	● 167021	● 167035	● 187261
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 <sup>1</sup>	● 167022	● 167036	● 187262
1	0.25	0.71	39	2.9	3	0.36	3	0.75	● 167023	● 167037	● 187263
1.2	0.25	0.91	39	3.4	3	0.56	3	0.95	● 167024	● 167038	● 187264
1.4	0.3	1.06	39	3.9	3	0.64	3	1.1	● 167025	● 167039	● 187265
1.6	0.35	1.2	39	4.5	3	0.71	3	1.25	● 167026	● 167040	● 187266
1.8	0.35	1.4	39	5	3	0.91	3	1.45	● 167027	● 167041	● 187267
2	0.4	1.54	39	5.6	3	0.98	3	1.6	● 167028	● 167042	● 187268
2.3	0.4	1.84	39	6.3	3	1.28	3	1.9	● 196140	● 167296	● 194310
2.5	0.45	1.98	39	6.9	3	1.35	3	2.05	● 167029	● 167043	● 187269
2.6	0.45	2.08	39	7.1	3	1.45	3	2.15	● 196141	● 194290	● 194311
3	0.5	2.43	51	8.4	5	1.73	4	2.5	● 167030	● 167044	● 187270
3.5	0.6	2.81	51	9.9	5	1.97	4	2.9	● 167031	● 167045	● 187271
4	0.7	3.2	51	11.3	5	2.22	4	3.3	● 167032	● 167046	● 187272
5	0.8	4.08	51	14	5	2.96	4	4.2	● 167033	● 167047	● 187273
6	1	4.85	51	16.8	5	3.45	4	5	● 167034	● 167048	● 187274
8	1.25	5.95	63	23	6 <sup>2</sup>	4.2	5	6.8	● 175229	● 175243	● 187275
10	1.5	7.95	67	28	8 <sup>2</sup>	5.85	5	8.5	● 175230	● 175244	● 187276
12	1.75	9.95	76	34	10 <sup>2</sup>	7.5	5	10.2	● 175231	● 175245	● 187277
14	2	10.95	95	44	12 <sup>2</sup>	8.15	5	12	● 196142	● 184748	● 187278
16	2	10.95	95	44	12 <sup>2</sup>	8.15	5	14	● 196143	● 186813	● 187279
18	2.5	13.95	105	55	14 <sup>2</sup>	10.45	6	15.5	● 196144	● 184503	● 187280
20	2.5	13.95	105	55	14 <sup>2</sup>	10.45	6	17.5	● 196145	● 186814	● 187281

\*  4H5H → 4H6H = +0.02 mm

\*  4H5H → 4H6H = +0.02 mm



## GW

GW3017



GW3017VS



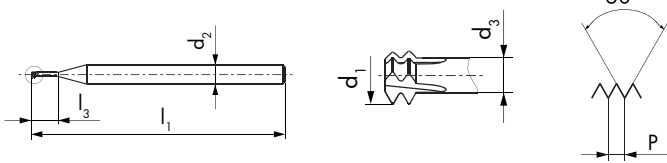
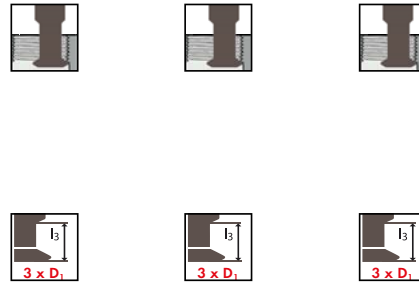
GW3017VX






GW3017


GW3017VS

GW3017VX



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
0.8	0.2	0.57	39	2.7	3	0.29	3	0.66 <sup>1</sup>	● 196172	● 186266	● 187389
0.9	0.225	0.64	39	3	3	0.33	3	0.74 <sup>1</sup>	● 196173	● 186267	● 187390
1	0.25	0.71	39	3.4	3	0.36	3	0.75	● 196189	● 186268	● 187391
1.2	0.25	0.91	39	4	3	0.56	3	0.95	● 196174	● 186269	● 187392
1.4	0.3	1.06	39	4.6	3	0.64	3	1.1	● 196175	● 186270	● 187393
1.6	0.35	1.2	39	5.3	3	0.71	3	1.25	● 196176	● 186271	● 187394
1.8	0.35	1.4	39	5.9	3	0.91	3	1.45	● 196177	● 186272	● 187395
2	0.4	1.54	39	6.6	3	0.98	3	1.6	● 183766	● 186273	● 187396
2.3	0.4	1.84	39	7.5	3	1.28	3	1.9	● 196190	● 194296	● 194317
2.5	0.45	1.98	39	8.1	3	1.35	3	2.05	● 196193	● 186274	● 187397
2.6	0.45	2.08	39	8.4	3	1.45	3	2.15	● 196194	● 194297	● 194318
3	0.5	2.43	51	9.9	5	1.73	4	2.5	● 196201	● 186275	● 187398
3.5	0.6	2.81	51	11.6	5	1.97	4	2.9	● 196199	● 186276	● 187399
4	0.7	3.2	51	13.3	5	2.22	4	3.3	● 196203	● 186277	● 187400
5	0.8	4.08	51	16.5	5	2.96	4	4.2	● 196205	● 186278	● 187401
6	1	4.85	51	19.8	5	3.45	4	5	● 196207	● 186279	● 187402
8	1.25	5.95	75	27	6 <sup>2</sup>	4.2	5	6.8	● 196209	● 186280	● 187403
10	1.5	7.95	83	33	8 <sup>2</sup>	5.85	5	8.5	● 196180	● 186281	● 187404
12	1.75	9.95	95	40	10 <sup>2</sup>	7.5	5	10.2	● 196182	● 186282	● 187405
14	2	10.95	120	52	12 <sup>2</sup>	8.15	5	12	● 196184	● 186283	● 187406
16	2	10.95	120	52	12 <sup>2</sup>	8.15	5	14	● 196186	● 186821	● 187407
18	2.5	13.95	135	65	14 <sup>2</sup>	10.45	6	15.5	● 196188	● 186284	● 187408
20	2.5	13.95	135	65	14 <sup>2</sup>	10.45	6	17.5	● 196196	● 186822	● 187409

\*  4H5H → 4H6H = +0.02 mm

\*  4H5H → 4H6H = +0.02 mm

## GW

GW3019

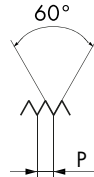
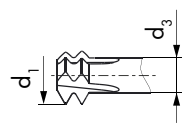
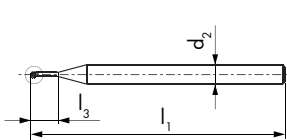


GW3019VS



GW3019

GW3019VS



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID
0.8	0.2	0.57	39	3.5	3	0.29	3	0.66 <sup>1</sup>	● 167063	● 167077
0.9	0.225	0.64	39	3.9	3	0.33	3	0.74 <sup>1</sup>	● 167064	● 167078
1	0.25	0.71	39	4.4	3	0.36	3	0.75	● 167065	● 167079
1.2	0.25	0.91	39	5.2	3	0.56	3	0.95	● 167066	● 167080
1.4	0.3	1.06	39	6	3	0.64	3	1.1	● 167067	● 167081
1.6	0.35	1.2	39	6.9	3	0.71	3	1.25	● 167068	● 167082
1.8	0.35	1.4	39	7.7	3	0.91	3	1.45	● 167069	● 167083
2	0.4	1.54	39	8.6	3	0.98	3	1.6	● 167070	● 167084
2.3	0.4	1.84	39	9.8	3	1.28	3	1.9	● 196268	● 194303
2.5	0.45	1.98	39	10.6	3	1.35	3	2.05	● 167071	● 167085
2.6	0.45	2.08	39	11	3	1.45	3	2.15	● 196269	● 194304
3	0.5	2.43	51	12.9	5	1.73	4	2.5	● 167072	● 167086
3.5	0.6	2.81	51	15.1	5	1.97	4	2.9	● 167073	● 167087
4	0.7	3.2	51	17.3	5	2.22	4	3.3	● 167074	● 167088
5	0.8	4.08	51	21.5	5	2.96	4	4.2	● 167075	● 167089
6	1	4.85	51	25.8	5	3.45	4	5	● 167076	● 167090
8	1.25	5.95	75	35	6 <sup>2</sup>	4.2	5	6.8	● 175258	● 175274
10	1.5	7.95	83	43	8 <sup>2</sup>	5.85	5	8.5	● 175259	● 175275
12	1.75	9.95	95	52	10 <sup>2</sup>	7.5	5	10.2	● 175260	● 175276
14	2	10.95	120	68	12 <sup>2</sup>	8.15	5	12	● 196243	● 184751
16	2	10.95	120	68	12 <sup>2</sup>	8.15	5	14	● 196244	● 186829
18	2.5	13.95	135	85	14 <sup>2</sup>	10.45	6	15.5	● 196245	● 184754
20	2.5	13.95	135	85	14 <sup>2</sup>	10.45	6	17.5	● 196246	● 186830

\* 4H5H → 4H6H = +0.02 mm

\* 4H5H → 4H6H = +0.02 mm

## GW

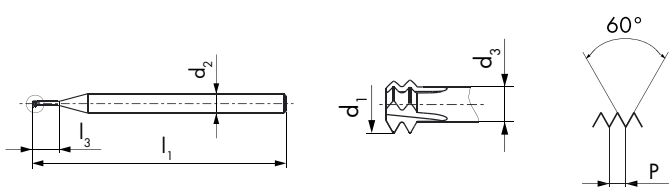
GW3016



GW3016VS



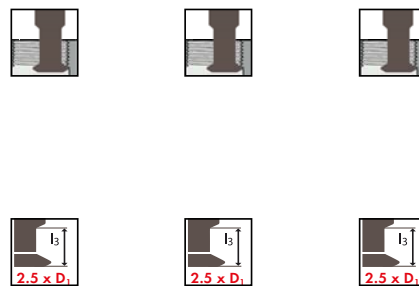
GW3016VX






GW3016

GW3016VS

GW3016VX



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
2	0.2	1.77	39	5.3	3	1.49	3	1.8	● 175225	● 171442	● 187282
2	0.25	1.71	39	5.4	3	1.36	3	1.75	● 196146	● 186209	● 187283
2.5	0.2	2.27	39	6.6	3	1.99	3	2.3	● 175226	● 175241	● 187284
2.5	0.25	2.21	39	6.6	3	1.86	3	2.25	● 175227	● 167299	● 187285
3	0.35	2.6	51	8.2	5	2.11	4	2.65	● 175228	● 175242	● 187286
4	0.5	3.43	51	10.9	5	2.73	4	3.5	● 196147	● 184572	● 187287
5	0.5	4.43	51	13.4	5	3.73	4	4.5	● 196148	● 186210	● 187288
6	0.75	4.95	51	16.4	5	3.9	4	5.25	● 196149	● 186211	● 187289
8	1	5.95	63	22	6 <sup>1</sup>	4.55	5	7	● 196150	● 186212	● 187290
10	1	7.95	67	27	8 <sup>1</sup>	6.55	5	9	● 196151	● 186213	● 187291
10	1.25	7.95	67	28	8 <sup>1</sup>	6.2	5	8.8	● 196152	● 186214	● 187292
12	1.5	9.95	76	33	10 <sup>1</sup>	7.85	5	10.5	● 196153	● 186215	● 187293
14	1.5	10.95	95	43	12 <sup>1</sup>	8.85	5	12.5	● 196154	● 186216	● 187294
16	1.5	10.95	95	43	12 <sup>1</sup>	8.85	5	14.5	● 196155	● 186815	● 187295
18	1.5	13.95	105	53	14 <sup>1</sup>	11.85	6	16.5	● 196156	● 186217	● 187296
20	1.5	13.95	105	53	14 <sup>1</sup>	11.85	6	18.5	● 196157	● 186816	● 187297

\*  4H5H → 4H6H = +0.02 mm

## GW

GW3017



R10

GW3017VS



R10

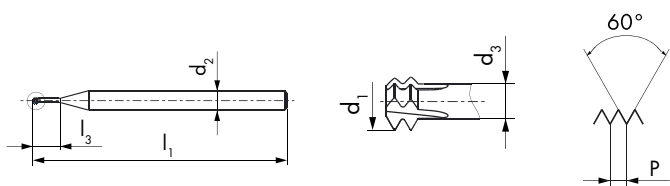
VS

GW3017VX



R10

VX



GW3017

GW3017VS

GW3017VX



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
2	0.2	1.77	39	6.3	3	1.49	3	1.8	● 196197	● 186325	● 187410
2	0.25	1.71	39	6.4	3	1.36	3	1.75	● 196198	● 186326	● 187411
2.5	0.2	2.27	39	7.8	3	1.99	3	2.3	● 196191	● 186327	● 187412
2.5	0.25	2.21	39	7.9	3	1.86	3	2.25	● 196192	● 186328	● 187413
3	0.35	2.6	51	9.7	5	2.11	4	2.65	● 196200	● 186329	● 187414
4	0.5	3.43	51	12.9	5	2.73	4	3.5	● 196202	● 186330	● 187415
5	0.5	4.43	51	15.9	5	3.73	4	4.5	● 196204	● 175199	● 187416
6	0.75	4.95	51	19.4	5	3.9	4	5.25	● 196206	● 186331	● 187417
8	1	5.95	75	26	6 <sup>1</sup>	4.55	5	7	● 196208	● 181233	● 187418
10	1	7.95	83	32	8 <sup>1</sup>	6.55	5	9	● 196178	● 186332	● 187419
10	1.25	7.95	83	33	8 <sup>1</sup>	6.2	5	8.8	● 196179	● 186333	● 187420
12	1.5	9.95	95	39	10 <sup>1</sup>	7.85	5	10.5	● 196181	● 186334	● 187421
14	1.5	10.95	120	51	12 <sup>1</sup>	8.85	5	12.5	● 196183	● 186335	● 187422
16	1.5	10.95	120	51	12 <sup>1</sup>	8.85	5	14.5	● 196185	● 186823	● 187423
18	1.5	13.95	135	63	14 <sup>1</sup>	11.85	6	16.5	● 196187	● 186336	● 187424
20	1.5	13.95	135	63	14 <sup>1</sup>	11.85	6	18.5	● 196195	● 186824	● 187425

\* 4H5H → 4H6H = +0.02 mm

## GW

GW3019

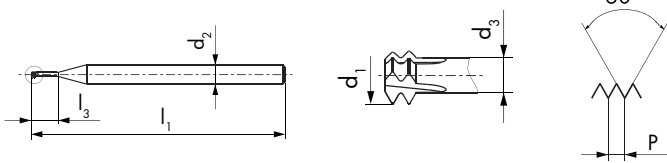


R10

GW3019VS



VS



GW3019

GW3019VS



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID
2	0.2	1.77	39	8.3	3	1.49	3	1.8	● 175254	● 175270
2	0.25	1.71	39	8.4	3	1.36	3	1.75	● 196242	● 186592
2.5	0.2	2.27	39	10.3	3	1.99	3	2.3	● 175255	● 175271
2.5	0.25	2.21	39	10.4	3	1.86	3	2.25	● 175256	● 175272
3	0.35	2.6	51	12.7	5	2.11	4	2.65	● 175257	● 175273
4	0.5	3.43	51	16.9	5	2.73	4	3.5	● 196247	● 186593
5	0.5	4.43	51	20.9	5	3.73	4	4.5	● 196248	● 171033
6	0.75	4.95	51	25.4	5	3.9	4	5.25	● 196249	● 186594
8	1	5.95	75	34	6 <sup>1</sup>	4.55	5	7	● 196250	● 186595
10	1	7.95	83	42	8 <sup>1</sup>	6.55	5	9	● 196251	● 186596
10	1.25	7.95	83	43	8 <sup>1</sup>	6.2	5	8.8	● 196252	● 186597
12	1.5	9.95	95	51	10 <sup>1</sup>	7.85	5	10.5	● 196253	● 186598
14	1.5	10.95	120	67	12 <sup>1</sup>	8.85	5	12.5	● 196254	● 186599
16	1.5	10.95	120	67	12 <sup>1</sup>	8.85	5	14.5	● 196255	● 186831
18	1.5	13.95	135	83	14 <sup>1</sup>	11.85	6	16.5	● 196256	● 186600
20	1.5	13.95	135	83	14	11.85	6	18.5	● 196257	● 186832

\* 4H5H → 4H6H = +0.02 mm



## GW

GW3016



GW3016VS



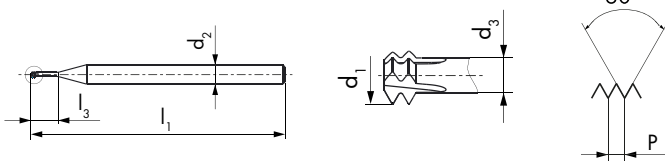
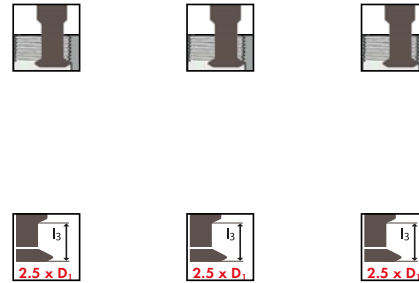
GW3016VX



GW3016

GW3016VS

GW3016VX



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
2	56	1.66	39	6.1	3	1.02	3	1.75	● 167472	● 167500	● 187298
3	48	1.91	39	7	3	1.17	3	2	● 196158	● 186236	● 187299
4	40	2.11	39	8	3	1.22	3	2.25	● 167473	● 167501	● 187300
5	40	2.44	51	9.1	5	1.55	4	2.55	● 196159	● 186237	● 187301
6	32	2.59	51	10.2	5	1.48	4	2.75	● 167474	● 167502	● 187302
8	32	3.25	51	11.9	5	2.14	4	3.4	● 167475	● 167503	● 187303
10	24	3.6	51	14	5	2.12	4	3.8	● 173983	● 173986	● 187304
12	24	4.27	51	15.7	5	2.79	4	4.4	● 196160	● 186238	● 187305
1/4	20	4.89	51	18.2	5	3.11	4	5.1	● 167476	● 167504	● 187306
5/16	18	5.95	63	23	6 <sup>1</sup>	3.97	5	6.5	● 175232	● 175246	● 187307
3/8	16	7.1	67	27	8 <sup>1</sup>	4.87	5	8	● 175233	● 173546	● 187308
7/16	14	7.95	67	32	8 <sup>1</sup>	5.41	5	9.3	● 196161	● 186239	● 187309
1/2	13	9.95	76	36	10 <sup>1</sup>	7.21	5	10.8	● 175234	● 175247	● 187310

\* 4H5H → 4H6H = +0.02 mm

## GW

GW3017



R10

GW3017VS



R10

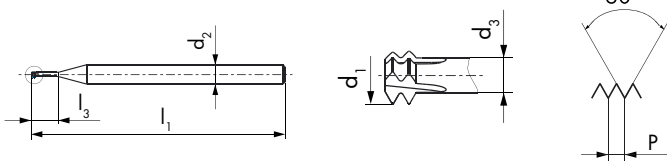
VS

GW3017VX



R10

VX



GW3017

GW3017VS

GW3017VX



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
2	56	1.66	39	7.2	3	1.02	3	1.75	● 196219	● 186365	● 187426
3	48	1.91	39	8.3	3	1.17	3	2	● 196221	● 186366	● 187427
4	40	2.11	39	9.4	3	1.22	3	2.25	● 196222	● 186367	● 187428
5	40	2.44	51	10.7	5	1.55	4	2.55	● 196224	● 186368	● 187429
6	32	2.59	51	12	5	1.48	4	2.75	● 196225	● 186369	● 187430
8	32	3.25	51	14	5	2.14	4	3.4	● 196227	● 186370	● 187431
10	24	3.6	51	16.4	5	2.12	4	3.8	● 196217	● 186371	● 187432
12	24	4.27	51	18.4	5	2.79	4	4.4	● 196218	● 186372	● 187433
1/4	20	4.89	51	21.4	5	3.11	4	5.1	● 196216	● 186373	● 187434
5/16	18	5.95	75	27	6 <sup>1</sup>	3.97	5	6.5	● 196223	● 186374	● 187435
3/8	16	7.1	83	32	8 <sup>1</sup>	4.87	5	8	● 196220	● 186375	● 187436
7/16	14	7.95	83	37	8 <sup>1</sup>	5.41	5	9.3	● 196226	● 186376	● 187437
1/2	13	9.95	95	42	10 <sup>1</sup>	7.21	5	10.8	● 196215	● 186377	● 187438

\* 4H5H → 4H6H = +0.02 mm

## GW

GW3019

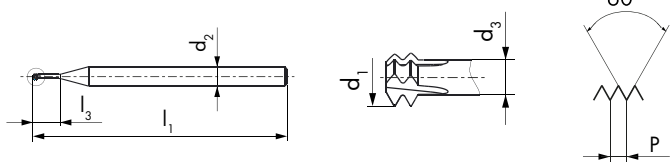


GW3019VS



GW3019

GW3019VS



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID
2	56	1.66	39	9.4	3	1.02	3	1.75	● 167479	● 167507
3	48	1.91	39	10.8	3	1.17	3	2	● 196258	● 186601
4	40	2.11	39	12.2	3	1.22	3	2.25	● 167480	● 167508
5	40	2.44	51	13.9	5	1.55	4	2.55	● 196259	● 186602
6	32	2.59	51	15.5	5	1.48	4	2.75	● 167481	● 167509
8	32	3.25	51	18.1	5	2.14	4	3.4	● 167482	● 167510
10	24	3.6	51	21.3	5	2.12	4	3.8	● 173982	● 173979
12	24	4.27	51	23.9	5	2.79	4	4.4	● 196260	● 186603
1/4	20	4.89	51	27.7	5	3.11	4	5.1	● 167483	● 167511
5/16	18	5.95	75	35	6 <sup>1</sup>	3.97	5	6.5	● 175261	● 175277
3/8	16	7.1	83	41	8 <sup>1</sup>	4.87	5	8	● 175262	● 175278
7/16	14	7.95	83	48	8 <sup>1</sup>	5.41	5	9.3	● 196261	● 186604
1/2	13	9.95	95	55	10 <sup>1</sup>	7.21	5	10.8	● 175263	● 175279

\* 4H5H → 4H6H = +0.02 mm

## GW

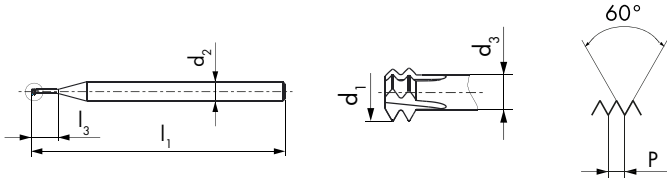
GW3016



GW3016VS



GW3016VX



GW3016

GW3016VS

GW3016VX



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
0	80	1.15	39	4.3	3	0.71	3	1.2	● 175235	● 175248	● 187311
1	72	1.44	39	5.1	3	0.95	3	1.5	● 175236	● 175249	● 187312
2	64	1.73	39	6	3	1.17	3	1.8	● 196162	● 186248	● 187313
4	48	2.23	39	7.9	3	1.49	3	2.35	● 175237	● 175250	● 187314
5	44	2.51	51	9	5	1.7	4	2.6	● 196163	● 186249	● 187315
6	40	2.77	51	10	5	1.88	4	2.9	● 196164	● 186250	● 187316
8	36	3.35	51	11.7	5	2.36	4	3.5	● 175238	● 175251	● 187317
10	32	3.91	51	13.5	5	2.8	4	4.05	● 167477	● 167505	● 187318
12	28	4.44	51	15.4	5	3.17	4	4.6	● 196165	● 186251	● 187319
1/4	28	4.95	51	17.6	5	3.68	4	5.5	● 167478	● 167506	● 187320
5/16	24	5.95	63	22	6 <sup>1</sup>	4.47	5	6.9	● 175239	● 175252	● 187321
3/8	24	7.1	67	26	8 <sup>1</sup>	5.62	5	8.5	● 175240	● 175253	● 187322
7/16	20	7.95	67	31	8 <sup>1</sup>	6.17	5	9.8	● 196166	● 186252	● 187323
1/2	20	9.95	76	35	10 <sup>1</sup>	8.17	5	11.4	● 196167	● 186253	● 187324

\* 4H5H → 4H6H = +0.02 mm

## GW

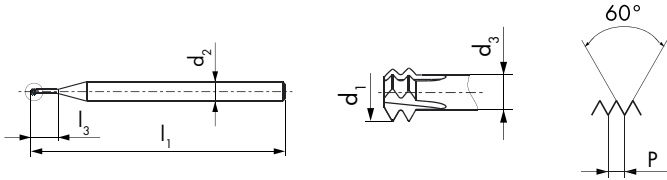
GW3017



GW3017VS



GW3017VX



GW3017

GW3017VS

GW3017VX



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID	ID
0	80	1.15	39	5	3	0.71	3	1.2	● 196228	● 186404	● 187439
1	72	1.44	39	6.1	3	0.95	3	1.5	● 196233	● 186405	● 187440
2	64	1.73	39	7.1	3	1.17	3	1.8	● 196234	● 186406	● 187441
4	48	2.23	39	9.3	3	1.49	3	2.35	● 196236	● 186407	● 187442
5	44	2.51	51	10.6	5	1.7	4	2.6	● 196238	● 186408	● 187443
6	40	2.77	51	11.7	5	1.88	4	2.9	● 196239	● 186409	● 187444
8	36	3.35	51	13.8	5	2.36	4	3.5	● 196241	● 186410	● 187445
10	32	3.91	51	15.9	5	2.8	4	4.05	● 196231	● 184633	● 187446
12	28	4.44	51	18.1	5	3.17	4	4.6	● 196232	● 186411	● 187447
1/4	28	4.95	51	20.7	5	3.68	4	5.5	● 196230	● 186412	● 187448
5/16	24	5.95	75	26	6 <sup>1</sup>	4.47	5	6.9	● 196237	● 186413	● 187449
3/8	24	7.1	83	31	8 <sup>1</sup>	5.62	5	8.5	● 196235	● 186414	● 187450
7/16	20	7.95	83	36	8 <sup>1</sup>	6.17	5	9.8	● 196240	● 186415	● 187451
1/2	20	9.95	95	41	10 <sup>1</sup>	8.17	5	11.4	● 196229	● 186416	● 187452

\* 4H5H → 4H6H = +0.02 mm



## GW

GW3019

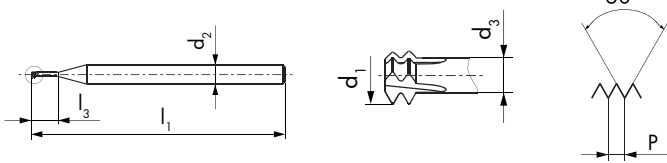


GW3019VS



GW3019

GW3019VS



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID
0	80	1.15	39	6.6	3	0.71	3	1.2	● 175264	● 175280
1	72	1.44	39	7.9	3	0.95	3	1.5	● 175265	● 175281
2	64	1.73	39	9.3	3	1.17	3	1.8	● 196262	● 186605
4	48	2.23	39	12.1	3	1.49	3	2.35	● 175266	● 172376
5	44	2.51	51	13.8	5	1.7	4	2.6	● 196263	● 169815
6	40	2.77	51	15.2	5	1.88	4	2.9	● 196264	● 186606
8	36	3.35	51	18	5	2.36	4	3.5	● 175267	● 175282
10	32	3.91	51	20.8	5	2.8	4	4.05	● 167484	● 167512
12	28	4.44	51	23.6	5	3.17	4	4.6	● 196265	● 186607
1/4	28	4.95	51	27.1	5	3.68	4	5.5	● 167485	● 167513
5/16	24	5.95	75	34	6 <sup>1</sup>	4.47	5	6.9	● 175268	● 175283
3/8	24	7.1	83	40	8 <sup>1</sup>	5.62	5	8.5	● 175269	● 175284
7/16	20	7.95	83	47	8 <sup>1</sup>	6.17	5	9.8	● 196266	● 186608
1/2	20	9.95	95	54	10 <sup>1</sup>	8.17	5	11.4	● 196267	● 186609

\* 4H5H → 4H6H = +0.02 mm

GW

GW3016



GW3016VS



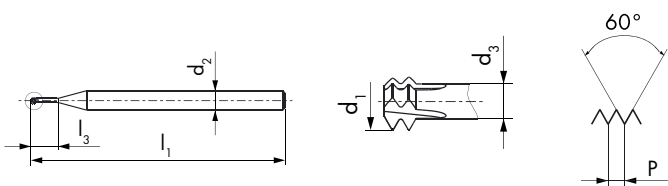
GW3016VX



GW3016

GW3016VS

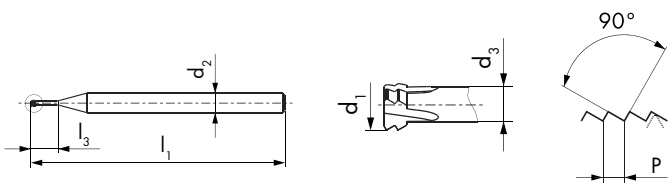
GW3016VX



Ø D <sub>1</sub> S	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm		
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 <sup>1</sup>
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 <sup>1</sup>
1	0.25	0.71	39	2.9	3	0.36	3	0.82 <sup>1</sup>
1.2	0.25	0.91	39	3.4	3	0.56	3	1.02 <sup>1</sup>
1.4	0.3	1.06	39	3.9	3	0.64	3	1.18 <sup>1</sup>

ID	ID	ID
● 196168	● 194287	● 194305
● 196169	● 182875	● 194306
● 180683	● 168667	● 194307
● 196170	● 194288	● 194308
● 196171	● 194289	● 194309

\* 4H5H → 4H6H = +0.02 mm



Ø D <sub>1</sub> SL	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm		
0.8	0.15	0.63	39	2.3	3	0.42	3	0.74
0.9	0.175	0.7	39	2.6	3	0.46	3	0.83
1	0.2	0.77	39	2.9	3	0.49	3	0.92
1.2	0.2	0.97	39	3.4	3	0.69	3	1.11
1.4	0.25	1.11	39	3.9	3	0.76	3	1.3

ID	ID
● 600028	● 600034
● 600029	● 600035
● 600030	● 600036
● 600031	● 600037
● 600032	● 600038

## GW

GW3017



GW3017VS



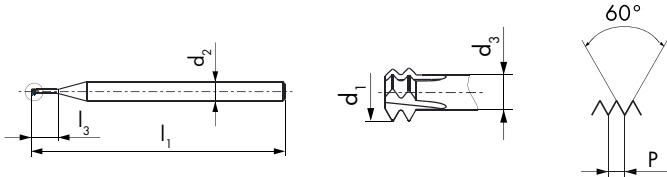
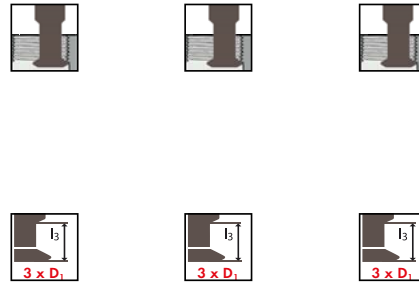
GW3017VX



GW3017

GW3017VS

GW3017VX



$\frac{\emptyset D_1}{S}$	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h5 mm	$d_3$ mm			ID	ID	ID
0.8	0.2	0.57	39	2.7	3	0.29	3	0.66 <sup>1</sup>	● 196210	● 194291	● 194312
0.9	0.225	0.64	39	3	3	0.33	3	0.74 <sup>1</sup>	● 196211	● 194292	● 194313
1	0.25	0.71	39	3.4	3	0.36	3	0.82 <sup>1</sup>	● 196214	● 194293	● 194314
1.2	0.25	0.91	39	4	3	0.56	3	1.02 <sup>1</sup>	● 196212	● 194294	● 194315
1.4	0.3	1.06	39	4.6	3	0.64	3	1.18 <sup>1</sup>	● 196213	● 194295	● 194316

\* 4H5H → 4H6H = +0.02 mm

## GW

GW3019

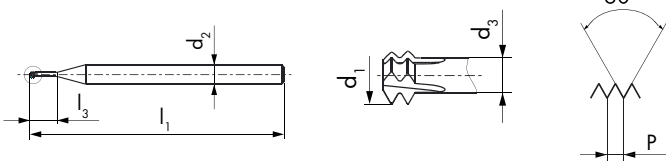


GW3019VS



GW3019

GW3019VS



Ø D <sub>1</sub> S	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm			ID	ID
0.8	0.2	0.57	39	3.5	3	0.29	3	0.66 <sup>1</sup>	● 196270	● 194298
0.9	0.225	0.64	39	3.9	3	0.33	3	0.74 <sup>1</sup>	● 196271	● 194299
1	0.25	0.71	39	4.4	3	0.36	3	0.82 <sup>1</sup>	● 196274	● 194300
1.2	0.25	0.91	39	5.2	3	0.56	3	1.02 <sup>1</sup>	● 196272	● 194301
1.4	0.3	1.06	39	6	3	0.64	3	1.18 <sup>1</sup>	● 196273	● 194302

\* 4H5H → 4H6H = +0.02 mm

## GWi

GWi3066VS

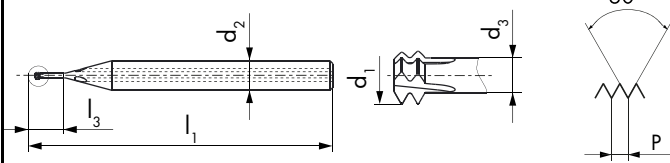


VS

GWi3066VX



VX



GWi3066VS

GWi3066VX



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm			ID	ID
0.8	0.2	0.57	40	2.3	3	0.29	3	0.66	● 186029	● 187325
0.9	0.225	0.64	40	2.6	3	0.33	3	0.74	● 186030	● 187326
1	0.25	0.71	40	2.9	3	0.36	3	0.75	● 186031	● 187327
1.2	0.25	0.91	40	3.4	3	0.56	3	0.95	● 186032	● 187328
1.4	0.3	1.06	40	3.9	4	0.64	3	1.1	● 186033	● 187329
1.6	0.35	1.2	40	4.5	4	0.71	3	1.25	● 186034	● 187330
1.8	0.35	1.4	40	5	4	0.91	3	1.45	● 186035	● 187331
2	0.4	1.54	40	5.6	4	0.98	3	1.6	● 186036	● 187332
2.3	0.4	1.84	40	6.3	4	1.28	3	1.9	● 194324	● 194334
2.5	0.45	1.98	40	6.9	4	1.35	3	2.05	● 186037	● 187333
2.6	0.45	2.08	40	7.1	4	1.45	3	2.15	● 194325	● 194335
3	0.5	2.43	51	8.4	5	1.73	4	2.5	● 186038	● 187334
3.5	0.6	2.81	51	9.9	6	1.97	4	2.9	● 186039	● 187335
4	0.7	3.2	51	11.3	6	2.22	4	3.3	● 186040	● 187336
5	0.8	4.08	51	14	8	2.96	4	4.2	● 186041	● 187337
6	1	4.85	51	16.8	8	3.45	4	5	● 186042	● 187338
8	1.25	5.95	75	23	6	4.2	5	6.8	● 186043	● 187339
10	1.5	7.95	83	28	8	5.85	5	8.5	● 186044	● 187340
12	1.75	9.95	95	34	10	7.5	5	10.2	● 186045	● 187341
14	2	10.95	120	44	12	8.15	5	12	● 186046	● 187342
16	2	10.95	120	44	12	8.15	5	14	● 186817	● 187343
18	2.5	13.95	135	55	14	10.45	6	15.5	● 186047	● 187344
20	2.5	13.95	135	55	14	10.45	6	17.5	● 186818	● 187345



# GWi

GWi3067VS



VS

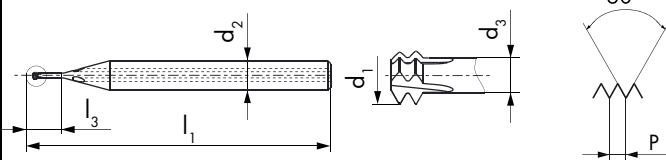
GWi3067VX





VX

GWi3067VS

GWi3067VX



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
1.4	0.3	1.06	40	4.6	4	0.64	3	1.1
1.6	0.35	1.2	40	5.3	4	0.71	3	1.25
1.8	0.35	1.4	40	5.9	4	0.91	3	1.45
2	0.4	1.54	40	6.6	4	0.98	3	1.6
2.3	0.4	1.84	40	7.5	4	1.28	3	1.9
2.5	0.45	1.98	40	8.1	4	1.35	3	2.05
2.6	0.45	2.08	40	8.4	4	1.45	3	2.15
3	0.5	2.43	51	9.9	5	1.73	4	2.5
3.5	0.6	2.81	51	11.6	6	1.97	4	2.9
4	0.7	3.2	51	13.3	6	2.22	4	3.3
5	0.8	4.08	51	16.5	8	2.96	4	4.2
6	1	4.85	51	19.8	8	3.45	4	5
8	1.25	5.95	75	27	6	4.2	5	6.8
10	1.5	7.95	83	33	8	5.85	5	8.5
12	1.75	9.95	95	40	10	7.5	5	10.2
14	2	10.95	120	52	12	8.15	5	12
16	2	10.95	120	52	12	8.15	5	14
18	2.5	13.95	135	65	14	10.45	6	15.5
20	2.5	13.95	135	65	14	10.45	6	17.5

ID

ID

● 186443	● 187453
● 186444	● 187454
● 186445	● 187455
● 186446	● 187456
● 194327	● 194337
● 186447	● 187457
● 194328	● 194338
● 186448	● 187458
● 186449	● 187459
● 186450	● 187460
● 186451	● 187461
● 186452	● 187462
● 186453	● 187463
● 186454	● 187464
● 186455	● 187465
● 186456	● 187466
● 186825	● 187467
● 186457	● 187468
● 186826	● 187469

# GWi

GWi3067VS

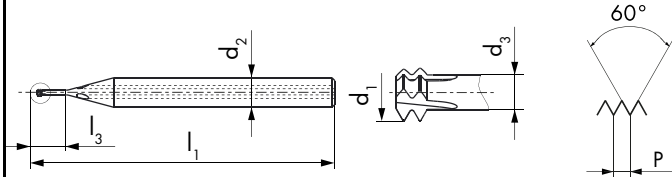


VS

GWi3067VX



VX



GWi3067VS

GWi3067VX



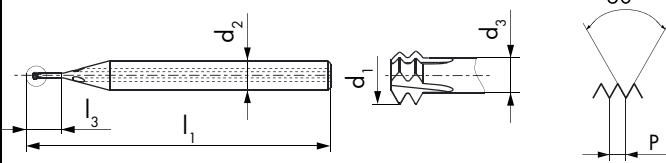
$\emptyset D_1$ MJ	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm			ID	ID
3	0.5	2.17	51	9.9	5	1.47	4	2.55	● 188820	● 188843
4	0.7	2.84	51	13.3	6	1.86	4	3.4	● 188821	● 188844
5	0.8	3.67	51	16.5	8	2.55	4	4.3	● 188822	● 188845
6	1	4.34	51	19.8	8	2.94	4	5.1	● 188823	● 188846
8	1.25	5.95	75	27	6	4.2	5	6.9	● 188824	● 188847
10	1.5	7.95	83	33	8	5.85	5	8.6	● 188825	● 188848
12	1.75	9.95	95	40	10	7.5	5	10.4	● 188826	● 188849



# GWi

GWi3069VS



GWi3069VS



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm			ID
3	0.5	2.43	51	12.9	5	1.73	4	2.5	● 186610
3.5	0.6	2.81	51	15.1	6	1.97	4	2.9	● 186611
4	0.7	3.2	51	17.3	6	2.22	4	3.3	● 186612
5	0.8	4.08	51	21.5	8	2.96	4	4.2	● 186613
6	1	4.85	51	25.8	8	3.45	4	5	● 186614
8	1.25	5.95	75	35	6	4.2	5	6.8	● 186615
10	1.5	7.95	83	43	8	5.85	5	8.5	● 186616
12	1.75	9.95	95	52	10	7.5	5	10.2	● 186617
14	2	10.95	120	68	12	8.15	5	12	● 186618
16	2	10.95	120	68	12	8.15	5	14	● 186833
18	2.5	13.95	135	85	14	10.45	6	15.5	● 186619
20	2.5	13.95	135	85	14	10.45	6	17.5	● 186834

## GWi

GWi3066VS



VS

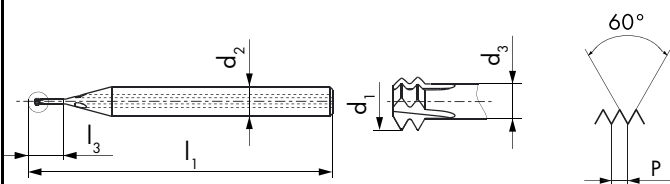
GWi3066VX



VX

GWi3066VS

GWi3066VX



$\emptyset D_1$ MF	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm			ID	ID
2	0.2	1.77	40	5.3	4	1.49	3	1.8	● 186086	● 187346
2	0.25	1.71	40	5.4	4	1.36	3	1.75	● 186087	● 187347
2.5	0.2	2.27	40	6.6	4	1.99	3	2.3	● 186088	● 187348
2.5	0.25	2.21	40	6.6	4	1.86	3	2.25	● 186089	● 187349
3	0.35	2.6	51	8.2	5	2.11	4	2.65	● 186090	● 187350
4	0.5	3.43	51	10.9	6	2.73	4	3.5	● 186091	● 187351
5	0.5	4.43	51	13.4	8	3.73	4	4.5	● 186092	● 187352
6	0.75	4.95	51	16.4	8	3.9	4	5.25	● 186093	● 187353
8	1	5.95	75	22	6	4.55	5	7	● 186094	● 187354
10	1	7.95	83	27	8	6.55	5	9	● 186095	● 187355
10	1.25	7.95	83	28	8	6.2	5	8.8	● 186096	● 187356
12	1.5	9.95	95	33	10	7.85	5	10.5	● 186097	● 187357
14	1.5	10.95	120	43	12	8.85	5	12.5	● 186098	● 187358
16	1.5	10.95	120	43	12	8.85	5	14.5	● 186819	● 187359
18	1.5	13.95	135	53	14	11.85	6	16.5	● 186099	● 187360
20	1.5	13.95	135	53	14	11.85	6	18.5	● 186820	● 187361

## GWi

GWi3067VS

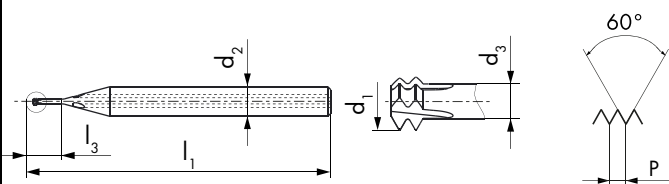


GWi3067VX



GWi3067VS

GWi3067VX



$\emptyset D_1$ MF	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm			ID	ID
2	0.2	1.77	40	6.3	4	1.49	3	1.8	● 186488	● 187470
2	0.25	1.71	40	6.4	4	1.36	3	1.75	● 186489	● 187471
2.5	0.2	2.27	40	7.8	4	1.99	3	2.3	● 186490	● 187472
2.5	0.25	2.21	40	7.9	4	1.86	3	2.25	● 186491	● 187473
3	0.35	2.6	51	9.7	5	2.11	4	2.65	● 186492	● 187474
4	0.5	3.43	51	12.9	6	2.73	4	3.5	● 186493	● 187475
5	0.5	4.43	51	15.9	8	3.73	4	4.5	● 186494	● 187476
6	0.75	4.95	51	19.4	8	3.9	4	5.25	● 186495	● 187477
8	1	5.95	75	26	6	4.55	5	7	● 186496	● 187478
10	1	7.95	83	32	8	6.55	5	9	● 186497	● 187479
10	1.25	7.95	83	33	8	6.2	5	8.8	● 186498	● 187480
12	1.5	9.95	95	39	10	7.85	5	10.5	● 186499	● 187481
14	1.5	10.95	120	51	12	8.85	5	12.5	● 186500	● 187482
16	1.5	10.95	120	51	12	8.85	5	14.5	● 186827	● 187483
18	1.5	13.95	135	63	14	11.85	6	16.5	● 186501	● 187484
20	1.5	13.95	135	63	14	11.85	6	18.5	● 186828	● 187485

## GWi

GWi3067VS



VS

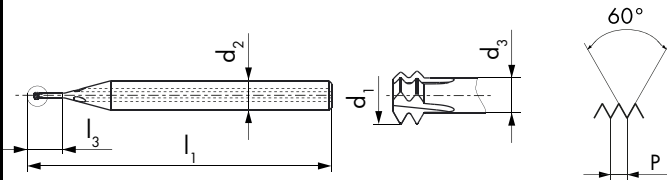
GWi3067VX



VX

GWi3067VS

GWi3067VX



$\emptyset D_1$ MJF	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm		
6	0.75	4.76	51	19.4	8	3.71	4	5.35
8	1	5.95	75	26	6	4.55	5	7.1
10	1.25	7.95	83	33	8	6.2	5	8.9
12	1.5	9.95	95	39	10	7.85	5	10.6

ID

ID

● 188827

● 188850

● 188828

● 188851

● 188829

● 188852

● 188830

● 188853

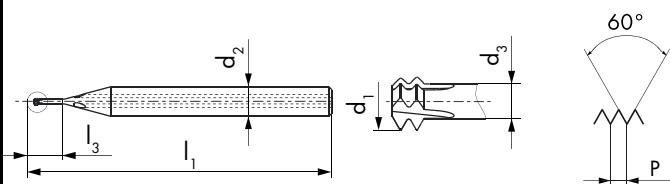




## GWi

GWi3069VS



GWi3069VS



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm			ID
3	0.35	2.6	51	12.7	5	2.11	4	2.65	● 186620
4	0.5	3.43	51	16.9	6	2.73	4	3.5	● 186621
5	0.5	4.43	51	20.9	8	3.73	4	4.5	● 186622
6	0.75	4.95	51	25.4	8	3.9	4	5.25	● 186623
8	1	5.95	75	34	6	4.55	5	7	● 186624
10	1	7.95	83	42	8	6.55	5	9	● 186625
10	1.25	7.95	83	43	8	6.2	5	8.8	● 186626
12	1.5	9.95	95	51	10	7.85	5	10.5	● 186627
14	1.5	10.95	120	67	12	8.85	5	12.5	● 186628
16	1.5	10.95	120	67	12	8.85	5	14.5	● 186835
18	1.5	13.95	135	83	14	11.85	6	16.5	● 186629
20	1.5	13.95	135	83	14	11.85	6	18.5	● 186836

## GWi

GWi3066VS

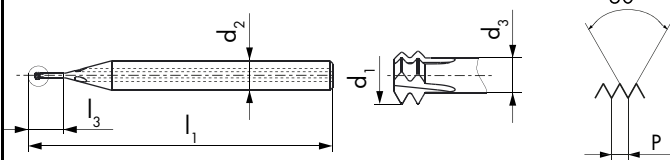


VS

GWi3066VX



VX



GWi3066VS

GWi3066VX



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
2	56	1.66	40	6.1	4	1.02	3	1.75
3	48	1.91	40	7	4	1.17	3	2
4	40	2.11	51	8	5	1.22	3	2.25
5	40	2.44	51	9.1	5	1.55	4	2.55
6	32	2.59	51	10.2	6	1.48	4	2.75
8	32	3.25	51	11.9	6	2.14	4	3.4
10	24	3.6	51	14	8	2.12	4	3.8
12	24	4.27	51	15.7	8	2.79	4	4.4
1/4	20	4.89	51	18.2	8	3.11	4	5.1
5/16	18	5.95	75	23	6	3.97	5	6.5
3/8	16	7.1	83	27	8	4.87	5	8
7/16	14	7.95	83	32	8	5.41	5	9.3
1/2	13	9.95	95	36	10	7.21	5	10.8

ID

ID

● 186128	● 187362
● 186129	● 187363
● 186130	● 187364
● 186131	● 187365
● 186132	● 187366
● 186133	● 187367
● 186134	● 187368
● 186135	● 187369
● 186136	● 187370
● 186137	● 187371
● 186138	● 187372
● 186139	● 187373
● 186140	● 187374

## GWi

GWi3067VS



VS

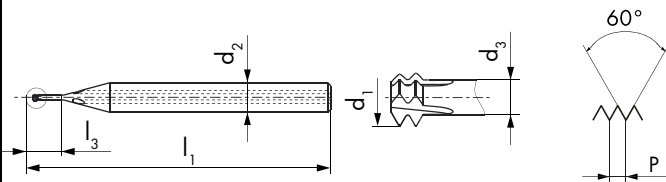
GWi3067VX



VX

GWi3067VS

GWi3067VX



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
4	40	2.11	51	9.4	5	1.22	3	2.25
5	40	2.44	51	10.7	5	1.55	4	2.55
6	32	2.59	51	12	6	1.48	4	2.75
8	32	3.25	51	14	6	2.14	4	3.4
10	24	3.6	51	16.4	8	2.12	4	3.8
12	24	4.27	51	18.4	8	2.79	4	4.4
1/4	20	4.89	51	21.4	8	3.11	4	5.1
5/16	18	5.95	75	27	6	3.97	5	6.5
3/8	16	7.1	83	32	8	4.87	5	8
7/16	14	7.95	83	37	8	5.41	5	9.3
1/2	13	9.95	95	42	10	7.21	5	10.8

ID

ID

● 186526	● 187486
● 186527	● 187487
● 186528	● 187488
● 186529	● 187489
● 186530	● 187490
● 186531	● 187491
● 186532	● 187492
● 186533	● 187493
● 186534	● 187494
● 186535	● 187495
● 186536	● 187496

## GWi

GWi3067VS

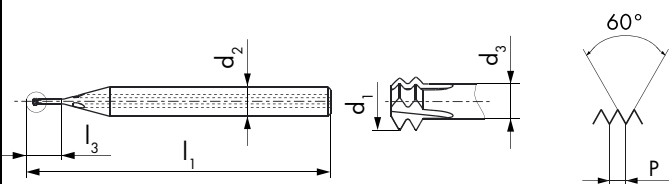


GWi3067VX



GWi3067VS

GWi3067VX



Ø" D <sub>1</sub> UNJC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
6	32	2.59	51	12	6	1.48	4	2.8
10	24	3.6	51	16.4	8	2.12	4	3.9
1/4	20	4.89	51	21.4	8	3.11	4	5.2
5/16	18	5.95	75	27	6	3.97	5	6.7
3/8	16	7.1	83	32	8	4.87	5	8.1
1/2	13	9.95	95	42	10	7.21	5	10.9

ID

ID

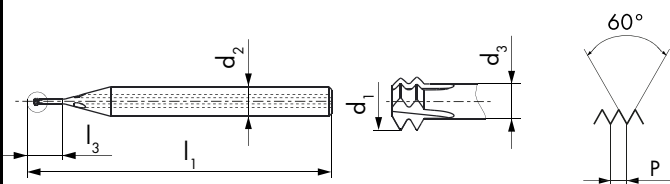
● 188831	● 188854
● 188832	● 188855
● 188833	● 188856
● 188834	● 188857
● 188835	● 188858
● 188836	● 188859

## GWi

GWi3069VS



GWi3069VS



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm			ID
6	32	2.59	51	15.5	6	1.48	4	2.75	● 186630
8	32	3.25	51	18.1	6	2.14	4	3.4	● 186631
10	24	3.6	51	21.3	8	2.12	4	3.8	● 186632
12	24	4.27	51	23.9	8	2.79	4	4.4	● 186633
1/4	20	4.89	51	27.7	8	3.11	4	5.1	● 186634
5/16	18	5.95	75	35	6	3.97	5	6.5	● 186635
3/8	16	7.1	83	41	8	4.87	5	8	● 186636
7/16	14	7.95	83	48	8	5.41	5	9.3	● 186637
1/2	13	9.95	95	55	10	7.21	5	10.8	● 186638

## GWi

GWi3066VS

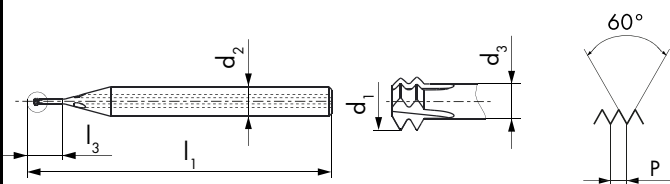


GWi3066VX



GWi3066VS

GWi3066VX



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm			ID	ID
0	80	1.15	40	4.3	4	0.71	3	1.2	● 186167	● 187375
1	72	1.44	40	5.1	4	0.95	3	1.5	● 186168	● 187376
2	64	1.73	40	6	4	1.17	3	1.8	● 186169	● 187377
4	48	2.23	51	7.9	5	1.49	3	2.35	● 186170	● 187378
5	44	2.51	51	9	5	1.7	4	2.6	● 186171	● 187379
6	40	2.77	51	10	6	1.88	4	2.9	● 186172	● 187380
8	36	3.35	51	11.7	6	2.36	4	3.5	● 186173	● 187381
10	32	3.91	51	13.5	8	2.8	4	4.05	● 186174	● 187382
12	28	4.44	51	15.4	8	3.17	4	4.6	● 186175	● 187383
1/4	28	4.95	51	17.6	8	3.68	4	5.5	● 186176	● 187384
5/16	24	5.95	75	22	6	4.47	5	6.9	● 186177	● 187385
3/8	24	7.1	83	26	8	5.62	5	8.5	● 186178	● 187386
7/16	20	7.95	83	31	8	6.17	5	9.8	● 186179	● 187387
1/2	20	9.95	95	35	10	8.17	5	11.4	● 186180	● 187388



## GWi

GWi3067VS

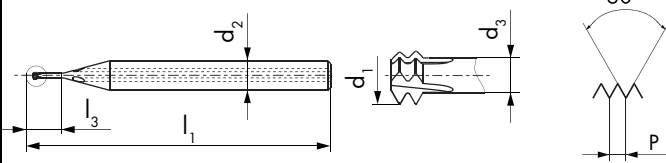


VS

GWi3067VX



VX



GWi3067VS

GWi3067VX



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
4	48	2.23	51	9.3	5	1.49	3	2.35
5	44	2.51	51	10.6	5	1.7	4	2.6
6	40	2.77	51	11.7	6	1.88	4	2.9
8	36	3.35	51	13.8	6	2.36	4	3.5
10	32	3.91	51	16	8	2.8	4	4.05
12	28	4.44	51	18.1	8	3.17	4	4.6
1/4	28	4.95	51	20.7	8	3.68	4	5.5
5/16	24	5.95	75	26	6	4.47	5	6.9
3/8	24	7.1	83	31	8	5.62	5	8.5
7/16	20	7.95	83	36	8	6.17	5	9.8
1/2	20	9.95	95	41	10	8.17	5	11.4

ID

ID

● 186559	● 187497
● 186560	● 187498
● 186561	● 187499
● 186562	● 187500
● 186563	● 187501
● 186564	● 187502
● 186565	● 187503
● 186566	● 187504
● 186567	● 187505
● 186568	● 187506
● 186569	● 187507

## GWi

GWi3067VS

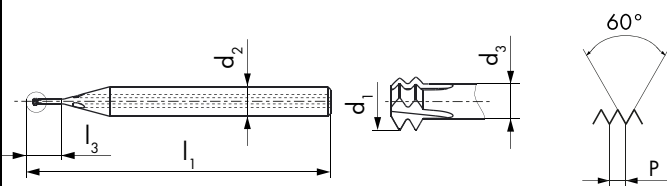


GWi3067VX



GWi3067VS

GWi3067VX



Ø" D <sub>1</sub> UNJF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
8	36	2.99	51	13.8	6	2	4	3.55
10	32	3.51	51	16	8	2.4	4	4.1
1/4	28	4.84	51	20.7	8	3.57	4	5.55
5/16	24	5.95	75	26	6	4.47	5	7
3/8	24	7.1	83	31	8	5.62	5	8.6
1/2	20	9.95	95	41	10	8.17	5	11.55

ID

ID

● 188837

● 188860

● 188838

● 188861

● 188839

● 188862

● 188840

● 188863

● 188841

● 188864

● 188842

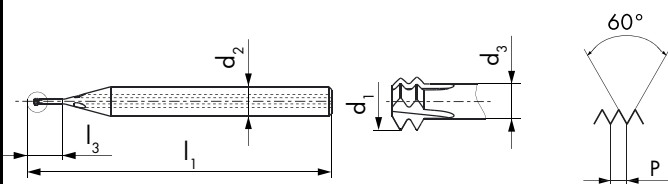
● 188865

## GWi

GWi3069VS



GWi3069VS



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm			ID
6	40	2.77	51	15.2	6	1.88	4	2.9	● 186639
8	36	3.35	51	18	6	2.36	4	3.5	● 186640
10	32	3.91	51	20.8	8	2.8	4	4.05	● 186641
12	28	4.44	51	23.6	8	3.17	4	4.6	● 186642
1/4	28	4.95	51	27.1	8	3.68	4	5.5	● 186643
5/16	24	5.95	75	34	6	4.47	5	6.9	● 186644
3/8	24	7.1	83	40	8	5.62	5	8.5	● 186645
7/16	20	7.95	83	47	8	6.17	5	9.8	● 186646
1/2	20	9.95	95	54	10	8.17	5	11.4	● 186647

## GWi

GWi3066VS



VS

GWi3066VX



VX

GWi3067VS

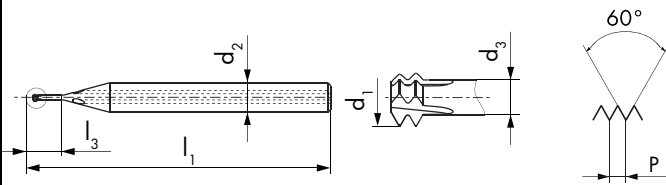


VS

GWi3067VX



VX



GWi3066VS

GWi3066VX

GWi3067VS

GWi3067VX



$\frac{\emptyset D_1}{S}$	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm		
0.8	0.2	0.57	40	2.3	3	0.29	3	0.66 <sup>1</sup>
0.9	0.225	0.64	40	2.6	3	0.33	3	0.74 <sup>1</sup>
1	0.25	0.71	40	2.9	3	0.36	3	0.82 <sup>1</sup>
1.2	0.25	0.91	40	3.4	3	0.56	3	1.02 <sup>1</sup>
1.4	0.3	1.06	40	3.9	4	0.64	3	1.18 <sup>1</sup>

ID

ID

● 194319

● 194329

● 194320

● 194330

● 194321

● 194331

● 194322

● 194332

● 194323

● 194333

\* 4H5H → 4H6H = +0.02 mm

$\frac{\emptyset D_1}{S}$	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm		
1.4	0.3	1.06	40	4.6	4	0.64	3	1.18 <sup>1</sup>

ID

ID

● 194326

● 194336

\* 4H5H → 4H6H = +0.02 mm

# GWi

GWi5066VS

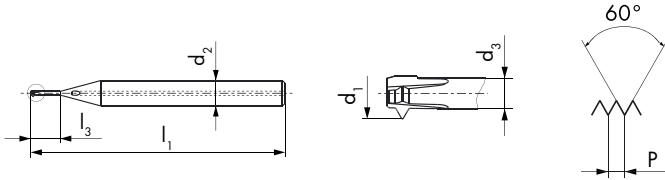


GWi5067VS



GWi5066VS

GWi5067VS



$\emptyset D_1$ M	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm			ID
0.8	0.2	0.55	40	2.3	3	0.27	1	0.58 <sup>1</sup>	● 189165
0.9	0.225	0.62	40	2.6	3	0.31	1	0.65 <sup>1</sup>	● 189166
1	0.25	0.66	40	2.9	3	0.31	1	0.7 <sup>1</sup>	● 189167
1.2	0.25	0.86	40	3.4	3	0.51	1	0.9 <sup>1</sup>	● 189168
1.4	0.3	1.03	40	4	4	0.61	1	1.05 <sup>1</sup>	● 189169
1.6	0.35	1.16	40	4.6	4	0.67	1	1.19 <sup>1</sup>	● 189170
1.8	0.35	1.36	40	5.1	4	0.87	1	1.39 <sup>1</sup>	● 189171
2	0.4	1.5	40	5.6	4	0.94	1	1.54 <sup>1</sup>	● 189172
2.5	0.45	1.94	40	7	4	1.31	1	1.98 <sup>1</sup>	● 189173
3	0.5	2.38	51	8.3	5	1.68	2	2.45 <sup>2</sup>	● 193422
3.5	0.6	2.75	51	9.7	6	1.91	2	2.85 <sup>2</sup>	● 193423
4	0.7	3.13	51	11.1	6	2.15	2	3.25 <sup>2</sup>	● 193424
5	0.8	4	51	13.7	8	2.88	2	4.1 <sup>2</sup>	● 193425
6	1	4.75	51	16.5	8	3.35	2	4.9 <sup>2</sup>	● 193426
$\emptyset D_1$ M	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm			ID
1.4	0.3	1.03	40	4.7	4	0.61	1	1.05 <sup>1</sup>	● 189174
1.6	0.35	1.16	40	5.4	4	0.67	1	1.19 <sup>1</sup>	● 189175
1.8	0.35	1.36	40	6	4	0.87	1	1.39 <sup>1</sup>	● 189176
2	0.4	1.5	40	6.6	4	0.94	1	1.54 <sup>1</sup>	● 189177
2.5	0.45	1.94	40	8.2	4	1.31	1	1.98 <sup>1</sup>	● 189178
3	0.5	2.38	51	9.8	5	1.68	2	2.45 <sup>2</sup>	● 193432
3.5	0.6	2.75	51	11.4	6	1.91	2	2.85 <sup>2</sup>	● 193433
4	0.7	3.13	51	13.1	6	2.15	2	3.25 <sup>2</sup>	● 193434
5	0.8	4	51	16.2	8	2.88	2	4.1 <sup>2</sup>	● 193435
6	1	4.75	51	19.5	8	3.35	2	4.9 <sup>2</sup>	● 193436

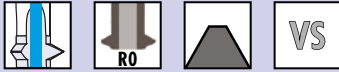
<sup>1</sup> Tol. = +0/0.02mm / <sup>2</sup> Tol. = +0/0.03mm

## GWi

GWi5066VS



GWi5067VS



GWi5066VS

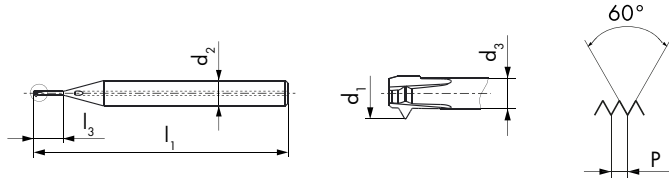
GWi5067VS



LH-rot.



LH-rot.



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
4	40	2.05	51	8.1	5	1.16	2	2.15 <sup>1</sup>
6	32	2.51	51	10	6	1.4	2	2.65 <sup>1</sup>
1/4	20	4.76	51	17.8	8	2.98	2	5 <sup>1</sup>

ID

- 193427
- 193428
- 193429

<sup>1</sup> Tol. = +0/0.03mm

Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
4	40	2.05	51	9.5	5	1.16	2	2.15 <sup>1</sup>
6	32	2.51	51	11.8	6	1.4	2	2.65 <sup>1</sup>
1/4	20	4.76	51	21	8	2.98	2	5 <sup>1</sup>

ID

- 193437
- 193438
- 193439

<sup>1</sup> Tol. = +0/0.03mm



## GWi

GWi5066VS

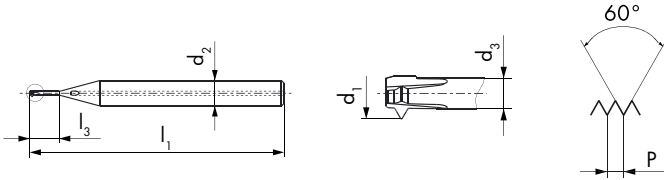


GWi5067VS



GWi5066VS

GWi5067VS



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
10	32	3.83	51	13.3	8	2.72	2	3.95 <sup>1</sup>
1/4	28	5.22	51	17.3	8	3.95	2	5.4 <sup>1</sup>

ID

- 193430
- 193431

\* 4H5H → 4H6H = +0.02 mm

Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	d <sub>3</sub> mm		
10	32	3.83	51	15.7	8	2.72	2	3.95 <sup>1</sup>
1/4	28	5.22	51	20.5	8	3.95	2	5.4 <sup>1</sup>

ID

- 193440
- 193441

\* 4H5H → 4H6H = +0.02 mm

**GWi**

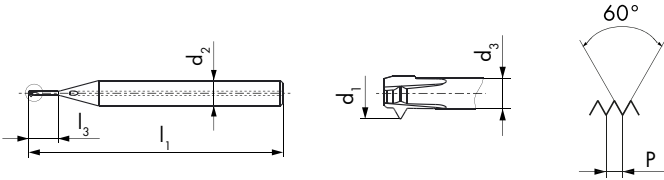
GWi5066VS



GWi5066VS



LH-rot.

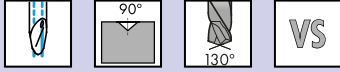


$\frac{\emptyset D_1}{S}$	P mm	$d_1$ mm	$l_1$ mm	$l_3$ mm	$d_2$ h6 mm	$d_3$ mm			ID
0.8	0.2	0.55	40	2.3	3	0.27	1	0.59 <sup>1</sup>	● 189204
0.9	0.225	0.62	40	2.6	3	0.31	1	0.67 <sup>1</sup>	● 189205
1	0.25	0.66	40	2.9	3	0.31	1	0.74 <sup>1</sup>	● 189206
1.2	0.25	0.86	40	3.4	3	0.51	1	0.94 <sup>1</sup>	● 189207
1.4	0.3	1.03	40	4	4	0.61	1	1.09 <sup>1</sup>	● 189208

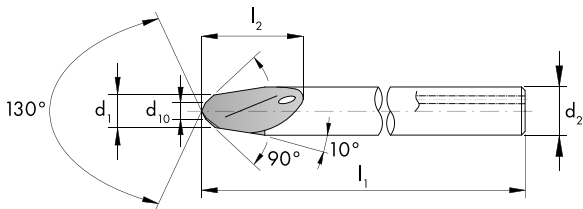
\* 4H5H → 4H6H = +0.02 mm


C

C315VS



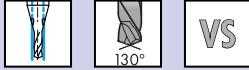
C315VS



$\emptyset d_1$	$l_1$ mm	$l_2$ mm	$d_2$ h6 mm	$d_{10}$ mm		ID
1.4	40	6	3	0.5	2	● 182872
2	40	6.2	3	1	2	● 182873
3	40	6.3	3	1.5	2	● 182874
4	50	8	4	2	2	● 190331
6	60	12	6	3	2	● 190332
8	70	16	8	4	2	● 190333

# FZ

FZ315VS

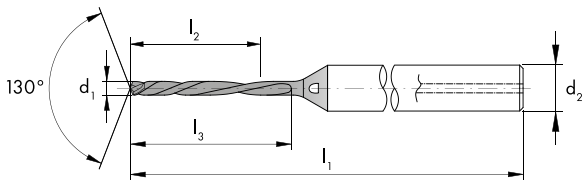


FZ315VS



FZ315VS

FZ315VS



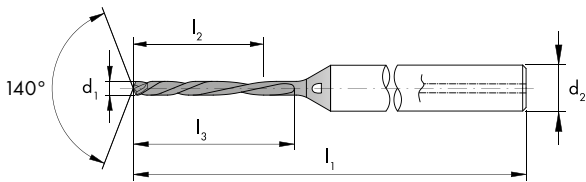
$\emptyset d_1$	$D_1$ mm	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_2$ h6 mm		ID
0.58	M0.8	42	4.6	5.7	3	2	● 182863
0.59	S0.8	42	4.7	5.8	3	2	● 188023
0.65	M0.9	45	5.2	6.4	3	2	● 182864
0.67	S0.9	45	5.4	6.6	3	2	● 188024
0.7	M1	45	5.6	6.9	3	2	● 182865
0.74	S1	45	5.9	7.3	3	2	● 188025
0.9	M1.2	45	7.2	8.8	3	2	● 182866
0.94	S1.2	48	7.5	9.2	3	2	● 188026
1.05	M1.4	48	8.4	10.3	3	2	● 182867
1.09	S1.4	48	8.7	10.7	3	2	● 188027
1.19	M1.6	48	9.5	11.7	3	2	● 182868
1.39	M1.8	52	11.1	13.6	4	2	● 182869
1.54	M2	55	12.3	15.1	4	2	● 182870
1.98	M2.5	55	15.8	19.4	4	2	● 182871
$\emptyset d_1$	$D_1$ mm	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_2$ h6 mm		ID
2.15	UNC4	63	12.9	19.4	4	2	● 190326
2.45	M3	65	14.7	22.1	4	2	● 190321
2.65	UNC6	68	15.9	23.9	4	2	● 190327
2.85	M3.5	68	17.1	25.7	4	2	● 190322
3.25	M4	74	19.5	29.3	6	2	● 190323
3.95	UNF10	78	23.7	35.6	6	2	● 190329
4.1	M5	80	24.6	36.9	6	2	● 190324
4.9	M6	84	29.4	44.1	6	2	● 190325
5	UNC1/4	84	30	45	6	2	● 190328
5.4	UNF1/4	88	32.4	48.6	6	2	● 190330


F

F286VS



F286VS



$\emptyset d_1$ (m7)	$D_1$ mm	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_2$ h6 mm		ID
3.3	M4	66	23	28	6	2	* 160989
4.2	M5	74	29	36	6	2	* 160990
5	M6	82	35	44	6	2	* 160991
6.8	M8	91	43	53	8	2	* 160992
8.5	M10	103	49	61	10	2	* 160993
10.2	M12	118	56	71	12	2	* 160994

# GWH

GWH3015VH



VH

GWH3017VH



VH

GWH3015VH

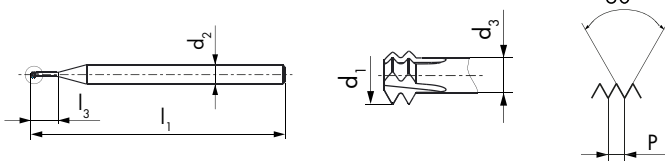
GWH3017VH



LH-rot.



LH-rot.



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm		
3	0.5	2.4	51	6.8	5	1.7	4	2.5
3.5	0.6	2.8	51	7.9	5	1.96	4	2.9
4	0.7	3.2	51	9.1	5	2.22	4	3.3
5	0.8	4	51	11.2	5	2.88	4	4.2
6	1	4.8	51	13.5	5	3.4	4	5
8	1.25	6.4	67	18	8 <sup>1</sup>	4.65	5	6.8
10	1.5	7.95	67	23	8 <sup>1</sup>	5.85	5	8.5
12	1.75	9.6	76	27	10 <sup>1</sup>	7.15	5	10.25

ID

- 196558
- 196559
- 196560
- 196561
- 196562
- 196563
- 196564
- 196565

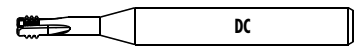
\* 4H5H → 4H6H = +0.02 mm

Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h5 mm	d <sub>3</sub> mm		
3	0.5	2.4	51	9.8	5	1.7	4	2.5
3.5	0.6	2.8	51	11.4	5	1.96	4	2.9
4	0.7	3.2	51	13.1	5	2.22	4	3.3
5	0.8	4	51	16.2	5	2.88	4	4.2
6	1	4.8	51	19.5	5	3.4	4	5
8	1.25	6.4	83	26	8 <sup>1</sup>	4.65	5	6.8
10	1.5	7.95	83	33	8 <sup>1</sup>	5.85	5	8.5
12	1.75	9.6	95	39	10 <sup>1</sup>	7.15	5	10.25

ID

- 196582
- 196583
- 196584
- 196585
- 196586
- 196587
- 196588
- 196589

\* 4H5H → 4H6H = +0.02 mm



# ZBGF

ZBGF6065VS

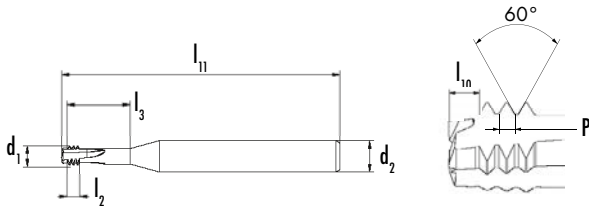


ZBGF6067VS



ZBGF6065VS

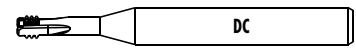
ZBGF6067VS



$\emptyset D_1$ M	P mm	$d_1$ mm	$l_{11}$ mm	$l_2$ mm	$l_3$ mm	$d_2$ h6 mm	$l_{10}$ mm		ID
3	0.5	2.43	55	1.5	7.5	4	0.75	3	● 181605
4	0.7	3.05	55	2.1	10.1	6	1.05	3	● 181606
5	0.8	4.08	55	2.4	12.4	6	1.2	3	● 181607
6	1	4.5	64	3	15	6	1.5	4	● 181608
8	1.25	5.95	64	3.75	19.8	6	1.88	4	● 181609
10	1.5	7.95	74	4.5	24.5	8	2.25	4	● 181610
12	1.75	9.95	80	5.25	29.3	10	2.63	4	● 181611
16	2	11.95	92	6	38	12	3	4	● 181612

$\emptyset D_1$ M	P mm	$d_1$ mm	$l_{11}$ mm	$l_2$ mm	$l_3$ mm	$d_2$ h6 mm	$l_{10}$ mm		ID
3	0.5	2.43	55	1.5	10.5	4	0.75	3	● 181613
4	0.7	3.05	55	2.1	14.1	6	1.05	3	● 181614
5	0.8	4.08	55	2.4	17.4	6	1.2	3	● 181615
6	1	4.5	72	3	21	6	1.5	4	● 181616
8	1.25	5.95	72	3.75	27.8	6	1.88	4	● 181617
10	1.5	7.95	90	4.5	34.5	8	2.25	4	● 181618
12	1.75	9.95	102	5.25	41.3	10	2.63	4	● 181619
16	2	11.95	115	6	54	12	3	4	● 181620





## ZBGF

ZBGF6065VS

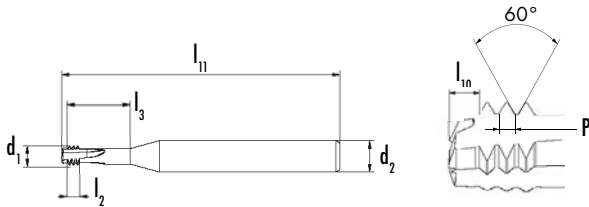


ZBGF6067VS



ZBGF6065VS

ZBGF6067VS



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	l <sub>10</sub> mm	
4	40	2.11	55	1.9	7.6	4	0.95	3
6	32	2.59	55	2.4	9.4	4	1.19	3
8	32	3.1	55	2.4	10.8	6	1.19	3
10	24	3.6	55	3.2	12.9	6	1.59	3
1/4	20	4.8	64	3.8	16.6	6	1.91	4
5/16	18	5.95	64	4.2	20.2	6	2.12	4
3/8	16	7.1	74	4.8	23.9	8	2.38	4
1/2	13	9.95	80	5.9	31.3	10	2.93	4
5/8	11	11.95	92	6.9	38.7	12	3.46	4

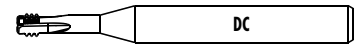
ID

- 183509
- 183510
- 183511
- 183512
- 183513
- 183514
- 183515
- 183516
- 183517

Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	l <sub>10</sub> mm	
8	32	3.1	55	2.4	14.9	6	1.19	3
1/4	20	4.8	72	3.8	22.9	6	1.91	4
5/16	18	5.95	72	4.2	28.1	6	2.12	4
3/8	16	7.1	90	4.8	33.4	8	2.38	4
1/2	13	9.95	102	5.9	44	10	2.93	4
5/8	11	11.95	115	6.9	54.6	12	3.46	4

ID

- 183520
- 183522
- 183523
- 183524
- 183525
- 183526



## ZBGF

ZBGF6065VS

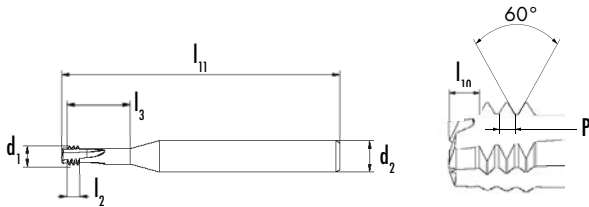


ZBGF6067VS



ZBGF6065VS

ZBGF6067VS



Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	l <sub>10</sub> mm	
4	48	2.23	55	1.6	7.3	4	0.79	3
8	36	3.1	55	2.1	10.5	6	1.06	3
10	32	3.91	55	2.4	12.1	6	1.19	3
1/4	28	4.8	64	2.7	15.5	6	1.36	4
5/16	24	5.95	64	3.2	19.1	6	1.59	4
3/8	24	7.1	74	3.2	22.3	8	1.59	4
7/16	20	7.95	74	3.8	26.1	8	1.91	4
1/2	20	9.95	80	3.8	29.3	10	1.91	4
5/8	18	11.95	92	4.2	36	12	2.12	4

ID

- 183527
- 183528
- 183529
- 183530
- 183531
- 183532
- 183533
- 183534
- 183535

Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> h6 mm	l <sub>10</sub> mm	
4	48	2.23	55	1.6	10.2	4	0.79	3
8	36	3.1	55	2.1	14.7	6	1.06	3
10	32	3.91	55	2.4	16.9	6	1.19	3
1/4	28	4.8	72	2.7	21.8	6	1.36	4
5/16	24	5.95	72	3.2	27	6	1.59	4
3/8	24	7.1	90	3.2	31.8	8	1.59	4
7/16	20	7.95	90	3.8	37.2	8	1.91	4
1/2	20	9.95	102	3.8	42	10	1.91	4
5/8	18	11.95	115	4.2	51.9	12	2.12	4

ID

- 183536
- 183537
- 183538
- 183539
- 183540
- 183541
- 183542
- 183543
- 183544



## **L'ALLROUNDER LE PLUS COMPLET**

QU'UNE MACHINE CNC  
N'A JAMAIS RENCONTRÉ

**PLUS D'INFORMATIONS SUR [DCSWISS.COM](https://www.dcswiss.com)/TÉLÉCHARGEMENT**

## **IL MIGLIOR MASCHIO UNIVERSALE**

MAI VISTO FINORA DA UNA MACCHINA CNC  
**ULTERIORI INFORMAZIONI SOTTO [DCSWISS.COM/IT/DOWNLOAD](https://www.dcswiss.com/it/download)**

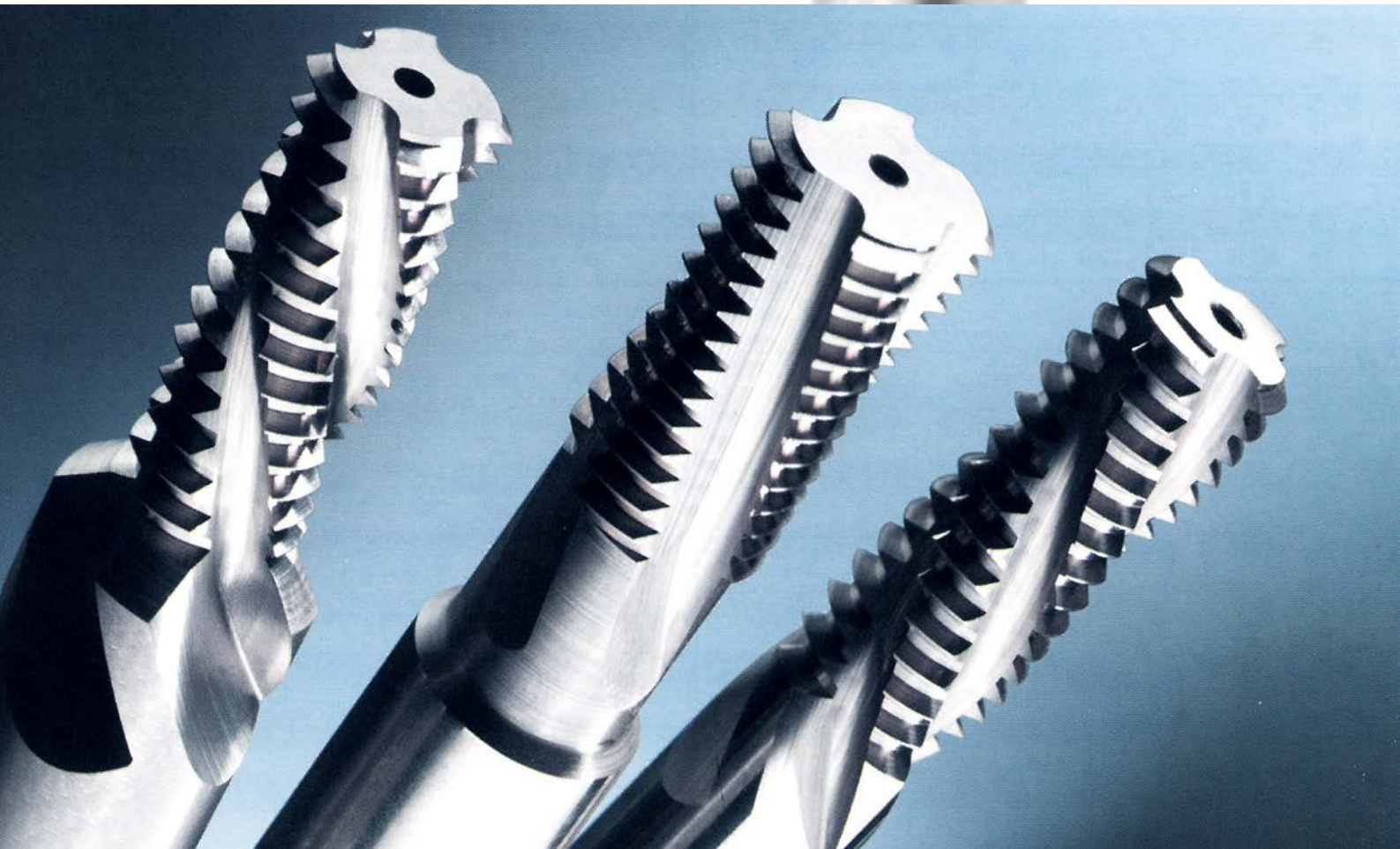


## VERSIONS SPÉCIALES

*Nous vous proposons un programme standard étendu, basé sur les normes techniques actuelles et les besoins généraux de nos clients. Si vous ne trouvez pas l'outil adéquat pour votre cas d'application, nous nous ferons un plaisir de vous soumettre une offre adaptée à la solution optimale recherchée.*

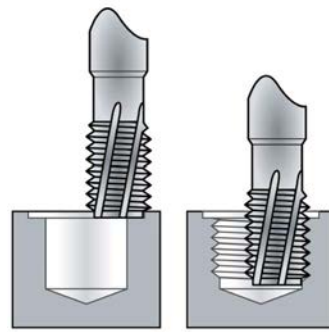
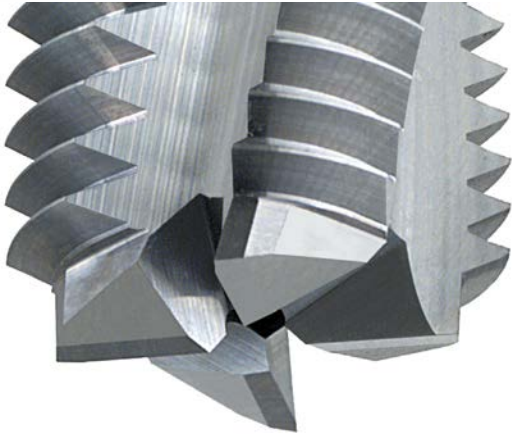
## ESECUZIONI SPECIALI

Vi offriamo un'ampia gamma di prodotti standard, basati sulle norme tecniche attuali e sulle esigenze generali dei nostri clienti. Se non riuscite a trovare nel nostro programma standard l'utensile di filettatura ottimale per la vostra lavorazione, saremo lieti di farvi un'offerta per la produzione speciale di cui avete bisogno, adattata alla vostra applicazione.



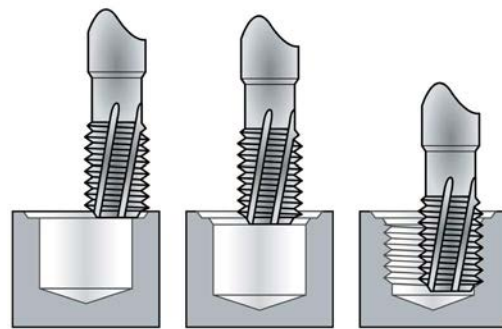
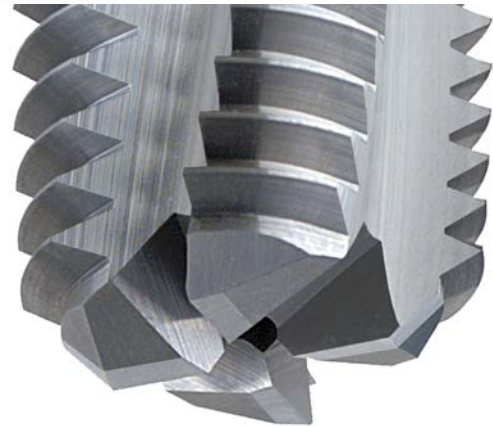


# GFMS



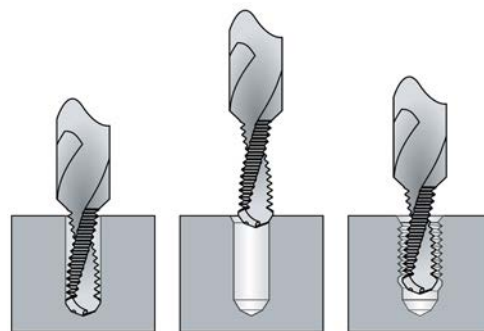
*Coupe frontale*  
Taglio frontale

# GFMS



*Coupe frontale + coupe circulaire avec biseau à 45°*  
Taglio frontale + taglio circolare con smusso a 45°

# BGFS

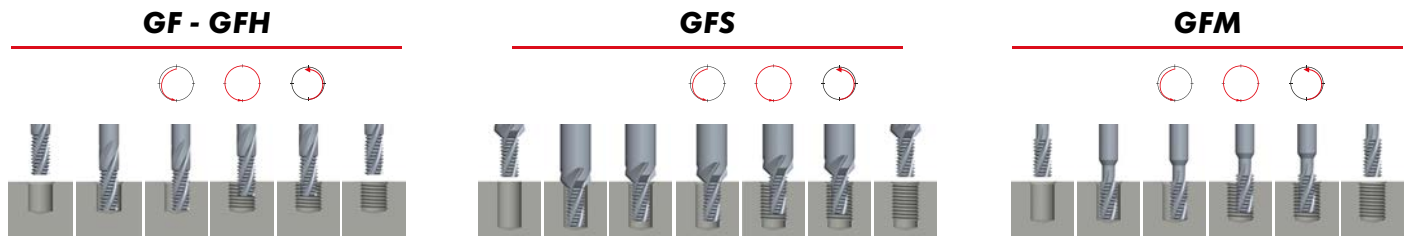


*Avec biseau circulaire à 45° pour chanfreiner le filetage*  
Con taglio circolare a 45° per smussare

# TABELLE D'UTILISATION GF - GFH - GFS - GFM

## TABELLA D'IMPIEGO GF - GFH - GFS - GFM

Cycle de programmation pour fraises à fileter GF - GFH - GFS - GFM  
Ciclo di programmazione per frese a filettare GF - GFH - GFS - GFM



### **Table de utilisation pour fraises à fileter**      **Tabella d'impiego per frese a filettare**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinati > 44 - ≤ 54 HRC	> 410	> 1400		
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		
	42 Alliage de titane	Leghe al titanio	> 250	> 850		
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400		
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		
<b>80</b> Matières plastiques Materie plastica	81 Matières thermoplastiques	Materie termoplastiche	-	-		
	82 Matières duroplastiques	Materie termoindurenti	-	-		
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		
	92 Or rose	Oro rosso	-	-		
	93 Or blanc	Oro bianco	-	-		
	94 Argent	Argento	-	-		














Optimale avec huile de coupe  
Ottimale con olio da taglio

Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

Optimale avec émulsion  
Ottimale con emulsione

Fonctionnelle avec émulsion  
Funzionale con emulsione

## GF - GFH - GFS - GFM

GF - GFH - GFS - GFM															
		GF611x		GF616x		GF621x GF626x		GFH611x	GFS661x		GFS666x		GFM626x		
															
		VS		VS		VS		VH	VS		VS		VS		
		Avance fz (mm/dent)						Avanzamento fz (mm/dente)							
	80-150		0.04-0.15		0.04-0.15		0.04-0.15				0.04-0.15		0.04-0.15		11
	60-120		0.04-0.15		0.04-0.15		0.04-0.15				0.04-0.15		0.04-0.15		12
	60-120		0.02-0.10		0.02-0.10		0.02-0.10				0.02-0.10		0.02-0.10		13
	60-120		0.02-0.10		0.02-0.10		0.02-0.10				0.02-0.10		0.02-0.10		14
	50-90		0.02-0.08		0.02-0.08		0.02-0.08				0.02-0.08		0.02-0.08		15
	30-60		0.01-0.05		0.01-0.05		0.01-0.05	0.01-0.05			0.01-0.05		0.01-0.05		16
	30-50		0.008-0.035		0.008-0.035		0.008-0.035	0.008-0.035			0.008-0.035		0.008-0.035		17
	20-40							0.005-0.02							18
	50-90		0.02-0.10		0.02-0.10		0.02-0.10				0.02-0.10		0.02-0.10		21
	30-60		0.01-0.05		0.01-0.05		0.01-0.05				0.01-0.05		0.01-0.05		22
	50-90		0.02-0.08		0.02-0.08		0.02-0.08				0.02-0.08		0.02-0.08		23
	30-60		0.01-0.05		0.01-0.05		0.01-0.05				0.01-0.05		0.01-0.05		24
	80-150		0.05-0.15		0.05-0.15		0.05-0.15	0.05-0.15			0.05-0.15		0.05-0.15		31
	80-120		0.02-0.10		0.02-0.10		0.02-0.10				0.02-0.10		0.02-0.10		32
40-70	60-100	0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08		0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08	41
20-40	30-60	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05		0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.05	42
	30-60		0.02-0.08		0.02-0.08		0.02-0.08				0.02-0.08		0.02-0.08		51
	30-60		0.02-0.08		0.02-0.08		0.02-0.08				0.02-0.08		0.02-0.08		52
	20-30		0.005-0.02		0.005-0.02		0.005-0.02				0.005-0.02		0.005-0.02		53
	200-250		0.05-0.15		0.05-0.15		0.05-0.15				0.05-0.15		0.05-0.15		61
150-200	200-250	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	62
150-200	200-250	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15		0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	63
100-250	100-250	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20		0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	71
100-250	100-250	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20		0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	72
	100-250		0.05-0.20		0.05-0.20		0.05-0.20				0.05-0.20		0.05-0.20		73
	100-250		0.05-0.15		0.05-0.15		0.05-0.15				0.05-0.15		0.05-0.15		74
100-200	100-200	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20		0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	0.05-0.20	81
50-100	50-100	0.04-0.15	0.04-0.15	0.04-0.15	0.04-0.15	0.04-0.15	0.04-0.15		0.04-0.15	0.04-0.15	0.04-0.15	0.04-0.15	0.04-0.15	0.04-0.15	82
50-100	60-80		0.04-0.15		0.04-0.15		0.04-0.15	0.04-0.15			0.04-0.15		0.04-0.15		83
50-100	100-150	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15		0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	91
50-90	90-120	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15		0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	0.05-0.15	92
	30-50		0.05-0.15		0.05-0.15		0.05-0.15				0.05-0.15		0.05-0.15		93
	90-120		0.05-0.15		0.05-0.15		0.05-0.15				0.05-0.15		0.05-0.15		94

**A** Optimale avec air  
Ottimale con aria

**A** Fonctionnelle avec air  
Funzionale con aria

Les valeurs ci-dessus sont indicatives.  
I valori sopracitati sono indicativi.

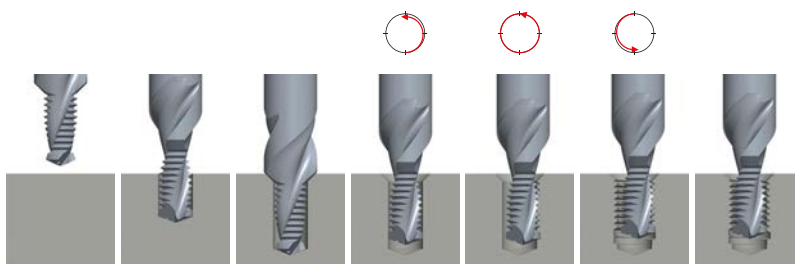




# TABELLE D'UTILISATION BGF— TABELLA D'IMPIEGO BGF

## Cycle de programmation pour fraises à percer-fileter BGF

## Ciclo di programmazione per frese a forare/filettare BGF



### **Table de utilisation pour fraises à percer-fileter** **Tabella d'impiego per frese a forare/filettare**

Groupes de matières Gruppi di materiali	Désignation des matières	Designazione dei materiali	Dureté Durezza (HB)	Résistance Resistenza Rm (N/mm <sup>2</sup> )	Lubrifiant Lubrificante	
					Standard Standard	Revêtu Rivestito
<b>10</b> Aciers Acciai	11 Aciers de décolletage	Acciai da tornitura	< 200	< 700		
	12 Aciers de construction ou de cémentation	Acciai da costruzione / da cementazione	< 200	< 700		
	13 Aciers au carbone	Acciai al carbonio	< 300	< 1000		
	14 Aciers alliés < 850 N/mm <sup>2</sup>	Acciai legati < 850 N/mm <sup>2</sup>	< 250	< 850		
	15 Aciers alliés / traités > 850 - < 1150 N/mm <sup>2</sup>	Acciai legati / trattati > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
	16 Aciers haute résistance ≤ 44 HRC	Acciai ad alta resistenza ≤ 44 HRC	> 250	> 850		
	17 Aciers affinés > 44 - ≤ 54 HRC	Acciai raffinato > 44 - ≤ 54 HRC	> 410	> 1400		
	18 Aciers trempés > 54 - ≤ 63 HRC	Acciai temprati > 54 - ≤ 63 HRC	> 560	> 1980		
<b>20</b> Aciers inoxydables Acciai inox	21 Aciers inoxydables, soufrés	Acciai inox, allo zolfo	< 250	< 850		
	22 Austénitiques	Acciai inox, austenitici	< 250	< 850		
	23 Ferritiques et martensitiques < 850 N/mm <sup>2</sup>	Ferritici e martensitici < 850 N/mm <sup>2</sup>	< 250	< 850		
	24 Ferritiques et martensitiques > 850 - < 1150 N/mm <sup>2</sup>	Ferritici e martensitici > 850 - < 1150 N/mm <sup>2</sup>	> 250	> 850		
<b>30</b> Fonte Ghisa	31 Fonte grise	Ghisa grigia	< 250	< 850		
	32 Fonte à graphite sphéroïdale et malléable	Ghisa grafitica sferoidale e malleabile	< 250	< 850		
<b>40</b> Titane Titanio	41 Titane pur	Titanio puro	< 250	< 850		
	42 Alliage de titane	Leghe al titanio	> 250	> 850		
<b>50</b> Nickel Nickel	51 Alliage de Nickel 1 ≤ 850 N/mm <sup>2</sup>	Leghe al Nickel 1 ≤ 850 N/mm <sup>2</sup>	< 250	< 850		
	52 Alliage de Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	Leghe al Nickel 2 > 850 - ≤ 1150 N/mm <sup>2</sup>	> 250	> 850		
	53 Alliage de Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	Leghe al Nickel 3 > 1150 - ≤ 1600 N/mm <sup>2</sup>	> 340	> 1150		
<b>60</b> Cuivre Rame	61 Cuivre pur (électrolytique)	Rame puro (elettrolitico)	< 120	< 400		
	62 Laiton, bronze (copeaux courts)	Ottone, bronzo (trucioli corti)	< 200	< 700		
	63 Laiton (copeaux longs)	Ottone (trucioli lunghi)	< 200	< 700		
<b>70</b> Aluminium Magnésium Alluminio Magnesio	71 Al non allié	Alluminio non legato	< 100	< 350		
	72 Al allié Si < 1.5 %	Leghe di alluminio Si < 1.5 %	< 150	< 500		
	73 Al allié Si > 1.5 % - < 10 %	Leghe di alluminio Si > 1.5 % - < 10 %	< 120	< 400		
	74 Al allié Si > 10 %, Alliages Magnésium	Leghe di al. Si > 10 %, Leghe al magnesio	< 120	< 400		
<b>80</b> Matières plastiques Materie plastiche	81 Matières thermoplastiques	Materie termoplastiche	-	-		
	82 Matières duroplastiques	Materie termoindurenti	-	-		
	83 Matières plastiques renforcées par fibres	Materie plastiche rinforzate con fibre	-	-		
<b>90</b> Métaux précieux Metalli preziosi	91 Or jaune	Oro giallo	-	-		
	92 Or rose	Oro rosso	-	-		
	93 Or blanc	Oro bianco	-	-		
	94 Argent	Argento	-	-		

Optimale avec huile de coupe  
Ottimale con olio da taglio

Fonctionnelle avec huile de coupe  
Funzionale con olio da taglio

Optimale avec émulsion  
Ottimale con emulsione

Fonctionnelle avec émulsion  
Funzionale con emulsione

BGF



Vc (m/min)		VS	VS		
Standard	Revêtu Rivestito	Avance perçage f (mm/tour)	Avanzamento foratura f (mm/giro)	Avance fraisage fz (mm/dent)	Avanzamento fresatura fz (mm/dente)
					11
					12
					13
					14
					15
					16
					17
					18
					21
					22
					23
					24
	80-150		0.10-0.30		0.05-0.15
	80-120		0.10-0.20		0.02-0.10
					41
					42
					51
					52
					53
					61
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20
100-200	150-250	0.10-0.30	0.10-0.30	0.05-0.15	0.05-0.15
					81
					82
	80-120		0.10-0.20		0.02-0.10
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20
					91
					92
					93
					94

Les valeurs indiquées sont indicatives.  
I valori indicati sono indicativi.

**Notes techniques**

- Δ L'usinage de matières à copeaux longs exige plusieurs déburrages.
- Δ Pour l'utilisation de la fraise à percer-fileter type BGF dans d'autres matières, veuillez vous adresser à DC SWISS SA.

**Note tecniche**




















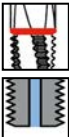

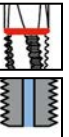

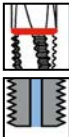
- Δ L'esecuzione della foratura su materiali a truciolo lungo, deve avvenire in più fasi.
- Δ Per l'impiego della fresa a forare/filettare tipo BGF per materiali non compresi in tabella, vogliate chiedere a DC SWISS SA.

**A** Optimale avec air  
Ottimale con aria

**A** Fonctionnelle avec air  
Funzionale con aria










**Répertoire - Fraises à fileter en carbure monobloc type GF**  
**Rubrica - Frese a filettare in metallo duro integrale tipo GF**

		GF											
Type Tipo		GF6110	GF6110VS	GF6160	GF6160VS	GF6115	GF6115VS	GF6165	GF6165VS	GF6116	GF6116VS	GF6166	GF6166VS
Revêtement Rivestimento			VS		VS		VS		VS		VS		VS
													
Longueur filetée Lunghezza filettatura													
Caractéristiques Caratteristiche													
<b>M</b>	ISO DIN 13		104				105		105		106		106
<b>MF</b>	ISO DIN 13		107						108				108
<b>UNC</b>	ASME B1.1		109						110				110
<b>UNF</b>	ASME B1.1		111						112				112
<b>UN</b>	ASME B1.1												
<b>UNEF</b>	ASME B1.1												
<b>UNS</b>	ASME B1.1												
<b>G (BSP)</b>	DIN EN ISO 228								113				113
<b>NPT</b>	ASME B1.20.1				114								
<b>NPTF</b>	ANSI B1.20.3				114								
















**Répertoire - Fraises à fileter en carbure monobloc type GF, GFH et GFS**  
**Rubrica - Frese a filettare in metallo duro integrale tipo GF, GFH e GFS**

		GF		GFH	GFS							
Type Tipo		GF6215VS	GF6265VS	GFH6110VH	GF6610	GF6610VS	GF6660	GF6660VS	GF6615	GF6615VS	GF6665	GF6665VS
Revêtement Rivestimento		VS	VS	VH		VS		VS		VS		VS
Longueur fileté Lunghezza filettatura												
Caractéristiques Caratteristiche				 HRC ≤ 63								
<b>M</b>	ISO DIN 13	115	115	104		117		117		118		118
<b>MF</b>	ISO DIN 13	115	115			120		120		121		121
<b>UNC</b>	ASME B1.1	116	116			122		122		123		123
<b>UNF</b>	ASME B1.1	116	116			124		124		125		125
<b>UN</b>	ASME B1.1											
<b>UNEF</b>	ASME B1.1											
<b>UNS</b>	ASME B1.1											
<b>G (BSP)</b>	DIN EN ISO 228							126				126
<b>NPT</b>	ASME B1.20.1							127				
<b>NPTF</b>	ANSI B1.20.3							127				

**Répertoire - Fraises à fileter en carbure monobloc type GFS et GFM**  
**Rubrica - Frese a filettare in metallo duro integrale tipo GFS e GFM**

		GFS		GFM			
Type Tipo		GFS6616	GFS6616VS	GFS6666	GFS6666VS	GFM6260	GFM6260VS
Revêtement Rivestimento			VS		VS		VS
							
Longueur fileté Lunghezza filettatura							
Caractéristiques Caratteristiche							
<b>M</b>	ISO DIN 13		119		119		128
<b>MF</b>	ISO DIN 13						128
<b>UNC</b>	ASME B1.1						129
<b>UNF</b>	ASME B1.1						129
<b>UN</b>	ASME B1.1						129
<b>UNEF</b>	ASME B1.1						129
<b>UNS</b>	ASME B1.1						129
<b>G (BSP)</b>	DIN EN ISO 228						130
<b>NPT</b>	ASME B1.20.1						131
<b>NPTF</b>	ANSI B1.20.3						131

**Répertoire - Fraises à percer-fileter en carbure monobloc type BGF**  
**Rubrica - Frese a forare/filettare in metallo duro integrale tipo BGF**

		BGF									
Type Tipo		BGF6760	BGF6760VS	BGF6765	BGF6765VS	BGF6766	BGF6766VS	BGF6865	BGF6865VS	BGF6866	BGF6866VS
Revêtement Rivestimento			VS		VS		VS		VS		VS
											
Longueur filetée Lunghezza filettatura											
Caractéristiques Caratteristiche											
<b>M</b>	ISO DIN 13	132		133		133		134		134	
<b>MF</b>	ISO DIN 13	135		135							

**Formule de calcul "avance de fraisage"**

Avance contournage  $V_{FK} = f_z \times Z \times n$

Avance centre de l'outil  $V_{FM} = \frac{V_{FK} \times (\varnothing \text{ nominal de filetage} - \varnothing \text{ de la fraise})}{\text{nominal du filetage}}$

Pour les CNC ne calculant pas automatiquement l'avance du centre de l'outil, la valeur "avance centre de l'outil  $V_{FM}$ " doit être prise en considération.

**Formula di calcolo per l'avanzamento di fresatura**

Avanzamento in contornatura  $V_{FK} = f_z \times Z \times n$

Avanzamento dal centro dell'utensile  $V_{FM} = \frac{V_{FK} \times (\varnothing \text{ nominale della filettatura} - \varnothing \text{ della fresa})}{\varnothing \text{ nominale della filettatura}}$

Per i CNC, che non calcolano automaticamente l'avanzamento dal centro dell'utensile, deve essere preso in considerazione il valore "avanzamento dal centro dell'utensile  $V_{FM}$ ".

## GF - GFH

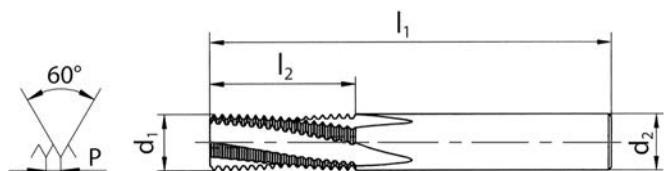
GF6110



GF6110VS



GFH6110VH



GF6110

GF6110VS

GFH6110VH



HRC  
≤ 63

Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	GF	GFH		ID	ID	ID
2	0.4	1.5	48	3.4	6	2		1.6	● 125233	● 115993	
2.5	0.45	1.9	48	4.3	6	3		2.05	● 150565	● 152124	
3	0.5	2.3	48	5.3	6	3	3	2.5	● 125660	● 116395	● 150072
3.5	0.6	2.7	48	6.3	6	3		2.9	● 116350	● 135217	
4	0.7	3	48	7.4	6	3	3	3.3	● 125944	● 116396	● 150073
5	0.8	3.8	48	9.2	6	3	4	4.2	● 126158	● 116397	● 150074
6	1	4.5	54	10.5	6		4	5			● 150075
8	1.25	5.95	54	13.1	6		5	6.8			● 150076
10	1.5	7.95	64	17.3	8		5	8.5			● 150077
12	1.75	9.95	74	20.1	10		5	10.2			● 151326



# GF

GF6115



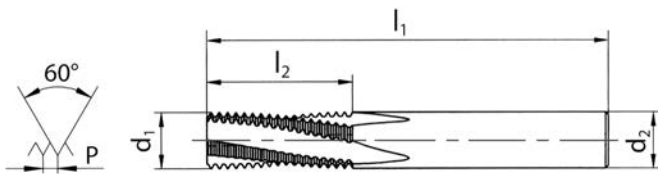
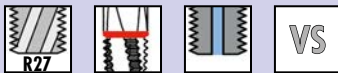
GF6115VS



GF6165



GF6165VS



GF6115



GF6115VS



GF6165



GF6165VS



$\varnothing D_1$ M	P mm	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
4	0.7	3	48	8.8	6	3	3.3
5	0.8	3.8	48	10.8	6	3	4.2
6	1	4.5	54	13.5	6	3	5
8	1.25	5.95	54	18.1	6	3	6.8
10	1.5	7.95	64	21.8	8	4	8.5
12	1.75	9.95	72	25.4	10	4	10.2
14	2	9.95	74	31	10	4	12
16	2	11.95	80	35	12	4	14
18	2.5	13.95	90	41.3	14	4	15.5
20							17.5

ID

ID

ID

ID

● 146298

● 146969

● 146299

● 146970

● 146300

● 146971

● 126350

● 116398

● 146321

● 146972

● 126586

● 116399

● 146322

● 146973

● 124836

● 116400

● 116342

● 116401

● 125066

● 116402

● 125114

● 115990

● 125229

● 116403

## GF

GF6116



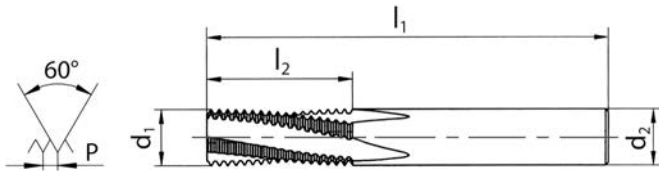
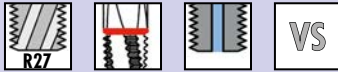
GF6116VS



GF6166



GF6166VS



GF6116



GF6116VS












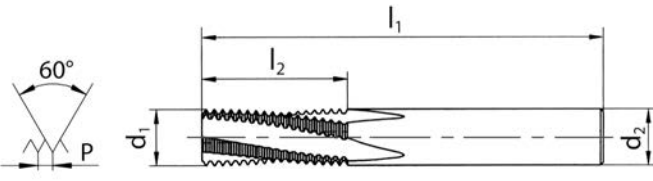


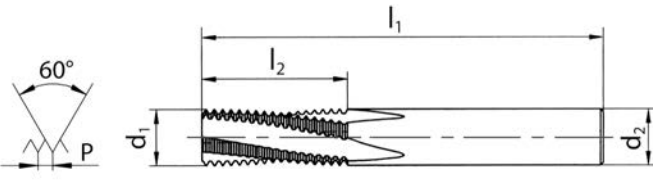




GF6166



GF6166VS



$\emptyset D_1$ M	P mm	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm			ID	ID	ID	ID
4	0.7	3	48	10.9	6	3	3.3	● 155365	● 155370		
5	0.8	3.8	48	13.2	6	3	4.2	● 155366	● 155371		
6	1	4.5	54	16.5	6	3	5	● 155367	● 155372	● 155375	● 155382
8	1.25	5.95	54	21.9	6	3	6.8	● 155368	● 155373	● 155376	● 155383
10	1.5	7.95	64	26.3	8	4	8.5	● 155369	● 155374	● 155377	● 155384
12	1.75	9.95	74	32.4	10	4	10.2			● 155378	● 155385
14	2	9.95	74	37	10	4	12			● 155379	● 155386
16	2	11.95	90	43	12	4	14			● 155380	● 155387
18	2.5	13.95	105	53.8	14	4	15.5			● 155381	● 155388
20							17.5				

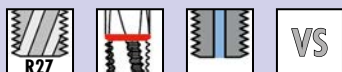
GF									GF6110	GF6110VS						
<p><b>GF6110</b>  </p> <p><b>GF6110VS</b>   </p>									 							
									 							
									 							
$\emptyset D_1$	P	$d_1$	$l_1$	$l_2$	$d_2$				ID	ID						
MF	mm	mm	mm	mm	mm											
4	0.5	3	48	7.3	6	3			● 135218	● 135219						
5	0.5	3.8	48	8.8	6	3			● 135069	● 135220						

## GF

GF6165



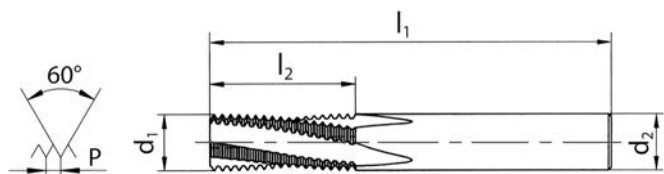
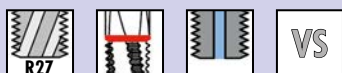
GF6165VS



GF6166



GF6166VS



GF6165



GF6165VS



GF6166



GF6166VS



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm		
6	0.5	4.5	54	12.8	6	3	5.5
6	0.75	4.5	54	13.1	6	3	5.25
8	0.5	5.95	54	17.8	6	3	7.5
8	0.75	5.95	54	16.9	6	3	7.25
8	1	5.95	54	17.5	6	3	7
10	1	7.95	64	21.5	8	4	9
10	1.25	7.95	64	21.9	8	4	8.8
12	1	9.95	72	25.5	10	4	11
12	1.5	9.95	72	26.3	10	4	10.5

ID

ID

● 135221	● 135222
● 123664	● 123665
● 135002	● 135223
● 143110	● 135224
● 124239	● 116404
● 119986	● 116405
● 120102	● 116406
● 120303	● 116407
● 120392	● 120393

Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm		
6	0.5	4.5	54	15.8	6	3	5.5
6	0.75	4.5	54	16.1	6	3	5.25
8	0.5	5.95	54	20.8	6	3	7.5
8	0.75	5.95	54	20.6	6	3	7.25
8	1	5.95	54	21.5	6	3	7
10	1	7.95	64	26.5	8	4	9
10	1.25	7.95	64	26.9	8	4	8.8
12	1	9.95	74	31.5	10	4	11
12	1.5	9.95	74	32.3	10	4	10.5

ID

ID

● 155389	● 155398
● 155390	● 155399
* 155391	* 155400
● 155392	● 155401
* 155393	* 155402
● 155394	● 155403
* 155395	* 155404
● 155396	● 155405
● 155397	● 155406

# UNC ASME B1.1

VHM  
CAR



HB  
HE

sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

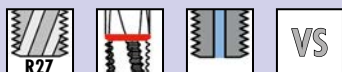
GF									GF6110	GF6110VS		
<p><b>GF6110</b></p> <p><b>GF6110VS</b></p>												
$\emptyset'' D_1$ UNC	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm				ID	ID		
10	24	3.6	48	10.1	6	3		3.8	● 135225	● 135226		
12	24	4.1	48	10.1	6	3		4.4	● 135227	● 135228		
1/4	20	4.8	54	12.1	6	3		5.1	● 135229	● 135230		

## GF

GF6165



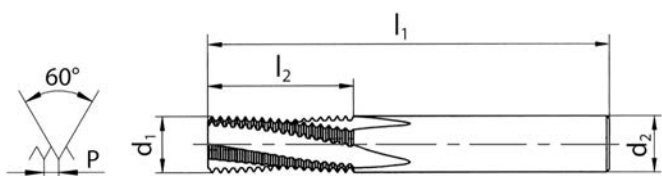
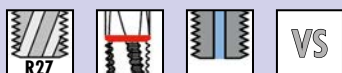
GF6165VS



GF6166



GF6166VS



GF6165



GF6165VS





GF6166



GF6166VS



$\emptyset'' D_1$ UNC	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
1/4	20	4.8	54	14.6	6	3	5.1
5/16	18	5.95	54	17.6	6	3	6.5
3/8	16	7.1	64	21.5	8	4	8
7/16	14	7.95	64	24.5	8	4	9.3
1/2	13	9.95	72	28.4	10	4	10.8

ID

ID

\* 155407

\* 155408

● 116047

● 135231

● 135232



● 135233

\* 116049

\* 135234

\* 135235

\* 135236

$\emptyset'' D_1$ UNC	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
1/4	20	4.8	54	17.1	6	3	5.1
5/16	18	5.95	54	21.9	6	3	6.5
3/8	16	7.1	64	26.2	8	4	8
7/16	14	7.95	64	29.9	8	4	9.3
1/2	13	9.95	74	34.2	10	4	10.8

ID

ID

● 155409

● 155414

● 155410

● 155415

● 155411

● 155416

● 155412

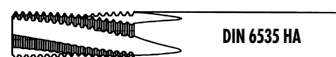
● 155417

● 155413

● 155418

# UNF ASME B1.1

VHM  
CAR



HB  
HE

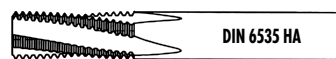
sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

GF									GF6110	GF6110VS		
<p><b>GF6110</b></p> <p><b>GF6110VS</b></p>												
$\emptyset'' D_1$ UNF	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm				ID	ID		
10	32	3.6	48	8.3	6	3		4.05	● 128659	● 135237		
12	28	4.1	48	9.5	6	3		4.6	● 135238	● 135239		
1/4	28	4.8	54	11.3	6	3		5.5	● 135240	● 135176		



# UNF ASME B1.1

VHM  
CAR



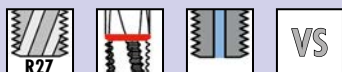
HB  
HE sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

## GF

GF6165



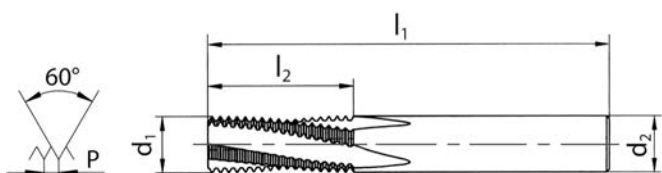
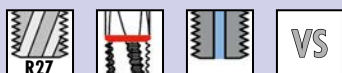
GF6165VS



GF6166



GF6166VS



GF6165



GF6165VS



GF6166



GF6166VS



$\emptyset'' D_1$ UNF	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
1/4	28	4.8	54	14.1	6	3	5.5
5/16	24	5.95	54	17.5	6	3	6.9
3/8	24	7.1	64	20.6	8	4	8.5
7/16	20	7.95	64	24.8	8	4	9.8
1/2	20	9.95	72	27.3	10	4	11.4

ID

ID

- |          |          |
|----------|----------|
| ● 155419 | ● 155420 |
| ● 135242 | ● 135243 |
| ● 135182 | ● 135245 |
| ● 135246 | ● 135247 |
| ● 135183 | ● 135249 |

$\emptyset'' D_1$ UNF	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
1/4	28	4.8	54	16.8	6	3	5.5
5/16	24	5.95	54	20.6	6	3	6.9
3/8	24	7.1	64	24.9	8	4	8.5
7/16	20	7.95	64	28.6	8	4	9.8
1/2	20	9.95	74	33.7	10	4	11.4

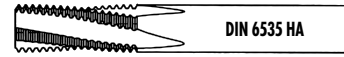
ID

ID

- |          |          |
|----------|----------|
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| ● 155422 | ● 155427 |
| ● 155423 | ● 155428 |
| ● 155424 | ● 155429 |
| ● 155425 | ● 155430 |

# G DIN EN ISO 228 (BSP)

VHM  
CAR



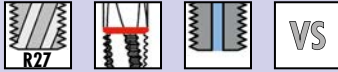
HB  
HE sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

## GF

GF6165



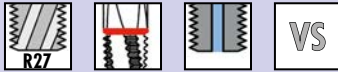
GF6165VS



GF6166



GF6166VS

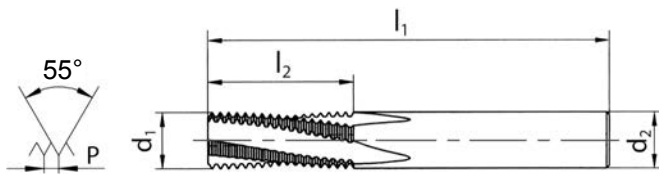
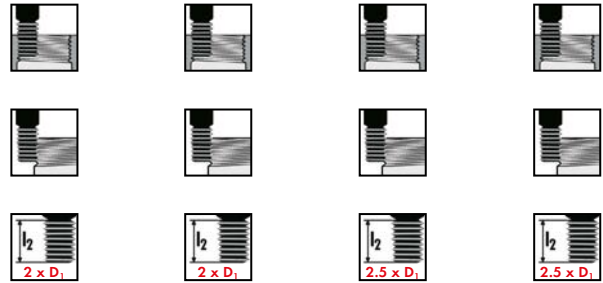


GF6165

GF6165VS

GF6166

GF6166VS



$\emptyset'' D_1$ G	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
1/8	28	7.95	64	21.3	8	4	8.75
1/4	19	9.95	72	28.7	10	4	11.6
3/8	19	13.6	80	35.4	14	4	15.2

ID

ID

- |          |          |
|----------|----------|
| ● 119347 | ● 116409 |
| ● 119292 | ● 116410 |
| ● 119678 | ● 116411 |

$\emptyset'' D_1$ G	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm		
1/8	28	7.95	64	24.9	8	4	8.75
1/4	19	9.95	74	34.1	10	4	11.6
3/8	19	13.6	90	43.4	14	4	15.2

ID

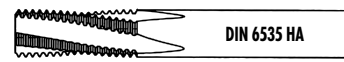
ID

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|----------|----------|
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| ● 155432 | ● 155435 |
| ● 155433 | ● 155436 |

# NPT, NPTF

ASME B1.20.1  
ANSI B1.20.3

VHM  
CAR



HB  
HE

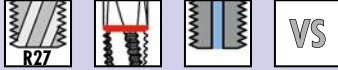
sur demande  
auf Anfrage  
on request  
su richiesta  
sobro pedido

## GF

GF6160

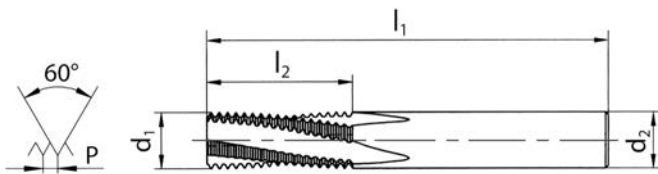
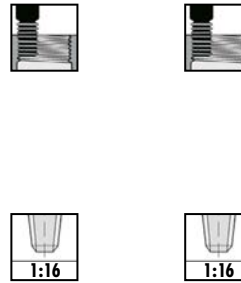


GF6160VS



GF6160

GF6160VS

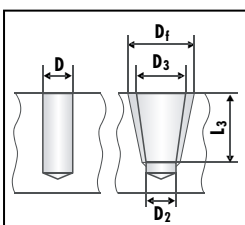


Ø" D <sub>1</sub> NPT	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	
1/8	27	7.3	64	9.9	8	4
1/4	18	9.95	72	14.8	12	4
3/8	18	12.5	80	14.8	14	4
1/2	14	14.7	90	19.1	16	4

ID	ID
● 116371	● 116435
● 135250	● 135251
● 135252	● 135253
● 155437	● 155438

Ø" D <sub>1</sub> NPTF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	
1/8	27	7.3	64	9.9	8	4
3/8	18	12.5	80	14.8	12	4
1/2	14	14.7	90	19.1	14	4

ID	ID
* 135254	
* 135258	* 135259
* 155439	* 155440

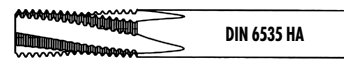


Ø" D <sub>1</sub>	Avant-trou Preforo			
	D	D <sub>2</sub>	NPT NPTF D <sub>3</sub> (+0.05)	
1/8	8.5	8.3	8.74	8.76
1/4	11.0	10.8	11.36	11.40
3/8	14.5	14.2	14.80	14.84
1/2	17.9	17.5	18.32	18.33

Fraisage Fresatura	
D <sub>f</sub>	L <sub>3</sub>
9.81	6.92
12.99	10.02
16.41	10.33
20.37	13.57

# M, MF ISO DIN 13

VHM  
CAR



HB  
HE sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

## GF

GF6215VS

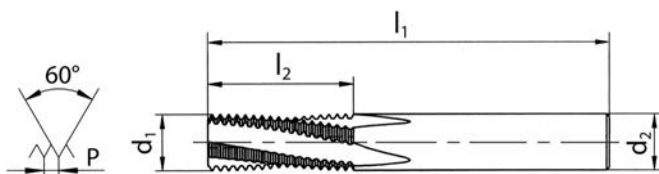


GF6265VS



GF6215VS

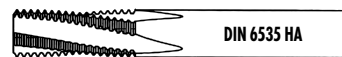
GF6265VS



$\emptyset D_1$ M	P mm	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm			ID	ID
4	0.7	3	48	8.8	6	3	3.3	● 196068	
5	0.8	3.8	48	10.8	6	3	4.2	● 196069	
6	1	4.5	54	13.5	6	3	5	● 196070	● 196080
8	1.25	5.95	54	18.1	6	3	6.8	● 196071	● 196081
10	1.5	7.95	64	21.8	8	4	8.5	● 196072	● 196082
12	1.75	9.95	72	25.4	10	4	10.2	● 196073	● 196083
14	2	9.95	74	31	10	4	12		● 196084
16	2	11.95	80	35	12	4	14		● 196085
18	2.5	13.95	90	43.8	14	4	15.5		● 196086
20	2.5	13.95	90	43.8	14	4	17.5		● 196087
$\emptyset D_1$ MF	P mm	$d_1$ mm	$l_1$ mm	$l_2$ mm	$d_2$ mm			ID	ID
6	0.75	4.5	54	13.1	6	3	5.25	● 196090	● 196099
8	1	5.95	54	17.5	6	3	7	● 196091	● 196100
10	1	7.95	64	21.5	8	4	9	● 196092	● 196101
10	1.25	7.95	64	21.9	8	4	8.8	● 196093	● 196102
12	1	9.95	72	25.5	10	4	11		● 197113
12	1.5	9.95	72	26.3	10	4	10.5	● 196094	● 196103
14	1.5	9.95	74	30.8	10	4	12.5		● 196104
16	1.5	11.95	80	33.8	12	4	14.5		● 196105
18	1.5	13.95	90	42.8	14	4	16.5		● 196106
20	1.5	13.95	90	42.8	14	4	18.5		● 196107

# UNC, UNF ASME B1.1

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sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

## GF

GF6215VS

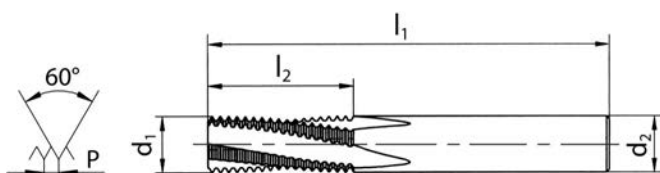


GF6265VS



GF6215VS

GF6265VS



Ø" D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm		
8	32	3.1	48	9.1	6	3	3.4
10	24	3.6	48	10.1	6	3	3.8
1/4	20	4.8	54	14.6	6	3	5.1
5/16	18	5.95	54	17.6	6	3	6.5
3/8	16	7.1	64	21.5	8	4	8
7/16	14	7.95	64	24.5	8	4	9.3
1/2	13	9.95	72	28.4	10	4	10.8
5/8	11	11.95	80	35.8	12	4	13.6
3/4	10	13.95	90	41.9	14	4	16.6

ID

ID

● 196109	
● 196110	
● 196111	● 196118
● 196112	● 196119
● 196113	● 196120
● 196114	● 196121
● 196115	● 196122
	● 196123
	● 196124

Ø" D <sub>1</sub> UNF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm		
10	32	3.6	48	8.3	6	3	4.05
1/4	28	4.8	54	14.1	6	3	5.5
5/16	24	5.95	54	17.5	6	3	6.9
3/8	24	7.1	64	20.6	8	4	8.5
7/16	20	7.95	64	24.8	8	4	9.8
1/2	20	9.95	72	27.3	10	4	11.4
5/8	18	11.95	80	34.6	12	4	14.5
3/4	16	13.95	90	40.5	14	4	17.5

ID

ID

● 196125	
● 196126	● 196133
● 196127	● 196134
● 196128	● 196135
● 196129	● 196136
● 196130	● 196137
	● 196138
	● 196139

# GFS

GFS6610



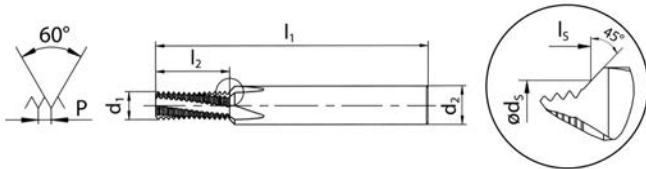
GFS6610VS



GFS6660



GFS6660VS



GFS6610



GFS6610VS



GFS6660



GFS6660VS



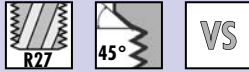
Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm			ID	ID	ID	ID
2	0.4	1.5	48	3.4	3.7	2.1	6	2	1.6	* 135331	* 135332		
2.5	0.45	1.9	48	4.3	4.6	2.6	6	3	2.05	* 155441	* 155443		
3	0.5	2.3	48	5.3	5.7	3.1	6	3	2.5	● 135333	● 135334		
3.5	0.6	2.7	48	5.7	6.2	3.6	6	3	2.9	* 155442	* 155444		
4	0.7	3	48	7.4	7.9	4.1	6	3	3.3	● 135335	● 135336		
5	0.8	3.8	54	9.2	9.9	5.1	6	3	4.2	● 135337	● 135338		
6	1	4.5	62	10.5	11.4	6.2	8	3	5	● 135339	● 116175		
8	1.25	5.95	74	13.1	14.3	8.2	10	3	6.8			● 135340	● 116172
10	1.5	7.95	80	17.3	18.4	10.3	12	4	8.5			● 135341	● 116173
12	1.75	9.95	90	20.1	21.3	12.3	14	4	10.2			* 135342	* 116174
14	2	10.8	102	25	26.8	14.4	16	4	12			* 135343	* 135344
16	2	12.8	102	27	28.8	16.4	18	4	14			* 135345	* 135346
18	2.5	13.95	125	33.8	36	18.5	25	4	15.5			* 135347	* 135348
20					37	20.5			17.5				

## GFS

GFS6615



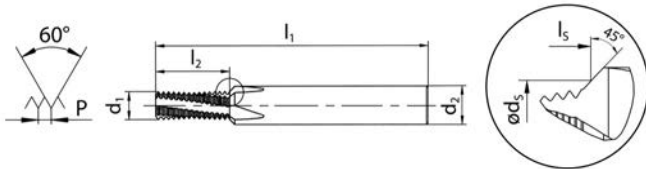
GFS6615VS



GFS6665



GFS6665VS



GFS6615



GFS6615VS



GFS6665



GFS6665VS



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>s</sub> mm	d <sub>min</sub>	d <sub>2</sub> mm			ID	ID	ID	ID
2	0.4	1.5	48	4.6	4.9	2.1	6	2	1.6	* 135349	* 135350		
2.5	0.45	1.9	48	5.6	6	2.6	6	3	2.05	* 155445	* 155447		
3	0.5	2.3	48	6.8	7.2	3.1	6	3	2.5	● 125661	● 135351		
3.5	0.6	2.7	48	7.5	8	3.6	6	3	2.9	* 155446	* 147108		
4	0.7	3	48	8.8	9.3	4.1	6	3	3.3	● 125946	● 135352		
5	0.8	3.8	54	10.8	11.5	5.1	6	3	4.2	● 126160	● 116178		
6	1	4.5	62	13.5	14.4	6.2	8	3	5	● 126352	● 135353	● 155524	● 155525
8	1.25	5.95	74	18.1	19.3	8.2	10	3	6.8			● 126587	● 116343
10	1.5	7.95	80	21.8	22.9	10.3	12	4	8.5			* 124837	* 135354
12	1.75	9.95	90	25.4	26.6	12.3	14	4	10.2			* 124973	* 135355
14	2	10.8	102	31	32.8	14.4	16	4	12			* 125067	* 135356
16	2	12.8	102	35	36.8	16.4	18	4	14			* 125116	* 135357
18	2.5	13.95	125	41.3	43.5	18.5	25	4	15.5				* 135358
20					44.5	20.5			17.5				



# GFS

GFS6616



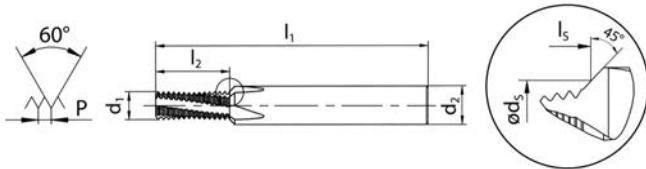
GFS6616VS



GFS6666



GFS6666VS



GFS6616



GFS6616VS



GFS6666



GFS6666VS



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm			ID	ID	ID	ID
3	0.5	2.3	48	8.3	8.7	3.1	6	3	2.5	● 155448	● 155452		
4	0.7	3	48	10.9	11.4	4.1	6	3	3.3	● 155449	● 155453		
5	0.8	3.8	54	13.2	13.9	5.1	6	3	4.2	● 155450	● 155454		
6	1	4.5	62	16.5	17.4	6.2	8	3	5	* 155451	* 155455	● 155456	● 155463
8	1.25	5.95	74	21.9	23	8.2	10	3	6.8			● 155457	● 155464
10	1.5	7.95	80	26.3	27.4	10.3	12	4	8.5			● 155458	● 155465
12	1.75	9.95	90	32.4	33.6	12.3	14	4	10.2			* 155459	* 155466
16	2	12.8	102	43	44.8	16.4	18	4	14			* 155461	* 155468

## GFS

GFS6610



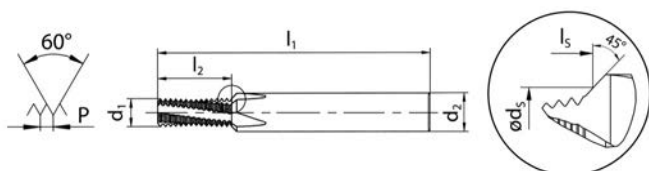
GFS6610VS



GFS6660



GFS6660VS



GFS6610



GFS6610VS



GFS6660



GFS6660VS



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm			ID	ID	ID	ID
4	0.5	3	48	7.3	7.8	4.1	6	3	3.5	* 135359	* 135360		
5	0.5	3.8	54	8.8	9.4	5.1	6	3	4.5	* 135361	* 135362		
6	0.5	4.5	62	9.8	10.6	6.2	8	3	5.5	* 135363	* 135364		
6	0.75	4.5	62	10.1	11	6.2	8	3	5.25	* 135365	* 135366		
8	0.5	5.95	74	12.8	13.9	8.2	10	3	7.5			* 135367	* 135368
8	0.75	5.95	74	13.1	14.3	8.2	10	3	7.25			* 135369	* 135370
8	1	5.95	74	13.5	14.6	8.2	10	3	7			* 135371	* 135372
10	1	7.95	80	16.5	17.7	10.3	12	4	9			* 135373	* 135374
10	1.25	7.95	80	16.9	18.1	10.3	12	4	8.8			* 135375	* 135376
12	1	9.95	90	19.5	20.7	12.3	14	4	11			* 135377	* 135378
12	1.5	9.95	90	20.3	21.4	12.3	14	4	10.5			* 135379	* 135380
14	1.5	10.8	102	23.3	25.1	14.4	16	4	12.5			* 135381	* 135382
16	1.5	12.8	102	26.3	28.1	16.4	18	4	14.5			* 135383	* 135384

## GFS

GFS6615



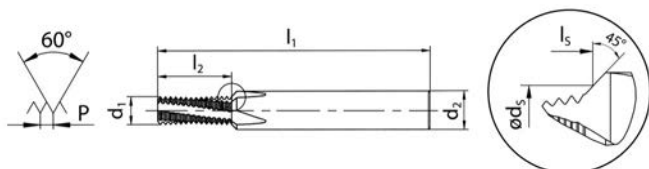
GFS6615VS



GFS6665



GFS6665VS



GFS6615



GFS6615VS



GFS6665



GFS6665VS



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>s</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm			ID	ID	ID	ID
4	0.5	3	48	8.8	9.3	4.1	6	3	3.5	● 135385	● 135386		
5	0.5	3.8	54	10.8	11.4	5.1	6	3	4.5	● 135387	● 135388		
6	0.5	4.5	62	12.8	13.6	6.2	8	3	5.5	★ 135389	★ 135390		
6	0.75	4.5	62	13.1	14	6.2	8	3	5.25	★ 135391	★ 135392		
8	0.5	5.95	74	17.8	18.9	8.2	10	3	7.5			★ 135393	★ 135394
8	0.75	5.95	74	16.9	18	8.2	10	3	7.25			● 135395	● 135396
8	1	5.95	74	17.5	18.6	8.2	10	3	7			★ 135397	★ 135398
10	1	7.95	80	21.5	22.7	10.3	12	4	9			★ 135399	★ 135400
10	1.25	7.95	80	21.9	23.1	10.3	12	4	8.8			★ 135401	★ 135402
12	1	9.95	90	25.5	26.7	12.3	14	4	11			★ 135403	★ 135404
12	1.5	9.95	90	26.3	27.4	12.3	14	4	10.5			★ 135405	★ 135406
14	1.5	10.8	102	30.8	32.6	14.4	16	4	12.5			★ 135407	★ 135408
16	1.5	12.8	102	33.8	35.6	16.4	18	4	14.5			● 135409	● 135410

## GFS

GFS6610



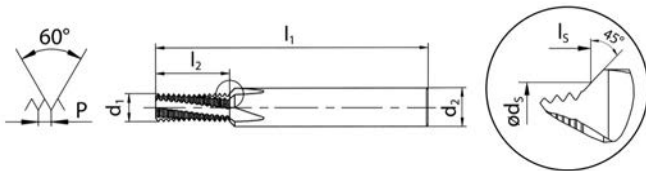
GFS6610VS



GFS6660



GFS6660VS



GFS6610



GFS6610VS





GFS6660



GFS6660VS



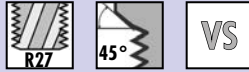
$\emptyset''$ UNC	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_1$ mm	$d_2$ mm			ID	ID	ID	ID
12	24	4.1	54	10.1	10.8	5.6	6	3	4.4	* 135422	* 135423		
1/4	20	4.8	62	12.1	12.9	6.5	8	3	5.1	* 135424	* 135425	* 155470	* 155473
5/16	18	5.95	74	14.8	15.9	8.1	10	3	6.5	* 135426	* 135427	* 155471	* 155474
3/8	16	7.1	80	16.7	18	9.8	12	4	8	* 135428	* 135429	* 155472	* 155475
7/16	14	7.95	80	19.1	20.8	11.4	12	4	9.3			* 135430	* 135431
1/2	13	9.95	90	22.5	24	13	14	4	10.8			* 135432	* 135433
9/16	12	10.8	102	24.4	26.2	14.6	16	4	12.2			* 135434	* 135435
5/8	11	11.9	102	26.5	28.8	16.3	18	4	13.6			* 135436	* 135437

## GFS

GFS6615



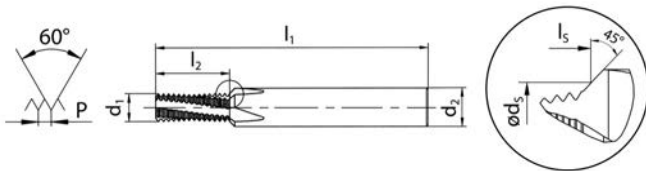
GFS6615VS



GFS6665



GFS6665VS



GFS6615



GFS6615VS



GFS6665



GFS6665VS



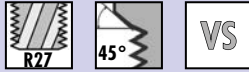
$\emptyset''$ D <sub>1</sub> UNC	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm			ID	ID	ID	ID
10	24	3.6	54	12.2	12.8	4.9	6	3	3.8	* 135438	* 135439		
12	24	4.1	54	13.2	14	5.6	6	3	4.4	* 135440	* 135441		
1/4	20	4.8	62	14.6	15.5	6.5	8	3	5.1	* 135442	* 135443	* 155476	* 155479
5/16	18	5.95	74	17.6	18.7	8.1	10	3	6.5	* 135444	* 135445	* 155477	* 155480
3/8	16	7.1	80	21.5	22.8	9.8	12	4	8	* 135446	* 135447	* 155478	* 155481
7/16	14	7.95	80	24.5	26.2	11.4	12	4	9.3			* 135448	* 135449
1/2	13	9.95	90	28.4	29.9	13	14	4	10.8			* 135450	* 135451
9/16	12	10.8	102	32.8	34.7	14.6	16	4	12.2			* 135452	* 135453
5/8	11	11.9	102	35.8	38	16.3	18	4	13.6			* 135454	* 135455

## GFS

GFS6610



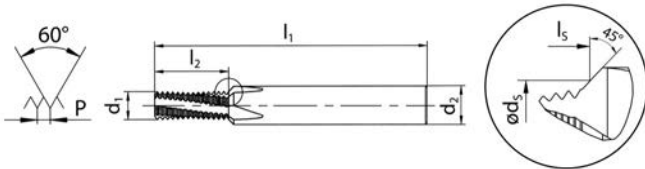
GFS6610VS



GFS6660



GFS6660VS



GFS6610



GFS6610VS





GFS6660



GFS6660VS



$\emptyset'' D_1$ UNF	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_3$ mm	$d_2$ mm			ID	ID	ID	ID
12	28	4.1	54	9.5	10.3	5.6	6	3	4.6	* 135458	* 135459		
1/4	28	4.8	62	11.3	12.2	6.5	8	3	5.5	* 135460	* 135461	* 155482	* 155485
5/16	24	5.95	74	13.2	14.3	8.1	10	3	6.9	* 135462	* 135463	* 155483	* 155486
3/8	24	7.1	80	16.4	17.7	9.8	12	4	8.5	* 135464	* 135465	* 155484	* 155487
1/2	20	9.95	90	21	22.5	13	14	4	11.4			* 135468	* 135469
5/8	18	11.9	102	26.1	28.3	16.3	18	4	14.5			* 135472	* 135473

# GFS

GFS6615



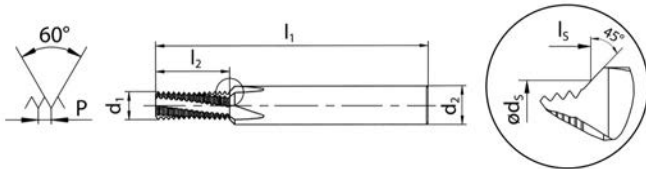
GFS6615VS



GFS6665



GFS6665VS



GFS6615



GFS6615VS



GFS6665



GFS6665VS



$\emptyset'' D_1$ UNF	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_1$ mm	$d_2$ mm			ID	ID	ID	ID
10	32	3.6	54	11.5	12.2	4.9	6	3	4.05	● 128660	● 135474		
12	28	4.1	54	12.3	13	5.6	6	3	4.6	* 135475	* 135476		
1/4	28	4.8	62	14.1	14.9	6.5	8	3	5.5	● 128578	● 135477	* 155488	* 155491
5/16	24	5.95	74	17.5	18.5	8.1	10	3	6.9	* 135478	* 135479	* 155489	* 155492
3/8	24	7.1	80	20.6	22	9.8	12	4	8.5	* 135480	* 135481	* 155490	* 155493
7/16	20	7.95	80	24.8	26.5	11.4	12	4	9.8			* 135482	* 135483
1/2	20	9.95	90	27.3	28.8	13	14	4	11.4			* 135484	* 135485
5/8	18	11.9	102	34.6	36.8	16.3	18	4	14.5			* 135488	* 135489



# G

## DIN EN ISO 228 (BSP)

VHM  
CAR



HB  
HE sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

# GFS

GFS6660



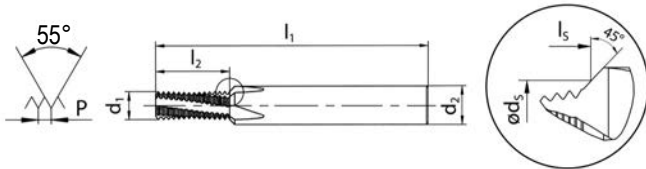
GFS6660VS



GFS6665



GFS6665VS



GFS6660



GFS6660VS



GFS6665



GFS6665VS



$\frac{\text{Ø}''}{G} D_1$	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$l_s$ mm	$d_s$ mm	$d_2$ mm		
1/4	19	9.95	90	22.1	23.8	13.5	14	4	11.6
3/8	19	12.8	102	27.4	29.6	17.1	18	4	15.2

ID

ID

\* 135414

\* 135415

\* 135416

$\frac{\text{Ø}''}{G} D_1$	P TPI	$d_1$ mm	$l_1$ mm	$l_2$ mm	$l_s$ mm	$d_s$ mm	$d_2$ mm		
1/8	28	7.95	80	21.3	22.3	10	12	4	8.75
1/4	19	9.95	90	28.7	30.5	13.5	14	4	11.6
3/8	19	12.8	102	35.4	37.6	17.1	18	4	15.2

ID

ID

\* 119349

\* 135417

\* 119298

\* 135418

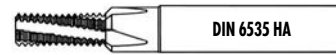
\* 119680

\* 135419

# NPT, NPTF

ASME B1.20.1  
ANSI B1.20.3

VHM  
CAR



HB  
HE

sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

## GFS

GFS6660

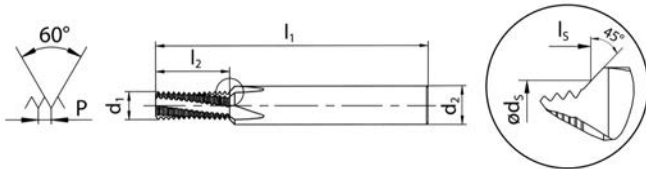
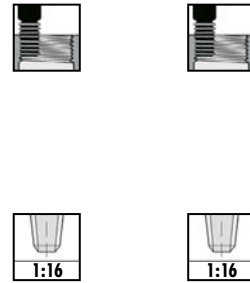


GFS6660VS



GFS6660

GFS6660VS

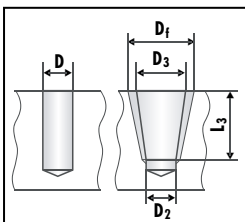


Ø" D <sub>1</sub> NPT	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm	♣
1/4	18	9.95	80	14.8	16.4	14	16	4
3/8	18	12.5	80	14.8	16.9	17.6	18	4

ID	ID
* 126899	* 135491
* 126928	

Ø" D <sub>1</sub> NPTF	P TPI	d <sub>1</sub> mm	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	d <sub>2</sub> mm	♣
1/8	27	7.3	70	9.9	11.2	10.6	12	4
1/4	18	9.95	80	14.8	16.4	14	16	4
3/8	18	12.5	80	14.8	16.9	17.6	18	4

ID	ID
* 135493	* 135494
* 135495	* 135496
* 135497	* 135498



Ø" D <sub>1</sub>	Avant-trou Preforo			
	D	D <sub>2</sub>	NPT NPTF D <sub>3</sub> (+0.05)	
1/8	8.5	8.3	8.74	8.76
1/4	11.0	10.8	11.36	11.40
3/8	14.5	14.2	14.80	14.84

Fraisage Fresatura	
D <sub>f</sub>	L <sub>3</sub>
9.81	6.92
12.99	10.02
16.41	10.33



## GFM

GFM6260

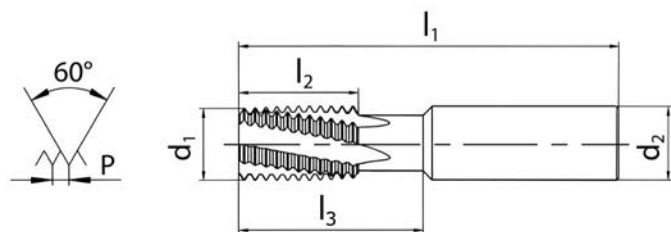


GFM6260VS



GFM6260

GFM6260VS



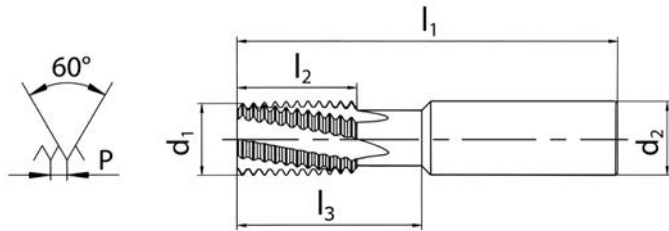
d <sub>1</sub> mm	P mm	∅ D <sub>1</sub> ≥ M, MF	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	✎	ID	ID
8	0.5	10	64	16	16	8	4	● 116450	● 135260
8	0.75	10	64	15.8	16	8	4	● 116340	● 135261
10	0.75	14	70	15.8	26	10	4	★ 116128	★ 135262
10	1	14	70	16	26	10	4	● 118657	● 135263
10	1.25	14	70	16.3	26	10	4	★ 118659	★ 135264
10	1.5	14	70	16.5	26	10	4	● 118661	● 135265
12	0.5	18	80	20	32	12	4	★ 116129	★ 135214
12	0.75	18	80	20.3	32	12	4	● 155526	● 155527
12	1	18	80	20	32	12	4	● 118664	● 135007
12	1.5	18	80	21	32	12	4	● 118669	● 135181
12	2	18	80	20	32	12	4	● 118673	● 135269
16	1	24	90	25	42	16	4	● 118680	● 135270
16	1.5	24	90	25.5	42	16	4	● 118682	● 116017
16	2	24	90	26	42	16	4	● 118684	● 135271
16	2.5	24	90	25	42	16	4	● 118689	● 135272
16	3	24	90	27	42	16	4	● 158760	● 150564
20	1	30	105	33	52	20	5	★ 135273	★ 135274
20	1.5	30	105	33	52	20	5	● 118694	● 135275
20	2	30	105	34	52	20	5	● 116338	● 135276
20	3	30	105	33	52	20	5	★ 118699	★ 135279
20	3.5	30	105	35	52	20	5	● 144195	● 144065

## GFM

GFM6260

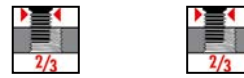


GFM6260VS

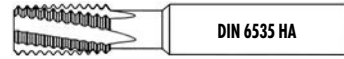
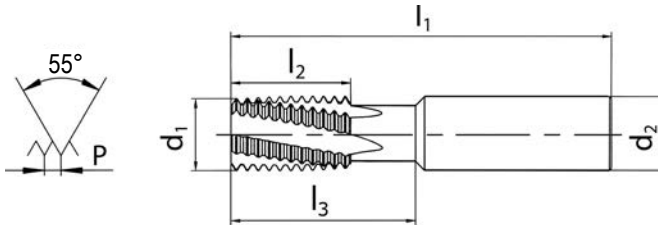
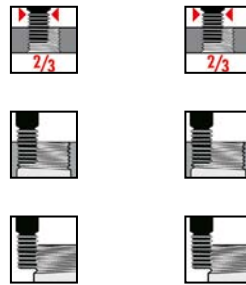


GFM6260

GFM6260VS



d <sub>1</sub> mm	P TPI	Ø <sup>H</sup> D <sub>1</sub> ≥ UN	l <sub>1</sub> mm	l <sub>2</sub> mm	l <sub>3</sub> mm	d <sub>2</sub> mm	⌘	ID	ID
10	24	1/2	70	15.9	26	10	4	* 135288	* 135289
12	24	3/4	80	20.1	32	12	4	* 135290	* 135291
12	20	3/4	80	20.3	32	12	4	* 135292	* 135293
12	18	3/4	80	19.8	32	12	4	* 135294	* 135295
12	16	3/4	80	20.6	32	12	4	● 135296	● 135297
12	10	3/4	80	20.3	32	12	4	* 150963	* 155494
16	24	1	90	25.4	42	16	4	* 135298	* 135299
16	20	1	90	25.4	42	16	4	* 135300	* 135301
16	18	1	90	25.4	42	16	4	* 135302	* 135303
16	16	1	90	25.4	42	16	4	* 135304	* 135305
16	14	1	90	25.4	42	16	4	● 135306	● 135307
16	12	1	90	25.4	42	16	4	● 135308	● 135309
16	9	1	90	25.4	42	16	4	* 150964	* 155495
16	8	1	90	25.4	42	16	4	* 150965	* 155496
20	24	1 1/4	105	32.8	52	20	5	* 135310	* 135311
20	20	1 1/4	105	33	52	20	5	* 135312	* 135313
20	18	1 1/4	105	32.5	52	20	5	* 135314	* 135315
20	16	1 1/4	105	33.4	52	20	5	* 118697	* 135316
20	14	1 1/4	105	32.7	52	20	5	* 135317	* 135318
20	12	1 1/4	105	31.8	52	20	5	* 135319	* 135320
20	8	1 1/4	105	31.8	52	20	5	* 135321	* 135322
20	7	1 1/4	105	32.7	52	20	5	* 150962	* 155497

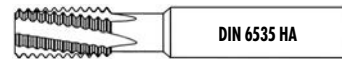
**G****DIN EN ISO 228 (BSP)****VHM  
CAR****HB  
HE** sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido**GFM****GFM6260****GFM6260VS****GFM6260****GFM6260VS**

$d_1$ mm	P TPI	$\frac{\theta''}{G}$ $D_1$	$l_1$ mm	$l_2$ mm	$l_3$ mm	$d_2$ mm		ID	ID
10	19	1/4-3/8	70	16	26	10	4	● 118655	● 135280
16	14	1/2-7/8	90	25.4	42	16	4	● 118678	● 135281
20	11	$\geq 1$	105	32.3	52	20	5	● 118691	● 135282

# NPT, NPTF

ASME B1.20.1  
ANSI B1.20.3

VHM  
CAR



HB  
HE

sur demande  
auf Anfrage  
on request  
su richiesta  
sobre pedido

## GFM

GFM6260

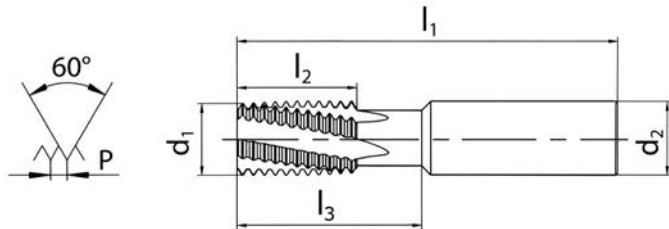


GFM6260VS



GFM6260

GFM6260VS



d <sub>1</sub> mm	P TPI	Ø" D <sub>1</sub> ≥ NPT	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	⌘
14.5	14	1/2	90	19.1	16	4
18.5	11.5	1	90	23.2	20	5

ID

ID

- 135323
- 135325

- 135324
- 135326

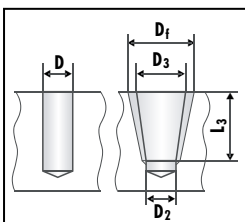
d <sub>1</sub> mm	P TPI	Ø" D <sub>1</sub> ≥ NPTF	l <sub>1</sub> mm	l <sub>2</sub> mm	d <sub>2</sub> mm	⌘
14.5	14	1/2	90	19.1	16	4
18.5	11.5	1	90	23.2	20	5

ID

ID

- \* 135327
- \* 135329

- \* 135328
- \* 135330



Ø" D <sub>1</sub>	Avant-trou Preforo			
	D	D <sub>2</sub>	NPT NPTF D <sub>3</sub> (+0.05)	
1/2	17.9	17.5	18.32	18.33
3/4	23.2	22.8	23.67	23.68
1	29.0	28.6	29.69	29.72
1 1/4	37.7	37.3	38.45	38.48
1 1/2	44.0	43.5	44.52	44.55
2	56.0	55.5	56.56	56.59

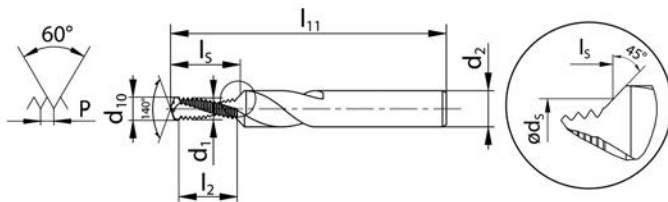
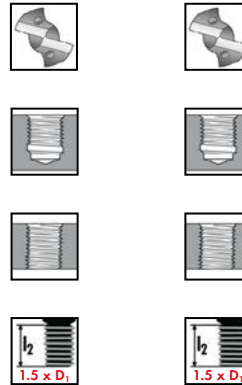
Fraisage Fresatura	
D <sub>f</sub>	L <sub>3</sub>
20.37	13.57
25.69	14.05
32.18	16.79
40.90	17.30
49.67	17.30
58.99	17.70




## BGF

**BGF6760**

**BGF6760VS**

**BGF6760**
**BGF6760VS**


$\emptyset D_1$ M	P mm	$d_1$ mm	$d_{10}$ mm	$l_{11}$ mm	$l_2$ mm	$l_3$ mm	$d_3$ mm	$d_2$ mm		ID	ID
4	0.7	3.1	3.3	48	5.6	7.4	4.1	6	2	* 153400	* 153415
5	0.8	4	4.2	54	7.2	9.4	5.1	6	2	* 153401	* 153416
6	1	4.75	5	62	9	11.7	6.2	8	2	* 153402	* 153417
8	1.25	6.5	6.75	74	11.2	14.6	8.2	10	2	* 151911	* 153418
10	1.5	8.25	8.5	80	15	19.1	10.3	12	2	* 153403	* 151442
12	1.75	9.95	10.25	90	17.4	22.1	12.3	14	2	* 153404	* 153419
14	2	11.6	12	102	19.9	25.1	14.4	16	2	* 153405	* 153420
16	2	13.6	14	102	23.9	29.5	16.4	18	2	* 153406	* 153421



# BGF

**BGF6765**



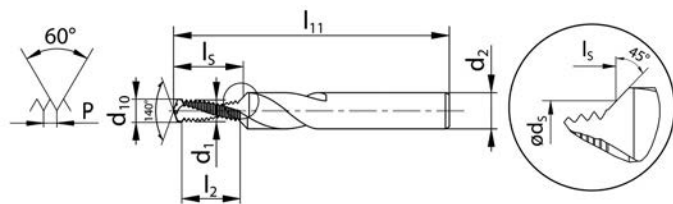
**BGF6765VS**



**BGF6766**



**BGF6766VS**

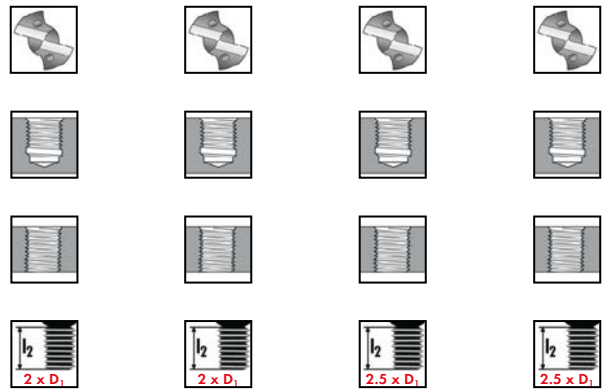


**BGF6765**

**BGF6765VS**

**BGF6766**

**BGF6766VS**



Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	d <sub>10</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l mm	d <sub>s</sub> mm	d <sub>2</sub> mm	
4	0.7	3.1	3.3	48	7.7	9.5	4.1	6	2
5	0.8	4	4.2	54	9.6	11.8	5.1	6	2
6	1	4.75	5	62	12	14.7	6.2	8	2
8	1.25	6.5	6.75	74	15	18.4	8.2	10	2
10	1.5	8.25	8.5	80	19.4	23.6	10.3	12	2
12	1.75	9.95	10.25	90	22.7	27.3	12.3	14	2
14	2	11.6	12	102	27.9	33.1	14.4	16	2
16	2	13.6	14	102	31.9	37.5	16.4	18	2

ID	ID
* 153430	* 153442
* 151305	* 151306
* 150933	* 151776
* 153431	* 150588
* 153432	* 150589
* 153433	* 150927
* 153434	* 153443
* 153435	* 151324

Ø D <sub>1</sub> M	P mm	d <sub>1</sub> mm	d <sub>10</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l mm	d <sub>s</sub> mm	d <sub>2</sub> mm	
6	1	4.75	5	62	15	17.7	6.2	8	2
8	1.25	6.5	6.75	74	20	23.4	8.2	10	2
10	1.5	8.25	8.5	80	23.9	28.1	10.3	12	2
12	1.75	9.95	10.25	90	29.7	34.3	12.3	14	2
14	2	11.6	12	102	35.9	41.1	14.4	16	2
16	2	13.6	14	102	39.9	45.5	16.4	18	2

ID	ID
● 153451	● 153467
● 153452	● 153468
* 153453	* 153469
* 153454	* 153470
* 153455	* 153471
* 153456	* 153472

## BGF

BGF6865



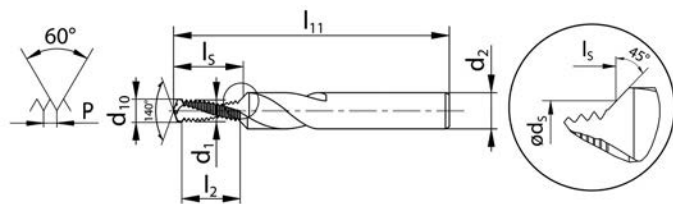
BGF6865VS



BGF6866



BGF6866VS



BGF6865



BGF6865VS



BGF6866



BGF6866VS



$\emptyset D_1$ M	P mm	$d_1$ mm	$d_{10}$ mm	$l_{11}$ mm	$l_2$ mm	$l_3$ mm	$d_3$ mm	$d_2$ mm	
6	1	4.75	5	62	12	14.7	6.2	8	3
8	1.25	6.5	6.75	74	15	18.4	8.2	10	3
10	1.5	8.25	8.5	80	19.4	23.6	10.3	12	3
12	1.75	9.95	10.25	90	22.7	27.3	12.3	14	3
14	2	11.6	12	102	27.9	33.1	14.4	16	3
16	2	13.6	14	102	31.9	37.5	16.4	18	3

ID	ID
* 153577	* 153589
* 153578	* 153590
* 153579	* 153591
* 153580	* 153592
* 153581	* 153593
* 153582	* 153594

$\emptyset D_1$ M	P mm	$d_1$ mm	$d_{10}$ mm	$l_{11}$ mm	$l_2$ mm	$l_3$ mm	$d_3$ mm	$d_2$ mm	
6	1	4.75	5	62	15	17.7	6.2	8	3
8	1.25	6.5	6.75	74	20	23.4	8.2	10	3
10	1.5	8.25	8.5	80	23.9	28.1	10.3	12	3
12	1.75	9.95	10.25	90	29.7	34.3	12.3	14	3
14	2	11.6	12	102	35.9	41.1	14.4	16	3
16	2	13.6	14	102	39.9	45.5	16.4	18	3

ID	ID
* 153601	* 153613
* 153602	* 153614
* 153603	* 153615
* 153604	* 153616
* 153605	* 153617
* 153606	* 153618



## BGF

BGF6760



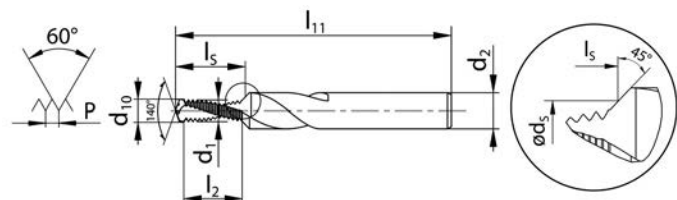
BGF6760VS



BGF6765



BGF6765VS

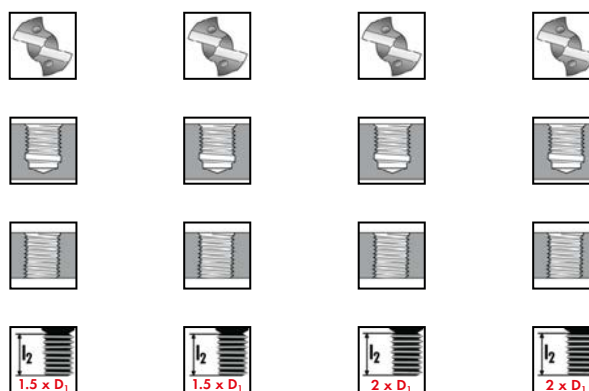


BGF6760

BGF6760VS

BGF6765

BGF6765VS



Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	d <sub>10</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	d <sub>5</sub> mm	d <sub>2</sub> mm	
6	0.75	5	5.25	62	9	11.4	6.2	8	2
8	1	6.75	7	74	12	15	8.2	10	2
10	1	8.75	9	80	15	18.5	10.3	12	2
12	1	10.7	11	90	18	21.9	12.3	14	2
12	1.5	10.2	10.5	90	17.9	22.5	12.3	14	2
14	1.5	12.1	12.5	102	20.9	26	14.4	16	2
16	1.5	14.1	14.5	102	23.9	29.4	16.4	18	2

ID

ID

Ø D <sub>1</sub> MF	P mm	d <sub>1</sub> mm	d <sub>10</sub> mm	l <sub>11</sub> mm	l <sub>2</sub> mm	l <sub>1</sub> mm	d <sub>5</sub> mm	d <sub>2</sub> mm	
6	0.75	5	5.25	62	12	14.4	6.2	8	2
8	1	6.75	7	74	16	19	8.2	10	2
10	1	8.75	9	80	20	23.5	10.3	12	2
12	1	10.7	11	90	24	27.9	12.3	14	2
12	1.5	10.2	10.5	90	23.9	28.5	12.3	14	2
14	1.5	12.1	12.5	102	26.9	32	14.4	16	2













ID









ID

* 153759	* 153780
* 153761	* 153782
* 153762	* 153783
* 153764	* 153785
* 153765	* 153786
* 153766	* 153787
* 153767	* 153788








* 153802	* 153824
* 153804	* 153826
* 153805	* 153827
* 153807	* 153829
* 153808	* 153830
* 153809	* 153831

**Répertoire - Tampons de filetage, jauges bagues de filetage**  
**Rubrica - Calibri a tampone e ad anello filettati**

Type Tipo		D5701-1	D5701-2	D5703		D5720	D5722	D5725
Caractéristiques Caratteristiche								
								
<b>M 6H / 6g</b> ISO DIN 13		138	138	138				
<b>M 6G / 6e</b> ISO DIN 13				138				
<b>M 6H / 6g LH</b> ISO DIN 13				138				
<b>MF 6H / 6g</b> ISO DIN 13		140-141	141	140-141				
<b>MF 6G / 6e</b> ISO DIN 13				140				
<b>MF 6H / 6g LH</b> ISO DIN 13				140				
<b>UNC</b> ASME B1.1		144		144				
<b>UNF</b> ASME B1.1		145		145				
<b>UNEF</b> ASME B1.1				145				
<b>NPT</b> ASME B1.20.1						147		
<b>NPTF</b> ANSI B1.20.3						147		
<b>G (BSP)</b> DIN EN ISO 228		146	146	146				
<b>PG</b> DIN 40430								146
<b>EG M</b> ISO DIN 8140				148				
<b>EG UNC</b> NASM 33537				148				
<b>EG UNF</b> NASM 33537				148				

D5704	D5714	D5721	D5723
			
			
139	139		
139	139		
139			
142-143	142-143		
142			
144	144		
145	145		
145	145		
		147	
		147	
146	146		
146			

## Pictogrammes - Simboli

	"Entre" "Passa"
	"N'entre pas" "Non passa"
	"Entre" et "N'entre pas" "Passa" e "Non passa"
	Tolérance 6H, "Entre" Tolleranza 6H, "Passa"
	Tolérance 6G, "Entre" et "N'entre pas" Tolleranza 6G, "Passa" e "Non passa"
	Tolérance 6g, "N'entre pas" Tolleranza 6g, "Non passa"
	Filetage à gauche Filettatura sinistra

*Jauges de filetage livrables du stock sans certificat de contrôle.*

*Sur demande, ces jauges peuvent être livrées avec certificat dans un bref délai.*

*Pour nouvelles jauges de filetage / insécurité de mesure U95.*

*Les jauges avec certificat sont livrées avec marquage du numéro d'identification figurant sur le certificat.*

I calibri filettati sono disponibili a magazzino senza certificato di prova.










Su richiesta, questi calibri possono essere consegnati con breve preavviso con un certificato di prova.

Per nuovi calibri filettati / incertezza della misura U95.

Tutti i calibri filettati certificati sono contrassegnate con il numero di identificazione del certificato corrispondente.








ISO DIN 13  
DIN ISO 1502










		D5701-1	D5701-2	D5703	D5703 LH	D5703	
D5701-1 M1 - M1.4 =  D5703 M1 - M1.4 = 							
					 		
Ø d <sub>1</sub> M	P mm	ID	ID	ID	ID	ID	
1	0.25			● 100242			
1.1	0.25			● 100243			
1.2	0.25			● 100244			
1.4	0.3			● 100245			
1.6	0.35			● 100246			
1.7	0.35			● 100247			
1.8	0.35			● 100248			
2	0.4			● 100278	● 105159	● 104982	
2.2	0.45			● 100280			
2.3	0.4			● 100281			
2.5	0.45			● 100283	● 105160	● 104979	
2.6	0.45			● 100285			
3	0.5			● 100310	● 104964	● 104976	
3.5	0.6			● 100312		● 104977	
4	0.7			● 100333	● 104966	● 104978	
4.5	0.75	* 100114					
5	0.8			● 100348	● 104967	● 104980	
6	1			● 100363	● 104968	● 104981	
7	1			● 100369	* 110186		
8	1.25			● 100373	● 104969	● 104983	
9	1.25			● 100375			
10	1.5			● 100253	● 104970	● 104984	
11	1.5			* 100256			
12	1.75			● 100261	● 104971	● 104985	
14	2	* 100045		● 100266		● 104986	
16	2			● 100271	● 104973	● 104987	
18	2.5	* 100055		● 100276		* 104988	
20	2.5	* 100068		● 100289	● 104975	● 104989	
22	2.5	* 100072		● 100293	* 110178		
24	3	* 100076		● 100297	● 110179		
27	3			● 100305			
30	3.5			● 100316			
33	3.5	* 100101		● 100322			
36	4	* 100107		● 100328			
39	4	* 100109		● 100330			
42	4.5		● 142843				
45	4.5		● 142844				
48	5		● 142845				
52	5		● 142846				
56	5.5		● 142847				




ISO DIN 13  
DIN ISO 1502


		D5704	D5704 LH	D5704	D5714	D5714	
D5704	M1 - M1.4 = <span style="border: 1px solid black; padding: 2px;">6h</span>						
D5714	M1 - M1.4 = <span style="border: 1px solid black; padding: 2px;">6h</span>						
		<span style="border: 1px solid black; padding: 2px;">6g</span>	<span style="border: 1px solid black; padding: 2px;">6g</span> <span style="border: 1px solid black; padding: 2px;">LH</span>	<span style="border: 1px solid black; padding: 2px;">6e</span>	<span style="border: 1px solid black; padding: 2px;">6g</span>	<span style="border: 1px solid black; padding: 2px;">6e</span>	
Ø d <sub>1</sub> M	P mm	ID	ID	ID	ID	ID	
1	0.25	● 100480			● 110419		
1.2	0.25	● 100481			● 110420		
1.4	0.3	● 100482			● 110421		
1.6	0.35	● 100483			● 110422		
1.7	0.35	● 100484			● 111439		
1.8	0.35	● 100485			● 110423		
2	0.4	● 100515	● 105006		● 100734		
2.2	0.45	● 100517			● 100735		
2.3	0.4	● 100518			● 100736		
2.5	0.45	● 100520			● 100737		
2.6	0.45	● 100522			● 100738		
3	0.5	● 100547	● 105001		● 100763		
3.5	0.6	● 100549	● 110302	* 110301	● 100765	* 142836	
4	0.7	● 100570	● 105003		● 100774		
5	0.8	● 100585	● 105004	* 104993	● 100778	* 143406	
6	1	● 100600	● 105005	* 104994	● 100781	* 135556	
7	1	● 100605		* 104995	● 100783		
8	1.25	● 100611	● 105007		● 100786		
9	1.25	● 100610			● 100788		
10	1.5	● 100490	● 105008		● 100711	* 142842	
11	1.50				* 100713		
12	1.75	● 100498	● 105009		● 100718		
14	2	● 100503	● 105010		● 100723		
16	2	● 100508	● 105011	* 105000	● 100728		
18	2.5	● 100513	● 105012		● 100733		
20	2.5	● 100526	● 105013		● 100742		
22	2.5	● 100530	● 110298		● 100746		
24	3	● 100534			● 100750		
27	3	● 100542			● 100758		
30	3.5	● 100553			● 100769		
33	3.5	* 100559			* 100770		
39	4				* 110440		
45	4.5				* 110448		
56	5.5	* 100595			* 110461		











		D5701-1	D5703	D5703 LH	D5703		
							
				 			
$\varnothing d_1$ MF	P mm	ID	ID	ID	ID		
2.5	0.35		● 100282				
3	0.35		● 100309				
4	0.35		● 100331				
4	0.5		● 100332				
5	0.5		● 100347	● 105016	● 105045		
6	0.5	* 100140	● 100361	● 110184			
6	0.75		● 100362		● 105046		
7	0.5		● 100367				
7	0.75	* 100147	● 100368				
8	0.5	* 100149	● 100370				
8	0.75		● 100371	● 105018	● 105047		
8	1	* 100151	● 100372	● 105019	● 105048		
9	1		● 100374				
10	0.5		● 100249				
10	0.75		● 100250				
10	1		● 100251	● 105020	● 105049		
10	1.25	* 100031	● 100252				
11	1	* 100034	● 100255				
12	0.75	* 100036	● 100257				
12	1		● 100258	● 105021	● 105050		
12	1.25		● 100259				
12	1.5		● 100260	● 105022			
14	1		● 100263	● 110171			
14	1.25		● 100264				
14	1.5		● 100265	● 105023	● 105052		
15	1		● 100267				
15	1.5		● 100268				
16	1		● 100269	● 110172			
16	1.5		● 100270	● 105024	● 105053		
17	1		● 100272				
18	1		● 100273				
18	1.5		● 100274	● 105025	● 105054		
18	2	* 100054	● 100275				
20	1	* 100065	● 100286				
20	1.5		● 100287	● 105026			
20	2	* 100067	● 100288		* 110176		
22	1		● 100290				
22	1.5		● 100291	● 110177			
22	2		● 100292				
24	1		● 100294				
24	1.5		● 100295				
24	2		● 100296				

		D5701-1	D5701-2	D5703			
$\varnothing d_1$ MF	P mm	ID	ID	ID			
25	1			● 100298			
25	1.5			● 100299			
25	2			● 100300			
26	1			● 100301			
26	1.5	* 100081		● 100302			
27	1.5	* 100082		● 100303			
27	2	* 100083		● 100304			
28	1			● 100306			
28	1.5	* 100086		● 100307			
28	2	* 100087		● 100308			
30	1	* 100092		● 100313			
30	1.5			● 100314			
30	2			● 100315			
32	1			● 100317			
32	1.5			● 100318			
32	2			● 100319			
33	1.5			● 100320			
33	2			● 100321			
35	1.5			● 100323			
36	1.5			● 100325			
36	2			● 100326			
36	3			● 100327			
38	1.5	* 100108		● 100329			
40	1.5			● 100336			
40	2			● 100337			
42	1.5	● 100117	● 142848				
42	2	● 100118	● 142849				
45	1.5	● 100120	● 110127				
45	2	● 100121	● 142851				
48	1.5	● 100123	● 123180				
48	2	● 100124	● 142853				
50	1.5	● 100128	● 142854				
50	2	● 100129	● 142855				
52	1.5	● 100130	● 123428				
52	2	● 100131	● 142857				
55	1.5		● 123468				
55	2	● 100134	● 142859				
56	1.5	● 100135	● 142860				
56	2	● 100136	● 142861				
58	1.5	● 100138	● 142862				
58	2	● 100139	● 142863				
60	1.5	● 100143	● 142864				
60	2	● 100144	● 142865				

		D5704	D5704 LH	D5714			
							
		<b>6g</b>	<b>6g</b>	<b>LH</b>	<b>6g</b>		
$\varnothing d_1$ MF	P mm	ID	ID	ID			
2.5	0.35	● 100519		● 110427			
3	0.35	● 100546		● 100762			
3.5	0.35	● 100548		● 100764			
4	0.35	● 100568		● 100772			
4	0.5	● 100569		● 100773			
4.5	0.5	● 100571		● 100775			
5	0.5	● 100584	● 105057	● 100777			
6	0.5	● 100598	● 110307	● 100779			
6	0.75	● 100599	● 105058	● 100780			
7	0.5	● 100603		● 110467			
7	0.75	● 100604		● 100782			
8	0.5	● 100606					
8	0.75	● 100607	* 105059	● 100784			
8	1	● 100608	● 105060	● 100785			
9	1	● 100609		● 100787			
10	0.5	● 100486		● 100707			
10	0.75	● 100487		● 100708			
10	1	● 100488	● 105061	● 100709			
10	1.25	● 100489		● 100710			
11	1	● 100492		● 100712			
12	0.75	● 100494		● 100714			
12	1	● 100495	● 105062	● 100715			
12	1.25	● 100496		● 100716			
12	1.5	● 100497	● 105063	● 100717			
13	1	● 100499		● 100719			
14	1	● 100500	● 110290	● 100720			
14	1.25	● 100501		● 100721			
14	1.5	● 100502	● 105064	● 100722			
15	1	● 100504		● 100724			
15	1.5	● 100505		● 100725			
16	1	● 100506	● 110292	● 100726			
16	1.5	● 100507	● 105065	● 100727			
17	1	● 100509		● 100729			
18	1	● 100510		● 100730			
18	1.5	● 100511	● 105066	● 100731			
20	1	● 100523	● 110295	● 100739			
20	1.5	● 100524	● 105067	● 100740			
20	2	● 100525		● 100741			
22	1	● 100527		● 100743			
22	1.5	● 100528		● 100744			
22	2	● 100529		● 100745			
24	1	● 100531		● 100747			
24	1.5	● 100532		● 100748			
24	2	● 100533					





		D5704	D5714				
							
		<b>6g</b>	<b>6g</b>				
$\varnothing d_1$ MF	P mm	ID	ID				
25	1	● 100535					
25	1.5	● 100536					
26	1	● 100538					
26	1.5	● 100539					
27	1.5	● 100540					
27	2	● 100541	* 100757				
28	1	● 100543					
28	1.5	● 100544	* 100760				
30	1	● 100550					
30	1.5	● 100551					
30	2	● 100552					
32	1	● 100554					
32	1.5	● 100555					
32	2	● 100556					
33	1.5	● 100557					
33	2	● 100558	* 110433				
35	1.5	● 100560					
36	1.5	● 100562					
36	2	● 100563					
36	3	● 100564					
38	1.5	● 100566					
40	1.5	● 100573					
42	1.5	● 100575					
42	2	● 100576					
45	1.5	● 100578					
45	2	● 100579					
48	1.5	● 100581	* 110449				
48	2	● 100582					
50	1.5	● 100586					
50	2	● 100587	* 110453				
52	1.5		* 110454				
52	2	● 100589					
55	1.5	● 100591					
55	2	● 100592	* 110458				
56	1.5	● 100593	* 110459				
56	2		* 110460				
58	1.5	● 100596					
58	2	● 100597	* 110463				
60	1.5	● 100601					
60	2	● 105014					

# UNC ASME B1.1 ANSI / ASME B1.2

		D5701-1	D5703	D5704	D5714		
							
							
Ø" d <sub>1</sub> UNC	P TPI	ID	ID	ID	ID		
1	64		● 100408	● 110347	● 110473		
2	56		● 100414	● 110353	● 110479		
3	48		● 100416				
4	40	* 110080	● 110224	● 110357	● 110483		
5	40		● 100420				
6	32	* 110084	● 100423	● 110361	● 110487		
8	32		● 100426	● 110364	● 110490		
10	24	* 110074	● 100412	● 110351	● 110477		
12	24		● 100413				
1/4	20		● 100410	● 110349	● 110475		
5/16	18	* 110082	● 100421	● 110359	● 110485		
3/8	16	* 110079	● 100418	● 110356	● 110482		
7/16	14	* 110085	● 100424	● 110362	● 110488		
1/2	13	* 110071	● 100409	● 110348	● 110474		
9/16	12		● 100427	● 110365	* 110491		
5/8	11		● 100422	● 110360			
3/4	10	* 110078	● 100417	● 110355	* 110481		
7/8	9		● 100425	● 110363	* 110489		
1	8	* 110073	● 100411	● 110350	* 110476		
1 1/8	7	* 110068	● 100405	* 110345	* 110471		
1 1/4	7	* 110067	● 100404	* 110344	* 110470		
1 3/8	6	* 110069	● 100407	* 110346	* 110472		
1 1/2	6	* 110066	● 100403	* 110343	* 110469		













# UNF, UNEF

ASME B1.1  
ANSI / ASME B1.2

		D5701-1	D5703	D5704	D5714		
							
		<b>2B</b>	<b>2B</b>	<b>2A</b>	<b>2A</b>		
Ø" d <sub>1</sub> UNF	P TPI	ID	ID	ID	ID		
0	80		● 110246				
1	72		● 110251	● 110383	● 110508		
2	64		● 110256	● 110389	● 110514		
3	56		● 110257	● 110390	● 110515		
4	48		● 110260	● 110393	● 110518		
5	44	* 110116					
6	40		● 110264				
8	36	* 110122	● 110267				
10	32		● 110254	● 110387	● 110512		
12	28		● 110255	● 110388	● 110513		
1/4	28	* 110107	● 110006	● 110385	● 110510		
5/16	24	* 110117	● 110262	● 110395	● 110520		
3/8	24	* 110114	● 110259	● 110392	● 110517		
7/16	20	* 110120	● 110265	● 110398	● 111440		
1/2	20	* 110106	● 110252	● 110384	● 110509		
9/16	18		● 110268	● 110401			
5/8	18		● 110263	● 110396			
3/4	16		● 110258	● 110391			
7/8	14		● 110266	● 110399			
1	12		● 128646	● 110386			
1 1/8	12	* 110103	● 110249	● 110381			
1 1/4	12		● 110248	● 110380	* 110505		
1 3/8	12	* 110104	● 110250		* 110507		
1 1/2	12		● 110247	● 110379			
Ø" d <sub>1</sub> UNEF	P TPI	ID	ID	ID			
12	32	● 110238					
1/4	32	● 110236	● 110368	● 110493			
5/16	32	● 110241	● 110373	● 110498			
3/8	32	● 110240	● 110372	● 110497			
7/16	28	● 110243	● 110375	● 110500			
1/2	28	● 110235	● 110367	● 110492			
9/16	24	● 110245	● 110377	● 110502			
5/8	24	● 110242	● 110374	● 110499			
3/4	20	● 110239	● 110371	● 110496			
7/8	20	● 110244		* 110501			
1	20	● 110253	● 110369	● 110494			

**G** DIN EN ISO 228 (BSP)  
DIN EN ISO 228-2



**PG** DIN 40430  
DIN 40431

		D5701-1	D5701-2	D5703	D5704	D5714	D5725
							
							
$\varnothing$ d <sub>1</sub> G	P TPI	ID	ID	ID	ID	ID	ID
1/8	28	* 110044		● 110009	● 110277	● 110408	
1/4	19			● 110003	● 110276	● 110407	
3/8	19	* 110052		● 110162	● 110284	● 110415	
1/2	14			● 110001	● 110275	● 110406	
5/8	14			● 110164	● 110286	● 110417	
3/4	14			● 110161	● 110283	● 110414	
7/8	14	* 110054		● 110165			
1	11			● 110156	● 110278	● 110409	
1 1/8	11			● 110154		* 110404	
1 1/4	11	● 110041	● 119459		● 110272		
1 1/2	11	● 110040	● 119429		● 110271		
1 3/4	11	● 110043	● 142868		● 110274	* 110405	
2	11	● 110050	● 110126		● 110282		
2 1/4	11					* 110411	
2 1/2	11		* 110125				
2 3/4	11					* 110412	
$\varnothing$ d <sub>1</sub> PG	P TPI	ID				ID	ID
7	20					● 110216	
9	18					● 110217	
11	18					● 110205	
13.5	18					● 110209	
16	18				* 110330	● 110210	
21	16				* 110331	● 110211	
29	16					● 110212	



# NPT ASME B1.20.1 ASME B1.20.1

# NPTF ANSI B1.20.3 ASA B2.2





		D5720	D5721				
							
							
$\varnothing'' d_1$ NPT	P TPI	ID	ID				
1/16	27	● 110190	● 110313				
1/8	27	● 110193	● 110316				
1/4	18	● 110192	● 110315				
3/8	18	● 110197	● 110320				
1/2	14	● 110191	● 110314				
3/4	14	● 110196	● 110319				
1	11.5	● 110194	● 110317				
1 1/4	11.5	● 110189	● 110312				
1 1/2	11.5	● 110188	● 110311				
2	11.5	● 110195	● 110318				
$\varnothing'' d_1$ NPTF	P TPI	ID	ID				
1/8	27	● 110201					
1/4	18	● 110200	* 110323				
3/8	18	● 110204					
1/2	14	● 110199	* 110322				
3/4	14	● 110203	* 110326				
1	11.5	● 110202	* 110325				

# EG M

ISO DIN 8140-2  
DIN ISO 1502

# EG UNC, EG UNF

NASM 33537  
~ ISO 1502

		D5703	D5703	D5703				
								
								
$\varnothing d_1$ EG M	P mm	ID						
2.5	0.45	● 110132						
3	0.5	● 110133						
4	0.7	● 110134						
5	0.8	● 110135						
6	1	● 110136						
8	1.25	● 110137						
10	1.5	● 110128						
12	1.75	● 110129						
16	2	● 110131						
$\varnothing'' d_1$ EG UNC	P TPI	ID						
4	40	● 170252						
6	32	● 170253						
8	32	● 170254						
10	24	● 170255						
1/4	20	● 170256						
5/16	18	● 170257						
3/8	16	● 170258						
$\varnothing'' d_1$ EG UNF	P TPI	ID						
6	40	● 170259						
8	36	● 170260						
10	32	● 161020						
1/4	28	● 151790						
5/16	24	● 170261						
3/8	24	● 160134						

# **BEAUCOUP PLUS À DÉCOUVRIR**

**DANS NOTRE NOUVEAU CATALOGUE  
POUR DES OUTILS DE FILETAGES,  
DISPONIBLE DÈS FIN 2020.**



# **MOLTO DI PIÙ DA SCOPRIRE**

**NEL NOSTRO NUOVO CATALOGO DI UTENSILI PER FILETTARE,  
DISPONIBILE A PARTIRE DALLA FINE DEL 2020.**



# JAUGES DE FILETAGE NANO — CALIBRI FILETTATI PER FILETTATURA NANO

## JAUGES TAMPONS DE FILETAGE — CALIBRI A TAMPONE FILETTATI



### MÉTROLOGIE — METROLOGIA

< 2.74 mm

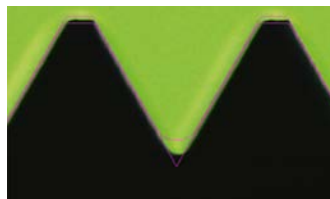


### PRODUCTION — PRODUZIONE



#### UTILISATION

Le meulage du 1er filet non plein et de la face avant de la jauge garantit un engagement optimal dans le filetage, primordial pour assurer une mesure correcte. Cette entrée permet à la jauge de contrôler le filetage à une profondeur maximale.



#### MAÎTRISE DU PROFIL

Notre savoir-faire dans le domaine de la rectification nous garantit une parfaite maîtrise des tolérances de la forme du profil et des états de surface parfaits.



#### JAUGE BAGUE NO-GO

Le dégagement du Ø extérieur de nos jauges bagues NO-GO assure une vérification parfaite des flancs de vis en éliminant le risque d'un contrôle faussé par un blocage sur le diamètre extérieur de la jauge.



#### SYSTÈME MODULAIRE

Une vis de raccord permet d'assembler la jauge GO avec la partie NO-GO selon votre besoin. La boîte rigide sécurise les jauges pendant le transport et les déplacements. Son intérieur moulé protège le produit des chocs et des salissures.

## TAMPONS RAPPORTEURS — TAMPONI DI CONTROLLO

*Le tampon rapporteur NO-GO sera le garde-fou de la bague.*

Il tampone di controllo a NO-GO è il dispositivo di controllo per il nuovo calibro ad anello.

*Le tampon rapporteur GO servira à contrôler la qualité de votre bague.*

Il tampone di controllo GO viene utilizzato per controllare la qualità del vostro calibro ad anello.



*Le témoin d'usure WEAR prolongera la durée de vie de votre bague jusqu'à un certain seuil de tolérance.*

Il tampone master WEAR prolunga la vita utile del vostro tampone ad anello fino ad un certo limite di tolleranza.

### UTILIZZAZIONE

Il fatto che il giro iniziale della filettatura della vite e anche la punta del calibro siano stati rettificati in piano assicura che l'utensile si inserisca in modo ottimale nella filettatura, il che è essenziale per garantire una misurazione corretta. Ciò consente al calibro di controllare il filetto alla sua massima profondità.

### CONTROLLO DEL PROFILO

La nostra esperienza nel campo della rettifica ci assicura un perfetto controllo delle tolleranze per la forma del profilo e per la struttura delle superfici.

### CALIBRO AD ANELLO NO-GO

Il profilo sul diametro esterno dei nostri tamponi ad anello NO-GO garantisce un controllo ottimale dei lati della vite, eliminando il rischio di una verifica errata causata da un blocco del diametro esterno del calibro.

### SISTEMA MODULARE

Una vite di accoppiamento consente di collegare il calibro GO alla sezione NO-GO come richiesto. La scatola rigida protegge i calibri durante il trasporto. Il suo interno stampato mantiene il prodotto pulito e lo protegge dagli urti.

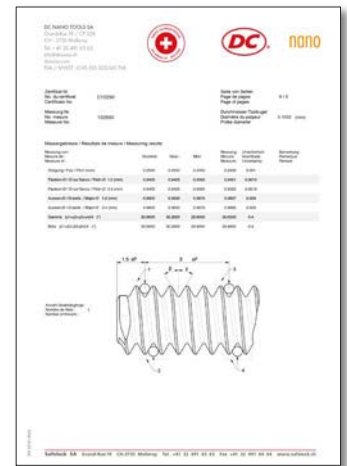
# LE CERTIFICAT DE MESURE SCS

Un certificat est une confirmation écrite attestant de la qualité de l'équipement métrologique de l'entreprise. DC Nano Tools SA (Accréditation SCS 0143), membre du Groupe DC SWISS, vous propose le contrôle et l'éta-lonnage des jauges filetées selon la norme internationale standardisée ISO 17025.

Ce service payant est proposé dans les dimensions allant du diamètre 0.1 à 3.0 mm pour la mesure du diamètre sur flanc et de 0.1 à 3.5 mm pour le diamètre extérieur.

Toutes les jauges tampons sont certifiées SCS.

Accrédité ISO 17025/2005 © DC Nano Tools SA



# CERTIFICATO DI MISURA SCS

Un certificato è una conferma scritta della qualità delle apparecchiature metrologiche di un'azienda. DC NANO TOOLS SA (accreditamento SCS 0143), membro del gruppo DC SWISS, può ispezionare e calibrare per voi i tamponi di controllo delle filettature secondo la norma internazionale ISO 17025.

Questo servizio a pagamento è disponibile per diametri di passo da 0.1 a 3.0 mm e per diametri esterni da 0.1 a 3.5 mm.

Tutti i tamponi filettati sono certificati SCS.

Accreditati ISO 17025/2005 © DC NANO TOOLS SA

## TÉLÉCHARGEZ VOTRE ATTESTATION DE CONFORMITÉ

Désormais, retrouvez votre attestation de conformité n'importe où directement depuis votre téléphone. Il vous suffit de scanner le QR Code de la carte se trouvant à l'intérieur de la boîte et de télécharger le PDF joint.

L'attestation de conformité accompagnant chaque boîte confirme que la production a scrupuleusement suivi le processus de contrôle au terme de la fabrication.

Contrôle qualité DC SWISS SA

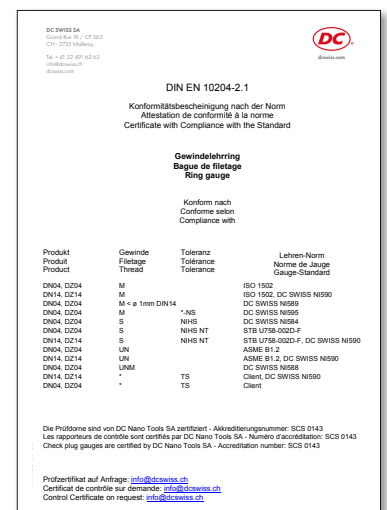


## SCARICA LA VOSTRA CONFERMA DI CONFORMITÀ

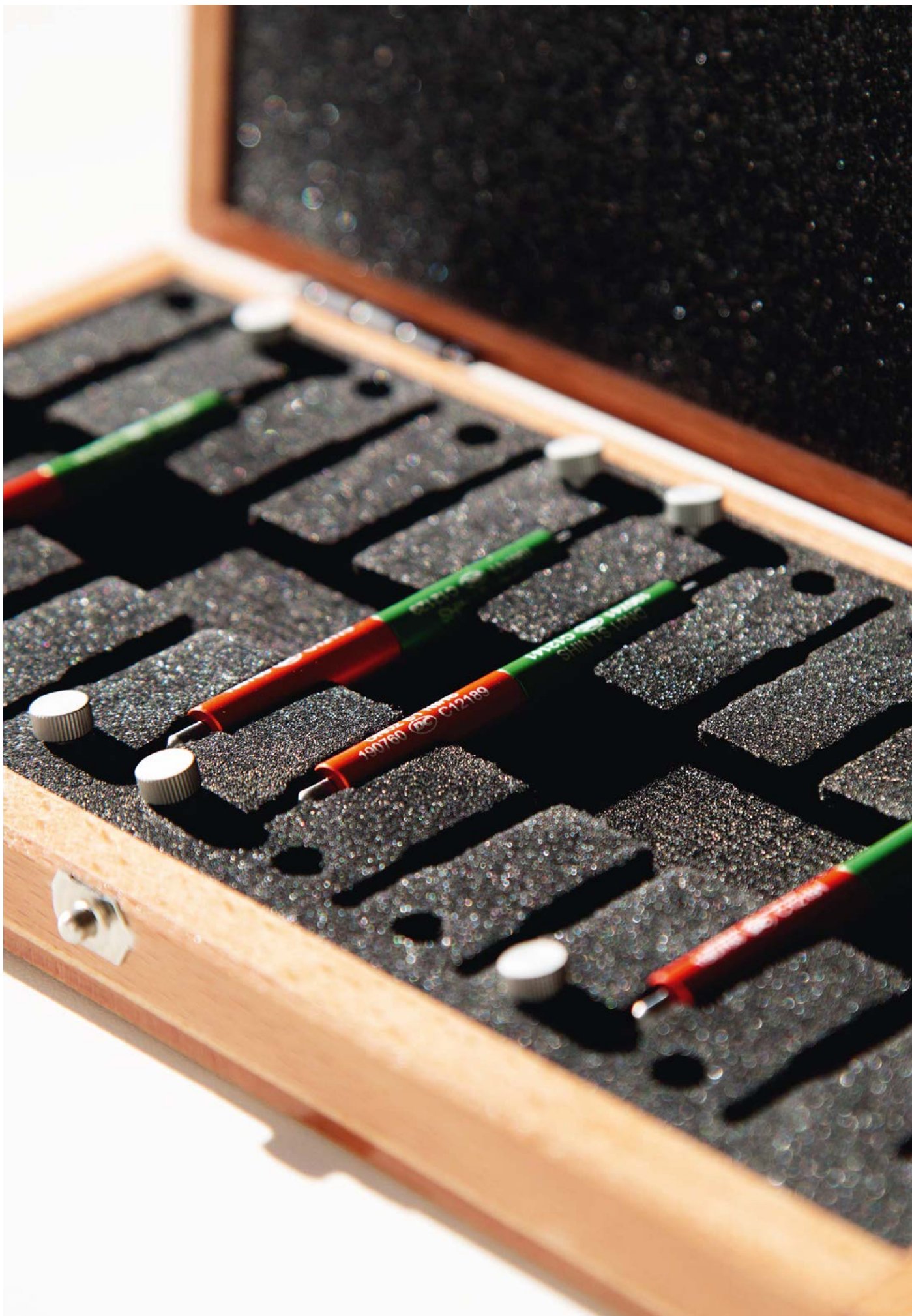
Ora potete accedere alla vostra conferma di conformità in qualsiasi momento, in qualsiasi posto del vostro telefono. Basta scansionare il codice QR sulla scheda all'interno della scatola e scaricare il file pdf associato.

La conferma di conformità che accompagna ogni scatola conferma che la fabbrica ha seguito scrupolosamente il processo di monitoraggio post-produzione.

Controllo qualità DC SWISS SA









## LES SETS DISPONIBLES — SET DISPONIBILI



**JAUGES TAMPONS ET BAGUES DN  
CALIBRI A TAMPONE E ANELLI FILETTATI DN**

**SET UNITAIRE — SINGOLO SET**



**JAUGES BAGUES DZ  
ANELLI FILETTATI DZ**

**SET UNITAIRE — SINGOLO SET**



**JAUGES TAMPONS DN / BAGUES DN  
CALIBRI FILETTATI DN / ANELLI FILETTATI DN**

**SET DE 10 OU 20 PIÈCES  
SET DA 10 O 20 PEZZI**

*Pour chaque set, vous pouvez sélectionner  
le nombre exact de jauges GO / NO-GO.*

*È possibile selezionare il numero esatto di calibri  
filettati di controllo GO / NO-GO per ogni set.*

*Contactez-nous pour toute autre composition de set.*

*Contattateci per qualsiasi altra composizione di set.*

[dcswiss.com](http://dcswiss.com) / [sales@dcswiss.ch](mailto:sales@dcswiss.ch) / +41 32 491 63 63

# COMMANDE DE JAUGES NANO — ORDINE DEI CALIBRI FILETTATI NANO

## TYPE D'OUTIL — TIPO DI STRUMENTO


## CARACTÉRISTIQUES — CARATTERISTICHE

DIMENSION DIMENSIONE	TOLÉRANCE TOLLERANZA	NORME NORMA	QUANTITÉ QUANTITÀ	SPÉCIFIQUE SPECIFICHE

## REMARQUES — NOTE

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## INFORMATIONS D'EXPÉDITION — INFORMAZIONI SULLA CONSEGNA



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Merci de viser votre commande.  
Grazie per firmare l'ordine.

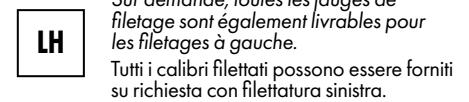
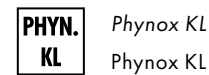
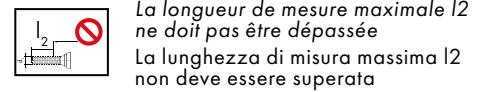
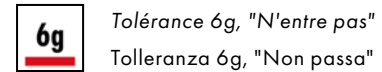
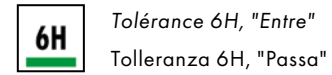
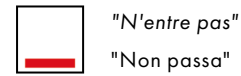


**Répertoire - Jauges de contrôle NANO pour la micromécanique et l'horlogerie**  
**Rubrica - Calibri filettati NANO per micromeccanica e orologeria**

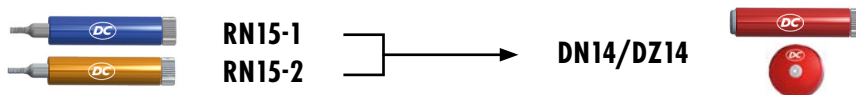
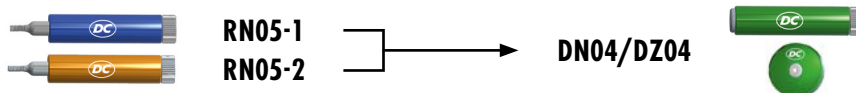
Type Tipo	Jauges tampons de filetage Calibri a tampono filettati			Jauges bagues de filetage Anelli filettati				Tampons rapporteurs Tamponi di controllo a spina					
	DN01 GO	DN01 GO	DN02 NO-GO	DZ04 GO	DZ14 NO-GO	DN04 GO	DN14 NO-GO	RN05-1 GO	RN15-1 GO	RN05-2 NO-GO	RN15-2 NO-GO		
Caractéristiques Caratteristiche													
<b>M 4H / 5h</b>	ISO DIN 14 ISO DIN 13	158	158	164	164	169	169	174	174	179	179		
<b>M 6H / 6g</b>	ISO DIN 13	158	158	164	164	169	169	174	174	179	179		
<b>M 5H / 6h</b>	ISO DIN 13	158	158	164	164	169	169	174	174	179	179		
<b>MF 4H / 4h</b>	ISO DIN 13	159	159	165	165	170	170						
<b>MF 6H / 6g</b>	ISO DIN 13	159	159	165	165	170	170	175	175	180	180		
<b>MF 6h</b>	ISO DIN 13			165	165	170	170	175	175	180	180		
<b>UNC 2B / 2A</b>	ASME B1.1	160	160	166	166	171	171	176	176	181	181		
<b>UNC 3B / 3A</b>	ASME B1.1	160	160	166	166	171	171	176	176	181	181		
<b>UNF 2B / 2A</b>	ASME B1.1	160	160	166	166	171	171	176	176	181	181		
<b>UNF 3B / 3A</b>	ASME B1.1	160	160	166	166	171	171	176	176	181	181		
<b>S NIHS 3G</b>	NIHS	161											
<b>S NIHS 4H</b>	NIHS	161											
<b>S NIHS 4H / 3G</b>	NIHS		161										
<b>S NIHS</b>	NIHS			167	167	172	172	177	177	182	182		
<b>S NIHS NT</b>	NIHS	162	162	167	167	172	172	177	177	182	182		
<b>SF NIHS 3G</b>	NIHS	163											
<b>SF NIHS 4H</b>	NIHS	163											
<b>SF NIHS 4H / 3G</b>	NIHS		163										
<b>SF NIHS</b>	NIHS			168	168	173	173	178	178	183	183		
<b>SF NIHS NT</b>	NIHS							178	178	183	183		
<b>SL</b>	SL 15-01	163	163										

		<i>Témoins d'usure</i> Testimone di usura		<i>Jauges étalons filetés</i> Campioni filettati
<b>Type</b> <b>Tipo</b>		<b>RN05-3 WEAR</b>	<b>RN15-3 WEAR</b>	<b>EN00</b>
<b>Caractéristiques</b> <b>Caratteristiche</b>				
				
<b>M 4H / 5h</b>	ISO DIN 14 ISO DIN 13			
<b>M 6H / 6g</b>	ISO DIN 14 ISO DIN 13	184	184	
<b>M 5H / 6h</b>	ISO DIN 13	184	184	
<b>MF 4H / 4h</b>	ISO DIN 13			
<b>MF 6H / 6g</b>	ISO DIN 13	185	185	
<b>MF 6h</b>	ISO DIN 13	185	185	
<b>S NIHS</b>	NIHS			186

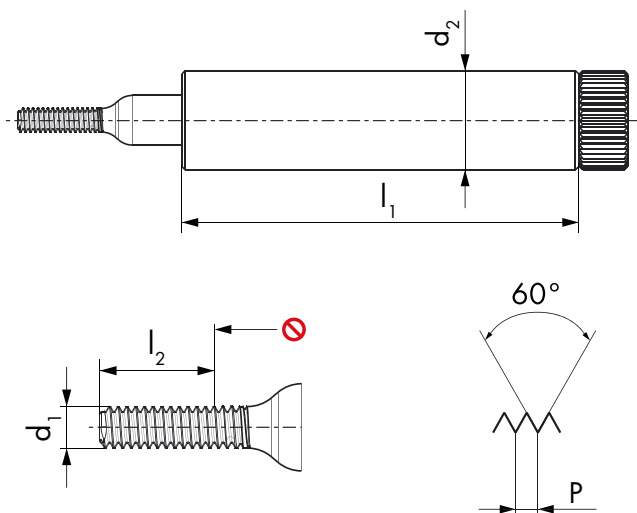
## Pictogrammes - Simboli



## Utilisation — Utilizzare



nano



DN01 GO    DN02 NO-GO    DN01 GO    DN02 NO-GO



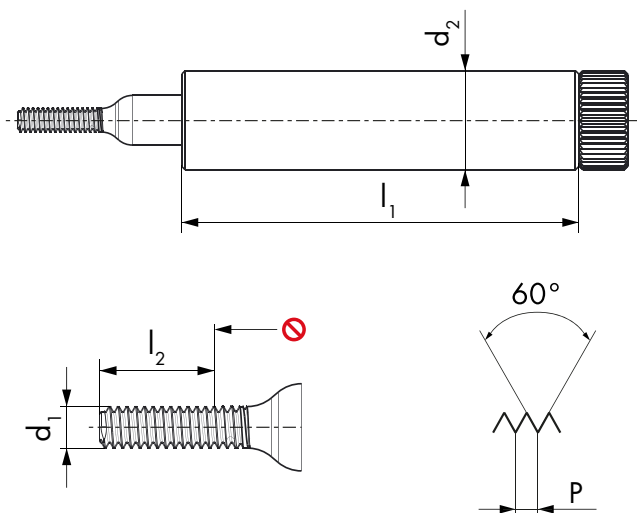
$\emptyset d_1$ M	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.3	0.08	24	0.9	6	● 192778	● 192786		
0.35	0.09	24	1.05	6	● 192779	● 192787		
0.4	0.1	24	1.2	6	● 192780	● 192788		
0.5	0.125	24	1.5	6	● 192781	● 192789		
0.6	0.15	24	1.8	6	● 192782	● 192790		
0.7	0.175	24	2.1	6	● 192783	● 192791		
0.8	0.2	24	2.4	6	● 192784	● 192792		
0.9	0.225	24	2.7	6	● 192785	● 192793		
1	0.25	24	3	6	● 191113	● 191127	● 191421 <sup>1</sup>	● 191424 <sup>1</sup>
1.2	0.25	24	3.6	6	● 191114	● 191128	● 191422 <sup>1</sup>	● 191425 <sup>1</sup>
1.4	0.3	24	4.2	6	● 191115	● 191129	● 191423 <sup>1</sup>	● 191426 <sup>1</sup>
1.6	0.35	24	4.5	6			● 191427	● 191433
1.8	0.35	24	4.5	6			● 191428	● 191434
2	0.4	24	4.5	6			● 191429	● 191435
2.3	0.4	24	4.5	6			● 191430	● 191436
2.5	0.45	24	4.5	6			● 191431	● 191437
2.6	0.45	24	4.5	6			● 191432	● 191438

<sup>1</sup> Tol. 5H



All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

**nano**



DN01 GO    DN02 NO-GO    DN01 GO    DN02 NO-GO



4H    4H    6H    6H

$\varnothing d_1$ MF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	4.2	6	● 191116	● 191130		
1.6	0.2	24	3	6	● 191117	● 191131		
1.8	0.2	24	3	6	● 191118	● 191132		
2	0.2	24	3	6	● 191119	● 191133		
2	0.25	24	3	6	● 192794	● 192797		
2.2	0.2	24	3	6	● 191120	● 191134		
2.2	0.25	24	3	6	● 191121	● 191135		
2.3	0.2	24	3	6	● 191122	● 191136		
2.3	0.25	24	3	6	● 191123	● 191137		
2.5	0.2	24	3	6	● 191124	● 191138		
2.5	0.25	24	3	6	● 191125	● 191139		
2.5	0.35	24	4.5	6			● 192795	● 192798
2.6	0.35	24	4.5	6			● 192796	● 192799



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# UNC, UNF ASME B1.1 ASME B1.2

VHM  
CAR

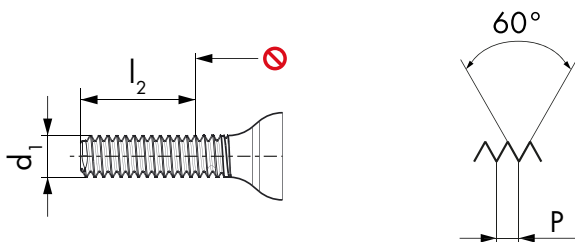
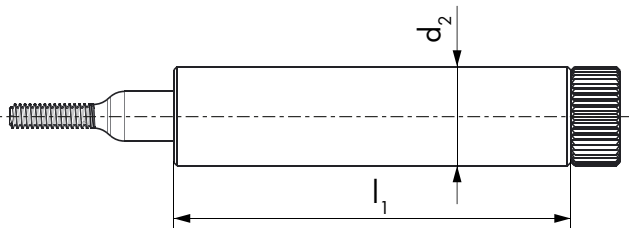
nano

DN01 GO

DN02 NO-GO

DN01 GO

DN02 NO-GO



2B

2B

3B

3B

$\emptyset d_1$ UNC	P TPI	$\emptyset d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1	64	1.854	24	6.35	6	● 191577	● 191580	● 191583	● 191586
2	54	2.184	24	6.35	6	● 191578	● 191581	● 191584	● 191587
3	48	2.515	24	6.35	6	● 191579	● 191582	● 191585	● 191588

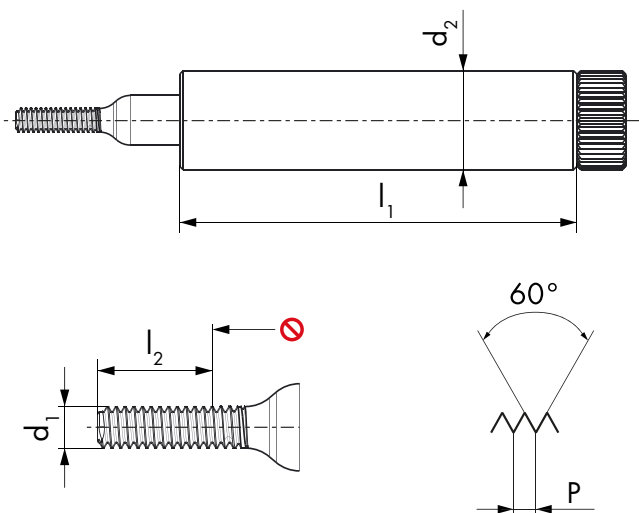
$\emptyset d_1$ UNF	P TPI	$\emptyset d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0	80	1.524	24	4.76	6	● 191637	● 191641	● 191645	● 191649
1	72	1.854	24	4.76	6	● 191638	● 191642	● 191646	● 191650
2	64	2.184	24	4.76	6	● 191639	● 191643	● 191647	● 191651
3	56	2.515	24	4.76	6	● 191640	● 191644	● 191648	● 191652



All nano thread plug gauges are SCS-certified and the paid certificate is available on request.



# nano



DN01 GO

DN01 GO

DN02 NO-GO



$\theta$ S	$d_1$ mm	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID
0.3	0.08	0.08	24	0.9	6	● 190733	● 193242	● 190752
0.35	0.09	0.09	24	1.05	6	● 190734	● 193243	● 190753
0.4	0.1	0.1	24	1.2	6	● 190735	● 193244	● 190754
0.5	0.125	0.125	24	1.5	6	● 190736	● 193245	● 190755
0.6	0.15	0.15	24	1.8	6	● 190737	● 193246	● 190756
0.7	0.175	0.175	24	2.1	6	● 190738	● 193247	● 190757
0.8	0.2	0.2	24	2.4	6	● 190739	● 193248	● 190758
0.9	0.225	0.225	24	2.7	6	● 190740	● 193249	● 190759
1	0.25	0.25	24	3	6	● 190741	● 193250	● 190760
1.2	0.25	0.25	24	3.6	6	● 190742	● 193251	● 190761
1.4	0.3	0.3	24	4.2	6	● 190743	● 193252	● 190762



All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

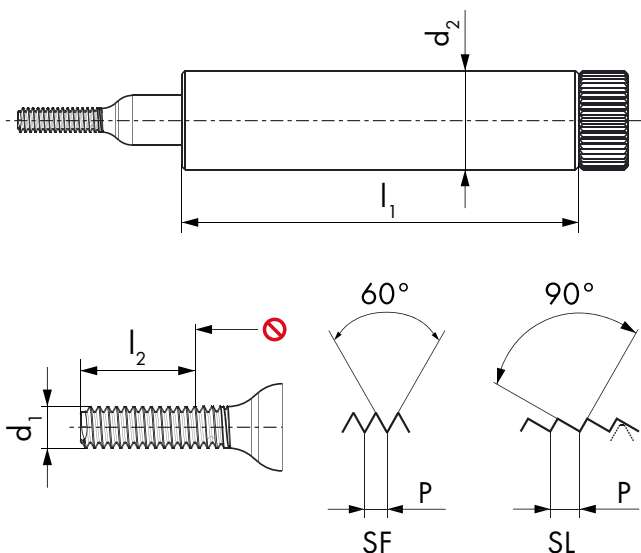
<b>nano</b>						DN01 GO	DN02 NO-GO		
$\varnothing d_1$ S	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID			
0.3	0.08	24	0.9	6	● 190771	● 190790			
0.35	0.09	24	1.05	6	● 190772	● 190791			
0.4	0.1	24	1.2	6	● 190773	● 190792			
0.5	0.125	24	1.5	6	● 190774	● 190793			
0.6	0.15	24	1.8	6	● 190775	● 190794			
0.7	0.175	24	2.1	6	● 190776	● 190795			
0.8	0.2	24	2.4	6	● 190777	● 190796			
0.9	0.225	24	2.7	6	● 190778	● 190797			
1	0.25	24	3	6	● 190779	● 190798			
1.2	0.25	24	3.6	6	● 190780	● 190799			
1.4	0.3	24	4.2	6	● 190781	● 190800			

<sup>1</sup> Tol. 5H



All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

nano



DN01 GO

DN01 GO

DN02 NO-GO



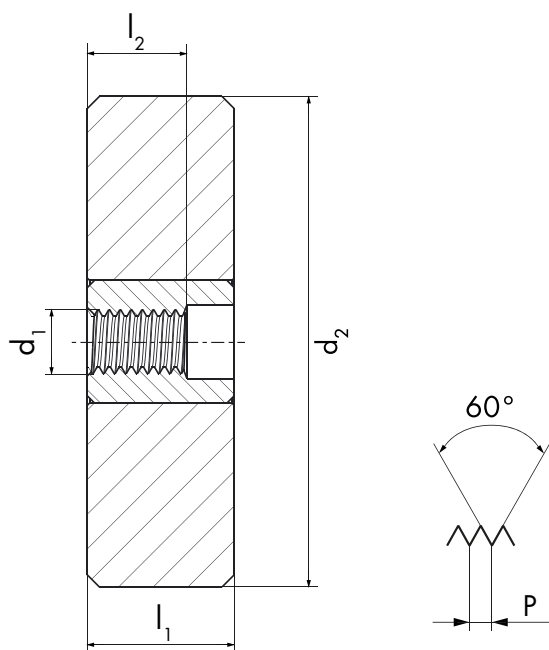
$\emptyset d_1$ SF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID
1.4	0.2	24	4.2	6	● 190744	● 193256	● 190763
1.6	0.2	24	3	6	● 190745	● 193257	● 190764
1.8	0.2	24	3	6	● 190746	● 193258	● 190765
2	0.2	24	3	6	● 190747	● 193259	● 190766
2.2	0.2	24	3	6	● 190748	● 193260	● 190767
2.2	0.25	24	3	6	● 190749	● 193261	● 190768
2.5	0.2	24	3	6	● 190750	● 193262	● 190769
2.5	0.25	24	3	6	● 190751	● 193263	● 190770

$\emptyset d_1$ SL	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID
0.5	0.1	24	1.5	6	● 600178	● 600186
0.6	0.125	24	1.8	6	● 600179	● 600187
0.7	0.15	24	2.1	6	● 600180	● 600188
0.8	0.15	24	2.4	6	● 600181	● 600189
0.9	0.175	24	2.7	6	● 600182	● 600190
1	0.2	24	3	6	● 600183	● 600191
1.2	0.2	24	3.6	6	● 600184	● 600192
1.4	0.25	24	4.2	6	● 600185	● 600193



All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

nano



DZ04 GO

DZ14 NO-GO

DZ04 GO

DZ14 NO-GO



$\emptyset d_1$ M	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.5	0.125	6	0.75	20	● 192845	● 192853		
0.6	0.15	6	0.9	20	● 192846	● 192854		
0.7	0.175	6	1.05	20	● 192847	● 192855		
0.8	0.2	6	1.2	20	● 192848	● 192856		
0.9	0.225	6	1.35	20	● 192849	● 192857		
1	0.25	6	1.5	20			● 191473 <sup>1</sup>	● 191476 <sup>1</sup>
1.2	0.25	6	1.8	20			● 191474 <sup>1</sup>	● 191477 <sup>1</sup>
1.4	0.3	6	2.1	20			● 191475 <sup>1</sup>	● 191478 <sup>1</sup>
1.6	0.35	6	2.4	20			● 191479	● 191485
1.8	0.35	6	2.7	20			● 191480	● 191486
2	0.4	6	3	20			● 191481	● 191487
2.3	0.4	6	3.45	20			● 191482	● 191488
2.5	0.45	6	3.75	20			● 191483	● 191489
2.6	0.45	6	3.9	20			● 191484	● 191490

<sup>1</sup> Tol. 6h



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

<b>nano</b>						DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO
$\varnothing d_1$ MF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID	
1.4	0.2	6	2.1	20	● 194887	● 194888	● 192858 <sup>1</sup>	● 192871 <sup>1</sup>	
1.6	0.2	6	1.8	20	● 191201	● 191215	● 191229	● 191243	
1.8	0.2	6	1.8	20	● 191202	● 191216	● 191230	● 191244	
2	0.2	6	1.8	20	● 190711	● 190710	● 191231	● 191245	
2	0.25	6	2.25	20	● 194872	● 190690	● 194876	● 194877	
2.2	0.2	6	1.8	20	● 191204	● 191218	● 191232	● 191246	
2.2	0.25	6	2.25	20	● 191205	● 191219	● 191233	● 191247	
2.3	0.2	6	1.8	20	● 191206	● 191220	● 191234	● 191248	
2.3	0.25	6	2.25	20	● 191207	● 191221	● 191235	● 191249	
2.5	0.2	6	1.8	20	● 191208	● 191222	● 191236	● 191250	
2.5	0.25	6	2.25	20	● 194873	● 191223	● 191237	● 191251	
2.5	0.35	6	3.75	20			● 192869	● 192882	
2.6	0.35	6	3.9	20			● 192870	● 192883	

<sup>1</sup> Tol. 6h



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

# UNC, UNF ASME B1.1 ASME B1.2

PHYN.  
KL

<b>nano</b>						DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO
						<b>2A</b>	<b>2A</b>	<b>3A</b>	<b>3A</b>
$\varnothing d_1$ UNC	P TPI	$\varnothing d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1	64	1.854	6	2.78	20	● 191601	● 191604	● 191607	● 191610
2	56	2.184	6	3.28	20	● 191602	● 191605	● 191608	● 191611
3	48	2.515	6	3.77	20	● 191603	● 191606	● 191609	● 191612
$\varnothing d_1$ UNF	P TPI	$\varnothing d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0	80	1.524	6	2.29	20	● 191669	● 191673	● 191677	● 191681
1	72	1.854	6	2.78	20	● 191670	● 191674	● 191678	● 191682
2	64	2.184	6	3.28	20	● 191671	● 191675	● 191679	● 191683
3	56	2.515	6	3.77	20	● 191672	● 191676	● 191680	● 191684



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

<b>nano</b>						DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO
$\emptyset d_1$ S	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID	
0.5	0.125	6	0.75	20	● 190812	● 190831	● 190850	● 190869	
0.6	0.15	6	0.9	20	● 190813	● 190832	● 190851	● 190870	
0.7	0.175	6	1.05	20	● 190814	● 190833	● 190852	● 190871	
0.8	0.2	6	1.2	20	● 190815	● 190834	● 190853	● 190872	
0.9	0.225	6	1.35	20	● 190816	● 190835	● 190854	● 190873	
1	0.25	6	1.5	20	● 190817	● 190836	● 190855	● 190874	
1.2	0.25	6	1.8	20	● 190818	● 190837	● 190856	● 190875	
1.4	0.3	6	2.1	20	● 190819	● 190838	● 190857	● 190876	



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

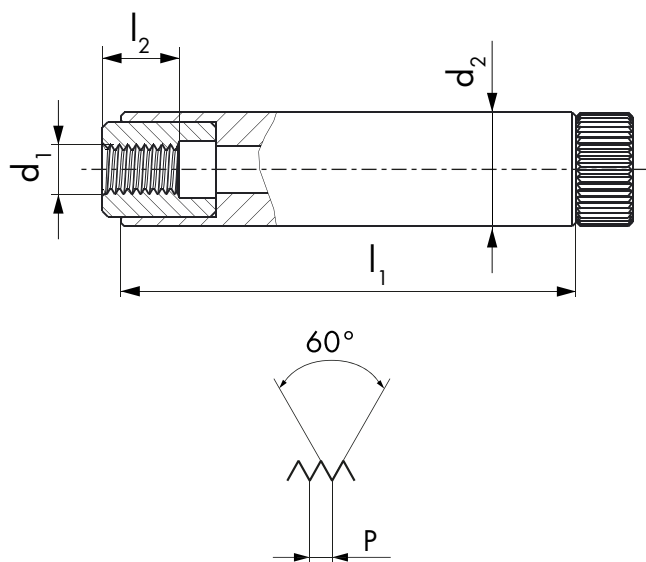


<b>nano</b>						DZ04 GO	DZ14 NO-GO		
$\emptyset d_1$ SF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID			
1.4	0.2	6	2.1	20	● 190820	● 190839			
1.6	0.2	6	1.8	20	● 190821	● 190840			
1.8	0.2	6	1.8	20	● 190822	● 190841			
2	0.2	6	1.8	20	● 190823	● 190842			
2.2	0.2	6	1.8	20	● 190824	● 190843			
2.2	0.25	6	2.25	20	● 190825	● 190844			
2.5	0.2	6	1.8	20	● 190826	● 190845			
2.5	0.25	6	2.25	20	● 190827	● 190846			



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

nano



DN04 GO

DN14 NO-GO

DN04 GO

DN14 NO-GO



$\emptyset d_1$ M	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.5	0.125	24	0.75	6	● 192803	● 192811		
0.6	0.15	24	0.9	6	● 192804	● 192812		
0.7	0.175	24	1.05	6	● 192805	● 192813		
0.8	0.2	24	1.2	6	● 192806	● 192814		
0.9	0.225	24	1.35	6	● 192807	● 192815		
1	0.25	24	1.5	6			● 191447 <sup>1</sup>	● 191450 <sup>1</sup>
1.2	0.25	24	1.8	6			● 191448 <sup>1</sup>	● 191451 <sup>1</sup>
1.4	0.3	24	2.1	6			● 191449 <sup>1</sup>	● 191452 <sup>1</sup>
1.6	0.35	24	2.4	6			● 191453	● 191459
1.8	0.35	24	2.7	6			● 191454	● 191460
2	0.4	24	3	6			● 191455	● 191461
2.3	0.4	24	3.45	6			● 191456	● 191462
2.5	0.45	24	3.75	6			● 191457	● 191463
2.6	0.45	24	3.9	6			● 191458	● 191464

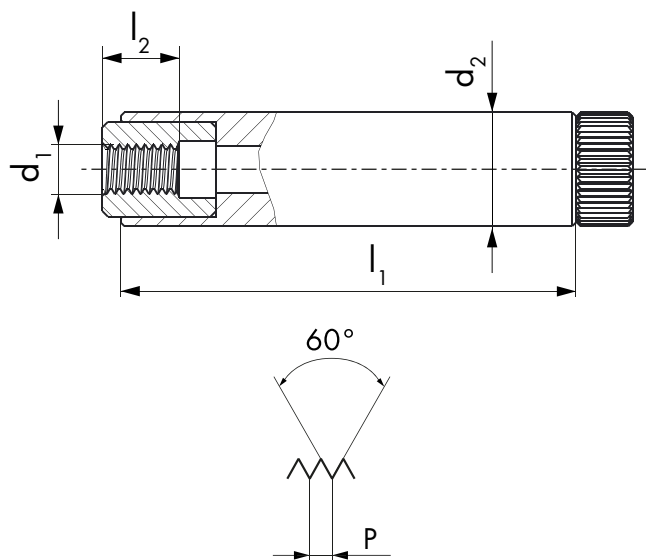
<sup>1</sup> Tol. 6h



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.



nano



DN04 GO

DN14 NO-GO

DN04 GO

DN14 NO-GO



$\emptyset d_1$ MF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	2.1	6	● 194885	● 194886	● 192816 <sup>1</sup>	● 192829 <sup>1</sup>
1.6	0.2	24	1.8	6	● 191145	● 191159	● 191173	● 191187
1.8	0.2	24	1.8	6	● 191146	● 191160	● 191174	● 191188
2	0.2	24	1.8	6	● 191147	● 191161	● 191175	● 191189
2	0.25	24	2.25	6	● 194870	● 194871	● 194874	● 194875
2.2	0.2	24	1.8	6	● 191148	● 191162	● 191176	● 191190
2.2	0.25	24	2.25	6	● 191149	● 191163	● 191177	● 191191
2.3	0.2	24	1.8	6	● 191150	● 191164	● 191178	● 191192
2.3	0.25	24	2.25	6	● 191151	● 191165	● 191179	● 191193
2.5	0.2	24	1.8	6	● 191152	● 191166	● 191180	● 191194
2.5	0.25	24	2.25	6	● 191153	● 191167	● 191181	● 191195
2.5	0.35	24	3.75	6			● 192827	● 192840
2.6	0.35	24	3.9	6			● 192828	● 192841

<sup>1</sup> Tol. 6h

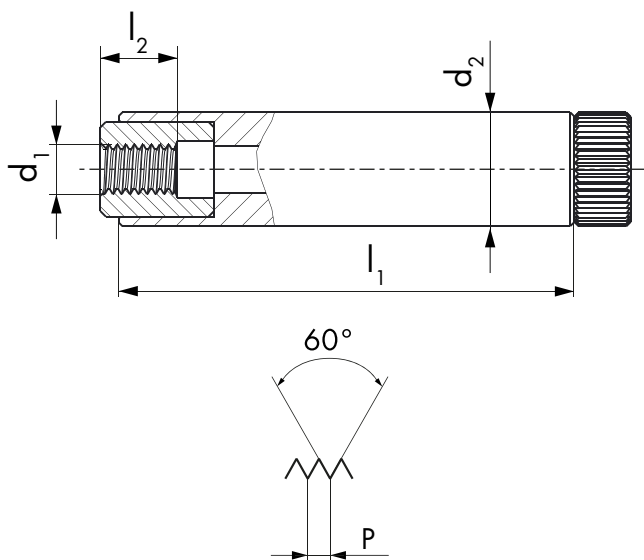


All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

# UNC, UNF ASME B1.1 ASME B1.2

PHYN.  
KL

## nano



DN04 GO

DN14 NO-GO

DN04 GO

DN14 NO-GO



$\varnothing d_1$ UNC	P TPI	$\varnothing d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1	64	1.854	24	2.78	6	● 191589	● 191592	● 191595	● 191598
2	56	2.184	24	3.28	6	● 191590	● 191593	● 191596	● 191599
3	48	2.515	24	3.77	6	● 191591	● 191594	● 191597	● 191600
$\varnothing d_1$ UNF	P TPI	$\varnothing d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0	80	1.524	24	2.29	6	● 191653	● 191657	● 191661	● 191665
1	72	1.854	24	2.78	6	● 191654	● 191658	● 191662	● 191666
2	64	2.184	24	3.28	6	● 191655	● 191659	● 191663	● 191667
3	56	2.515	24	3.77	6	● 191656	● 191660	● 191664	● 191668



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

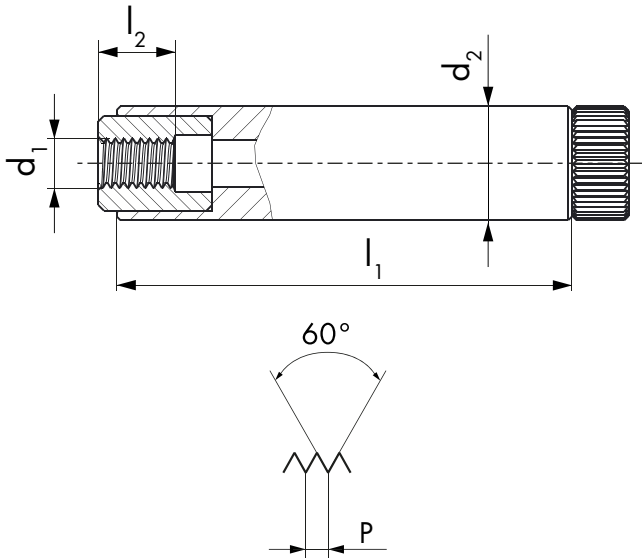


<b>nano</b>						DN04 GO	DN14 NO-GO	DN04 GO	DN14 NO-GO			
$\emptyset d_1$ S	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$		ID	ID	ID	ID			
0.5	0.125	24	0.75	6	●	190888	●	190907	●	190926	●	190945
0.6	0.15	24	0.9	6	●	190889	●	190908	●	190927	●	190946
0.7	0.175	24	1.05	6	●	190890	●	190909	●	190928	●	190947
0.8	0.2	24	1.2	6	●	190891	●	190910	●	190929	●	190948
0.9	0.225	24	1.35	6	●	190892	●	190911	●	190930	●	190949
1	0.25	24	1.5	6	●	190893	●	190912	●	190931	●	190950
1.2	0.25	24	1.8	6	●	190894	●	190913	●	190932	●	190951
1.4	0.3	24	2.1	6	●	190895	●	190914	●	190933	●	190952



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

nano



DN04 GO

DN14 NO-GO



$\emptyset d_1$ SF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID
1.4	0.2	24	2.1	6	● 190896	● 190915
1.6	0.2	24	1.8	6	● 190897	● 190916
1.8	0.2	24	1.8	6	● 190898	● 190917
2	0.2	24	1.8	6	● 190899	● 190918
2.2	0.2	24	1.8	6	● 190900	● 190919
2.2	0.25	24	2.25	6	● 190901	● 190920
2.5	0.2	24	1.8	6	● 190902	● 190921
2.5	0.25	24	2.28	6	● 190903	● 190922



All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.



ISO DIN 14 / ISO DIN 13  
DC SWISS NI589 / ISO 1502



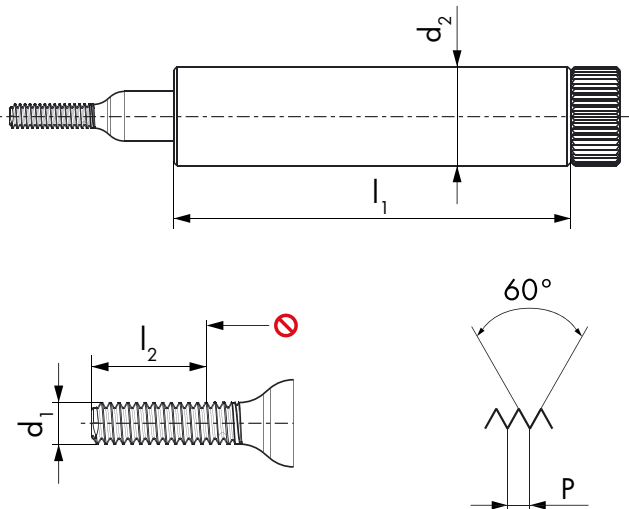
nano

RN05-1 GO

RN15-1 GO

RN05-1 GO

RN15-1 GO



5h

5h

6g

6g

$\emptyset d_1$ M	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.3	0.08	24	0.61	6	● 192884	● 192892		
0.35	0.09	24	0.71	6	● 192885	● 192893		
0.4	0.1	24	0.8	6	● 192886	● 192894		
0.5	0.125	24	1	6	● 192887	● 192895		
0.6	0.15	24	1.2	6	● 192888	● 192896		
0.7	0.175	24	1.4	6	● 192889	● 192897		
0.8	0.2	24	1.6	6	● 192890	● 192898		
0.9	0.225	24	1.8	6	● 192891	● 192899		
1	0.25	24	2	6			● 191499 <sup>1</sup>	● 191508 <sup>1</sup>
1.2	0.25	24	2.3	6			● 191500 <sup>1</sup>	● 191509 <sup>1</sup>
1.4	0.3	24	2.7	6			● 191501 <sup>1</sup>	● 191510 <sup>1</sup>
1.6	0.35	24	3.1	6			● 191517	● 191535
1.8	0.35	24	3.4	6			● 191518	● 191536
2	0.4	24	3.8	6			● 191519	● 191537
2.3	0.4	24	4.25	6			● 191520	● 191538
2.5	0.45	24	4.65	6			● 191521	● 191539
2.6	0.45	24	4.8	6			● 191522	● 191540

<sup>1</sup> Tol. 6h



SCS certificate included.



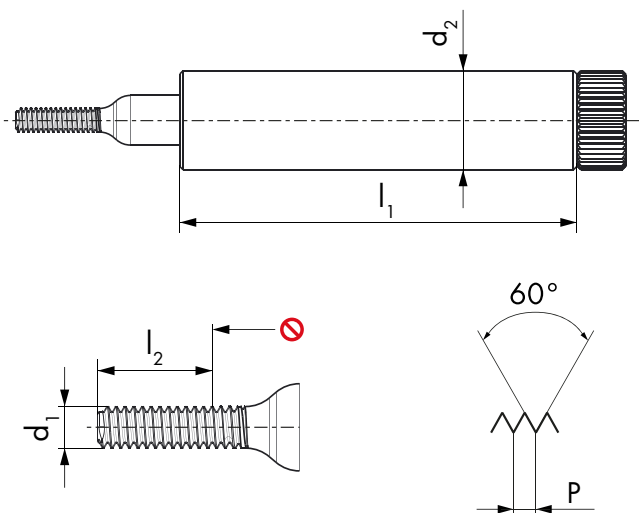
nano

RN05-1 GO

RN15-1 GO

RN05-1 GO

RN15-1 GO



6h

6h

6g

6g

$\emptyset d_1$ MF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	2.5	6	● 192932	● 192945		
1.6	0.2	24	2.2	6	● 192933	● 192946		
1.8	0.2	24	2.2	6	● 192934	● 192947		
2	0.2	24	2.2	6	● 192935	● 192948		
2	0.25	24	2.75	6	● 192936	● 192949		
2.2	0.2	24	2.2	6	● 192937	● 192950		
2.2	0.25	24	2.75	6	● 192938	● 192951		
2.3	0.2	24	2.2	6	● 192939	● 192952		
2.3	0.25	24	2.75	6	● 192940	● 192953		
2.5	0.2	24	2.2	6	● 192941	● 192954		
2.5	0.25	24	2.75	6	● 192942	● 192955		
2.5	0.35	24	4.45	6			● 192943	● 192956
2.6	0.35	24	4.6	6			● 192944	● 192957



SCS certificate included.



# UNC, UNF ASME B1.1 DC SWISS NI582

VHM  
CAR

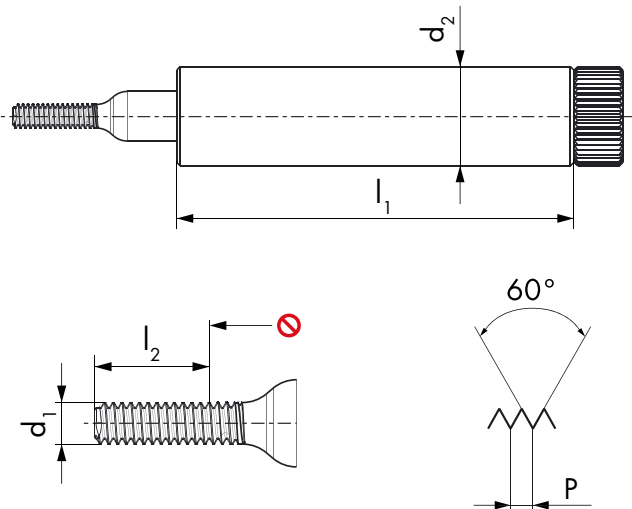
nano

RN05-1 GO

RN15-1 GO

RN05-1 GO

RN15-1 GO



2A

2A

3A

3A

$\emptyset d_1$ UNC	P TPI	$\emptyset'' d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1	64	1.854	24	3.58	6	● 191613	● 191619	● 191625	● 191631
2	56	2.184	24	4.18	6	● 191614	● 191620	● 191626	● 191632
3	48	2.515	24	4.83	6	● 191615	● 191621	● 191627	● 191633
$\emptyset d_1$ UNF	P TPI	$\emptyset'' d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0	80	1.524	24	2.92	6	● 191685	● 191693	● 191701	● 191709
1	72	1.854	24	3.49	6	● 191686	● 191694	● 191702	● 191710
2	64	2.184	24	4.07	6	● 191687	● 191695	● 191703	● 191711
3	56	2.515	24	4.68	6	● 191688	● 191696	● 191704	● 191712



SCS certificate included.

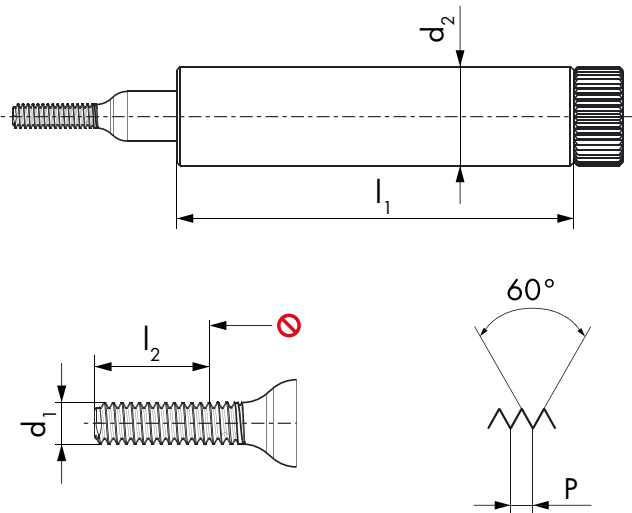
**nano**

RN05-1 GO

RN15-1 GO

RN05-1 GO

RN15-1 GO



$\emptyset d_1$ S	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.3	0.08	24	0.61	6	● 190961	● 190999	● 191037	● 191075
0.35	0.09	24	0.71	6	● 190962	● 191000	● 191038	● 191076
0.4	0.1	24	0.8	6	● 190963	● 191001	● 191039	● 191077
0.5	0.125	24	1	6	● 190964	● 191002	● 191040	● 191078
0.6	0.15	24	1.2	6	● 190965	● 191003	● 191041	● 191079
0.7	0.175	24	1.4	6	● 190966	● 191004	● 191042	● 191080
0.8	0.2	24	1.6	6	● 190967	● 191005	● 191043	● 191081
0.9	0.225	24	1.8	6	● 190968	● 191006	● 191044	● 191082
1	0.25	24	2	6	● 190969	● 191007	● 191045	● 191083
1.2	0.25	24	2.3	6	● 190970	● 191008	● 191046	● 191084
1.4	0.3	24	2.7	6	● 190971	● 191009	● 191047	● 191085



SCS certificate included.



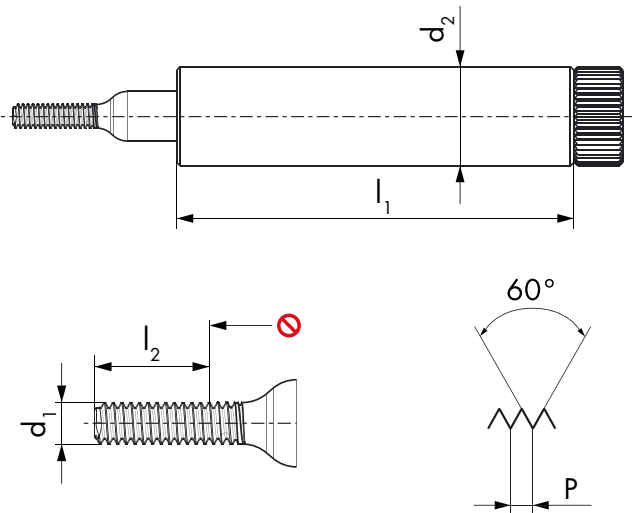
**nano**

RN05-1 GO

RN15-1 GO

RN05-1 GO

RN15-1 GO



$\emptyset d_1$ SF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	2.5	6	● 190972	● 191010	● 191048	● 191086
1.6	0.2	24	2.2	6	● 190973	● 191011	● 191049	● 191087
1.8	0.2	24	2.2	6	● 190974	● 191012	● 191050	● 191088
2	0.2	24	2.2	6	● 190975	● 191013	● 191051	● 191089
2.2	0.2	24	2.2	6	● 190976	● 191014	● 191052	● 191090
2.2	0.25	24	2.75	6	● 190977	● 191015	● 191053	● 191091
2.5	0.2	24	2.2	6	● 190978	● 191016	● 191054	● 191092
2.5	0.25	24	2.75	6	● 190979	● 191017	● 191055	● 191093



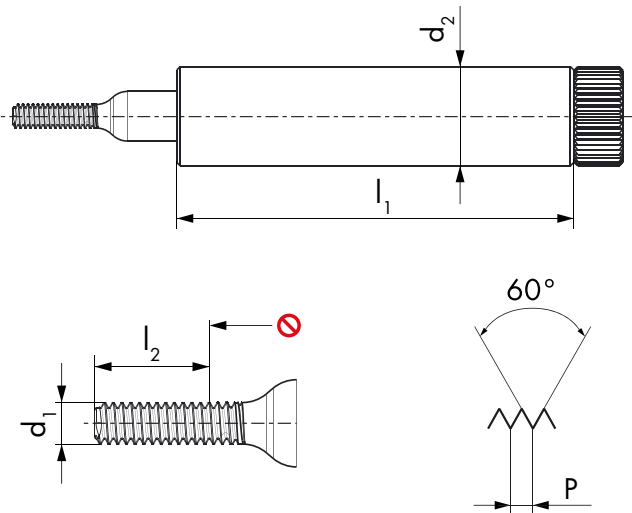
SCS certificate included.



ISO DIN 14 / ISO DIN 13  
DC SWISS NI589 / ISO 1502



nano



RN05-2  
NO-GO

RN15-2  
NO-GO

RN05-2  
NO-GO

RN15-2  
NO-GO



5h

5h

6g

6g

$\emptyset d_1$ M	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.3	0.08	24	0.61	6	● 192900	● 192908		
0.35	0.09	24	0.71	6	● 192901	● 192909		
0.4	0.1	24	0.8	6	● 192902	● 192910		
0.5	0.125	24	1	6	● 192903	● 192911		
0.6	0.15	24	1.2	6	● 192904	● 192912		
0.7	0.175	24	1.4	6	● 192905	● 192913		
0.8	0.2	24	1.6	6	● 192906	● 192914		
0.9	0.225	24	1.8	6	● 192907	● 192915		
1	0.25	24	2	6			● 191502 <sup>1</sup>	● 191511 <sup>1</sup>
1.2	0.25	24	2.3	6			● 191503 <sup>1</sup>	● 191512 <sup>1</sup>
1.4	0.3	24	2.7	6			● 191504 <sup>1</sup>	● 191513 <sup>1</sup>
1.6	0.35	24	3.1	6			● 191523	● 191541
1.8	0.35	24	3.4	6			● 191524	● 191542
2	0.4	24	3.8	6			● 191525	● 191543
2.3	0.4	24	4.25	6			● 191526	● 191544
2.5	0.45	24	4.65	6			● 191527	● 191545
2.6	0.45	24	4.8	6			● 191528	● 191546

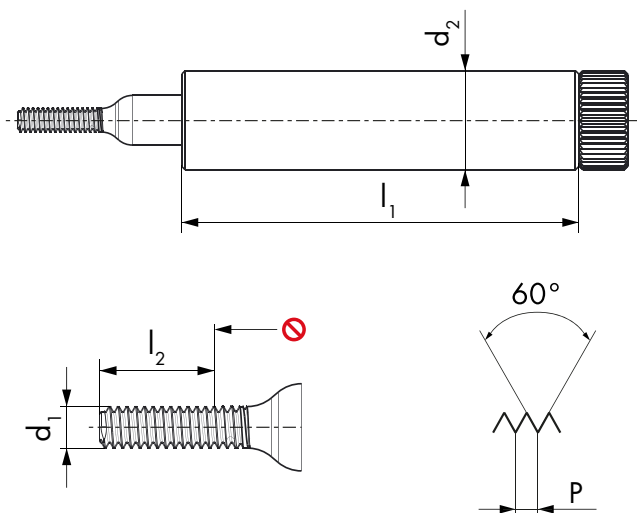
<sup>1</sup> Tol. 6h



SCS certificate included.



nano



**RN05-2  
NO-GO**

**RN15-2  
NO-GO**

**RN05-2  
NO-GO**

**RN15-2  
NO-GO**



**6h**

**6h**

**6g**

**6g**

$\emptyset d_1$ MF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	2.5	6	● 192958	● 192971		
1.6	0.2	24	1.6	6	● 192959	● 192972		
1.8	0.2	24	1.6	6	● 192960	● 192973		
2	0.2	24	1.6	6	● 192961	● 192974		
2	0.25	24	2	6	● 192962	● 192975		
2.2	0.2	24	1.6	6	● 192963	● 192976		
2.2	0.25	24	2	6	● 192964	● 192977		
2.3	0.2	24	1.6	6	● 192965	● 192978		
2.3	0.25	24	2	6	● 192966	● 192979		
2.5	0.2	24	1.6	6	● 192967	● 192980		
2.5	0.25	24	2	6	● 192968	● 192981		
2.5	0.35	24	4.45	6			● 192969	● 192982
2.6	0.35	24	4.6	6			● 192970	● 192983



SCS certificate included.

# UNC, UNF ASME B1.1 DC SWISS NI582

VHM  
CAR

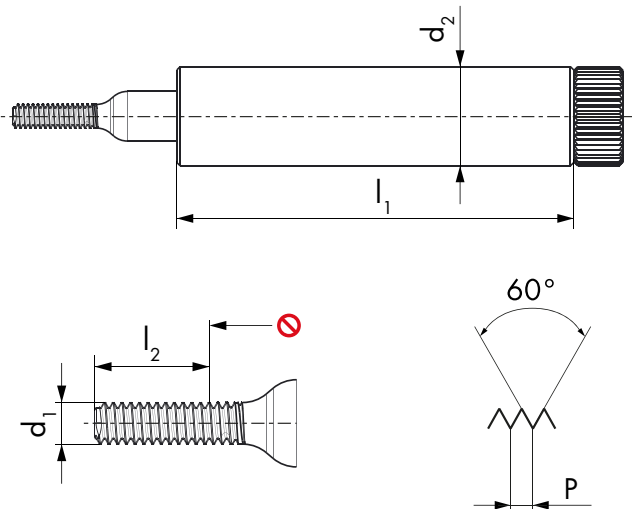
nano

RN05-2  
NO-GO

RN15-2  
NO-GO

RN05-2  
NO-GO

RN15-2  
NO-GO



2A

2A

3A

3A

$\emptyset d_1$ UNC	P TPI	$\emptyset d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1	64	1.854	24	3.58	6	● 191616	● 191622	● 191628	● 191634
2	56	2.184	24	4.18	6	● 191617	● 191623	● 191629	● 191635
3	48	2.515	24	4.83	6	● 191618	● 191624	● 191630	● 191636
$\emptyset d_1$ UNF	P TPI	$\emptyset d_1$ mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0	80	1.524	24	2.92	6	● 191689	● 191697	● 191705	● 191713
1	72	1.854	24	3.49	6	● 191690	● 191698	● 191706	● 191714
2	64	2.184	24	4.07	6	● 191691	● 191699	● 191707	● 191715
3	56	2.515	24	4.68	6	● 191692	● 191700	● 191708	● 191716

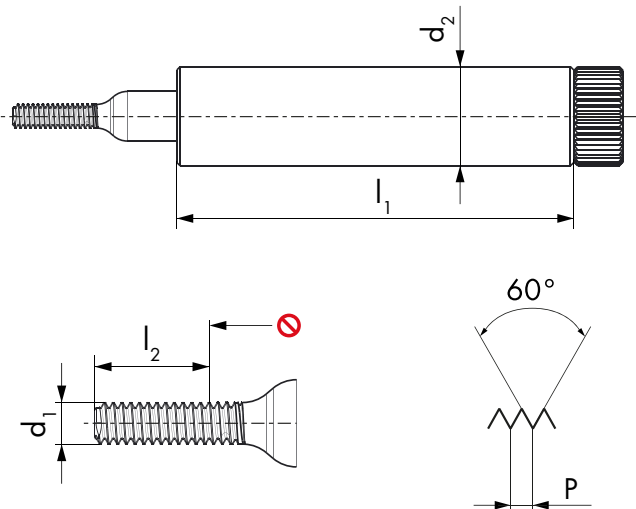


SCS certificate included.





**nano**



**RN05-2  
NO-GO**

**RN15-2  
NO-GO**

**RN05-2  
NO-GO**

**RN15-2  
NO-GO**



$\emptyset d_1$ S	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
0.3	0.08	24	0.61	6	● 190980	● 191018	● 191056	● 191094
0.35	0.09	24	0.71	6	● 190981	● 191019	● 191057	● 191095
0.4	0.1	24	0.8	6	● 190982	● 191020	● 191058	● 191096
0.5	0.125	24	1	6	● 190983	● 191021	● 191059	● 191097
0.6	0.15	24	1.2	6	● 190984	● 191022	● 191060	● 191098
0.7	0.175	24	1.4	6	● 190985	● 191023	● 191061	● 191099
0.8	0.2	24	1.6	6	● 190986	● 191024	● 191062	● 191100
0.9	0.225	24	1.8	6	● 190987	● 191025	● 191063	● 191101
1	0.25	24	2	6	● 190988	● 191026	● 191064	● 191102
1.2	0.25	24	2.3	6	● 190989	● 191027	● 191065	● 191103
1.4	0.3	24	2.7	6	● 190990	● 191028	● 191066	● 191104



SCS certificate included.

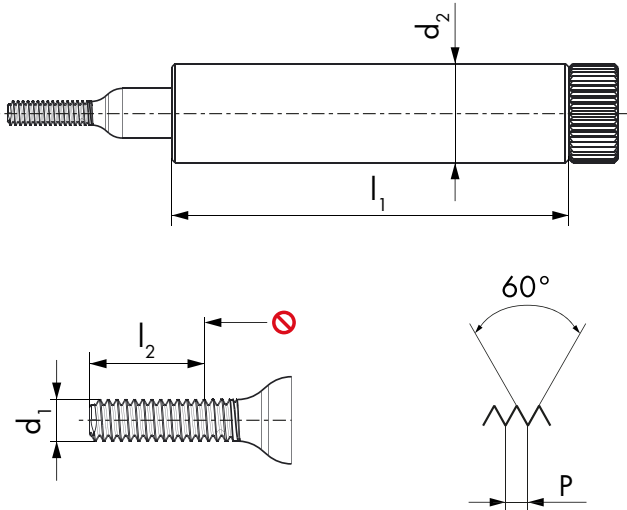
nano

RN05-2  
NO-GO

RN15-2  
NO-GO

RN05-2  
NO-GO

RN15-2  
NO-GO



$\emptyset d_1$ SF	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	2.5	6	● 190991	● 191029	● 191067	● 191105
1.6	0.2	24	1.6	6	● 190992	● 191030	● 191068	● 191106
1.8	0.2	24	1.6	6	● 190993	● 191031	● 191069	● 191107
2	0.2	24	1.6	6	● 190994	● 191032	● 191070	● 191108
2.2	0.2	24	1.6	6	● 190995	● 191033	● 191071	● 191109
2.2	0.25	24	2	6	● 190996	● 191034	● 191072	● 191110
2.5	0.2	24	1.6	6	● 190997	● 191035	● 191073	● 191111
2.5	0.25	24	2	6	● 190998	● 191036	● 191074	● 191112



SCS certificate included.





ISO DIN 13  
ISO 1502

VHM  
CAR

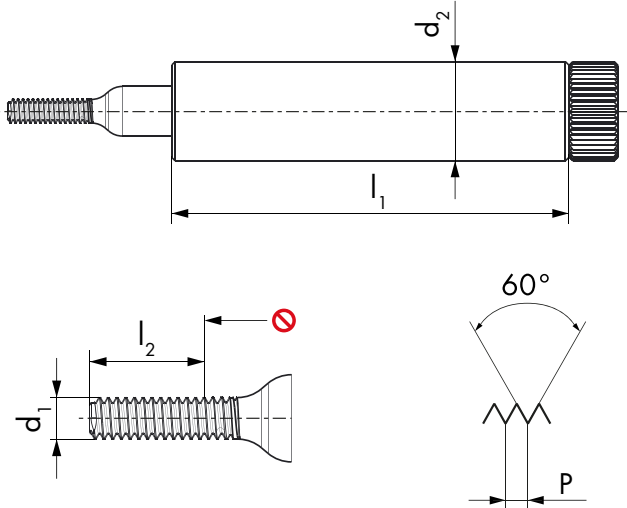
nano

RN05-3  
WEAR

RN15-3  
WEAR

RN05-3  
WEAR

RN15-3  
WEAR



6h

6h

6g

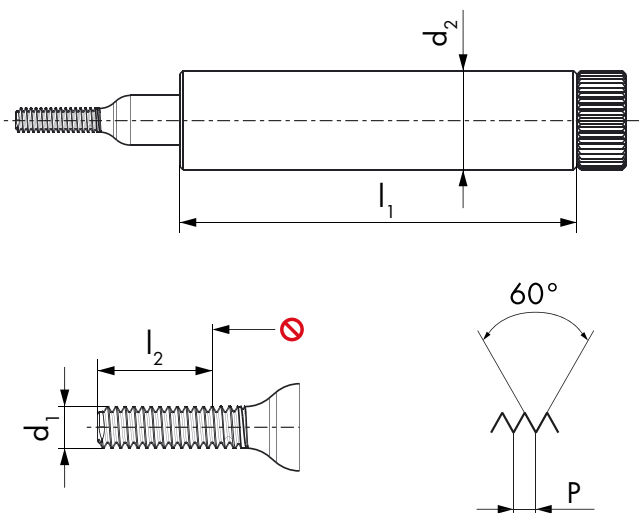
6g

$\emptyset d_1$ M	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID	ID	ID	ID
1	0.25	24	2	6	● 191505	● 191514		
1.2	0.25	24	2.3	6	● 191506	● 191515		
1.4	0.3	24	2.7	6	● 191507	● 191516		
1.6	0.35	24	3.1	6			● 191529	● 191547
1.8	0.35	24	3.4	6			● 191530	● 191548
2	0.4	24	3.8	6			● 191531	● 191549
2.3	0.4	24	4.25	6			● 191532	● 191550
2.5	0.45	24	4.65	6			● 191533	● 191551
2.6	0.45	24	4.8	6			● 191534	● 191552



SCS certificate included.

nano



**RN05-3  
WEAR**

**RN15-3  
WEAR**

**RN05-3  
WEAR**

**RN15-3  
WEAR**



**6h**

**6h**

**6g**

**6g**

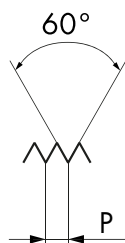
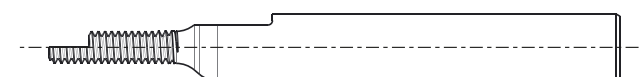
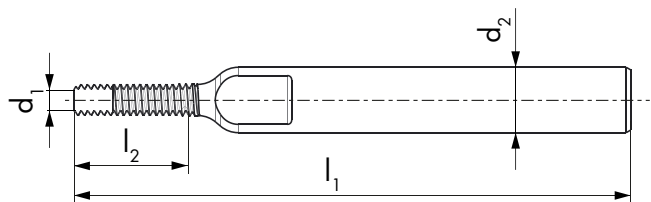
$\emptyset d_1$ MF	P mm	$l_1$ mm	$l_2$ 60 mm	$d_2$	ID	ID	ID	ID
1.4	0.2	24	2.5	6	● 192984	● 192997		
1.6	0.2	24	1.6	6	● 192985	● 192998		
1.8	0.2	24	1.6	6	● 192986	● 192999		
2	0.2	24	1.6	6	● 192987	● 193000		
2	0.25	24	2	6	● 192988	● 193001		
2.2	0.2	24	1.6	6	● 192989	● 193002		
2.2	0.25	24	2	6	● 192990	● 193003		
2.3	0.2	24	1.6	6	● 192991	● 193004		
2.3	0.25	24	2	6	● 192992	● 193005		
2.5	0.2	24	1.6	6	● 192993	● 193006		
2.5	0.25	24	2	6	● 192994	● 193007		
2.5	0.35	24	4.45	6			● 192995	● 193008
2.6	0.35	24	4.6	6			● 192996	● 193009



SCS certificate included.



# nano



EN00



NIHS

$\emptyset d_1$ s	P mm	$l_1$ mm	$l_2$ GO mm	$d_2$	ID
0.3	0.08	39	1.28	3	● 192747
0.35	0.09	39	1.44	3	● 192748
0.4	0.1	39	1.6	3	● 192749
0.5	0.125	39	2	3	● 192750
0.6	0.15	39	2.4	3	● 192751
0.7	0.175	39	2.8	3	● 192752
0.8	0.2	39	3.2	3	● 192753
0.9	0.225	39	3.6	3	● 192754
1	0.25	39	4	3	● 192755
1.2	0.25	39	4	3	● 192756
1.4	0.3	39	4.8	3	● 192757

La Jauge Étalon Filetée de DC SWISS sert à calibrer les machines de mesure. Les Étalons de notre catalogue, ou réalisés selon vos besoins spécifiques, sont livrés avec un certificat de mesure SCS confirmant que la production a suivi scrupuleusement le processus de contrôle au terme de la fabrication selon ISO 17025. Il atteste la qualité de l'équipement métrologique de DC NANO TOOLS SA (SCS 0143), centre de compétences et membre du Groupe DC SWISS.

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SCS certificate included.

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TOUT MOMENT VIA NOTRE **BOUTIQUE EN LIGNE**.  
INSCRIVEZ-VOUS MAINTENANT SUR **DCSWISS.COM****



**TUTTI I NOSTRI STRUMENTI POSSONO ESSERE  
ORDINATI IN QUALSIASI MOMENTO TRAMITE  
IL NOSTRO **WEBSHOP**.  
REGISTRATEVI ORA: **DCSWISS.COM****

## TABELLE DE DURETÉ — TABELLA DI DUREZZA

<b>HRC</b> <i>Dureté Rockwell</i> <b>Durezza Rockwell</b>	<b>HB</b> <i>Dureté Brinell</i> <b>Durezza Brinell</b>	<b>HV</b> <i>Dureté Vickers</i> <b>Durezza Vickers</b>	<b>N/mm<sup>2</sup> Mpa</b> <i>Résistance à la traction</i> <b>Resistenza a la trazione</b>
25	253	266	854
26	259	273	873
27	265	279	897
28	272	286	919
29	279	294	944
30	287	302	970
31	295	310	995
32	303	318	1024
33	311	327	1052
34	320	336	1082
35	328	345	1111
36	337	355	1139
37	346	364	1168
38	354	373	1198
39	363	382	1227
40	373	392	1262
41	382	402	1296
42	392	412	1327
43	402	423	1362
44	413	434	1401
45	424	446	1442
46	436	459	1481
47	448	471	1524
48	460	484	1572
49	474	499	1625
50	488	513	1675
51	502	528	1733
52	518	545	1793
53	532	560	1845
54	549	578	1912
55	566	596	1979
56	585	615	2050
57	603	634	2121
58	621	654	2200
59		675	
60		698	
61		720	
62		746	
63		773	

*Table de conversion pour valeurs de dureté, extrait de la norme ISO EN 18265;2003, anciennement DIN 50150. Valeurs arrondies*  
*Tabella di conversione per il valore di durezza, estratto da ISO EN 18265; 2003 / precedentemente DIN 50150. Valori arrotondati*

# POUCES-MM — POLLICI-MM

Ø" d <sub>1</sub>	Ø mm	TPI UN											W(BSW)	BSF	G (BSP) Rp	Ø mm	
		UNC	UNF	UNEF	4	6	8	12	16	20	28	32					
0 1/16"	1.52 1.59		80											48		28	7.72
1 2 3/32"	1.85 2.18 2.38	64 56	72 64														
3 4 5 1/8"	2.51 2.84 3.17 3.17	48 40 40	56 48 44											40		28	9.72
6 5/32"	3.50	32	40											32			
8 3/16"	3.96 4.16 4.76	32	36											24	32		
10 12	4.82 5.48	24 24	32 28	32													
7/32"	5.55													24			
1/4"	6.35	20	28	32										20	28	19	13.15
9/32"	7.14														26		
5/16"	7.93	18	24	32					20	28					26		
3/8"	9.52	16	24	32					20	28				16	20	19	16.66
7/16"	11.11	14	20	28					16					14	18		
1/2"	12.70	13	20	28					16					12	16	14	20.95
9/16"	14.28	12	18	24					16	20	28			12	16		
5/8"	15.87	11	18	24				12	16	20	28	32		11	14	14	22.91
11/16"	17.46			24				12	16	20	28	32			14		
3/4"	19.05	10	16	20				12			28	32		10	12	14	26.44
13/16"	20.64			20				12	16		28	32			12		
7/8"	22.22	9	14	20				12	16		28	32		9	11	14	30.20
15/16"	23.81			20				12	16		28	32					
1"	25.40	8	12	20				12	16		28	32		8	10	11	33.24
11/16"	26.99			18			8	12	16	20	28						
11/8"	28.57	7	12	18			8		16	20	28			7	9	11	37.89
13/16"	30.16			18			8	12	16	20	28						
11/4"	31.75	7	12	18			8		16	20	28			7	9	11	41.91
15/16"	33.34			18			8	12	16	20	28						
13/8"	34.92	6	12	18			8		16	20	28			6	8	11	44.32
17/16"	36.51			18			8	12	16	20	28						
11/2"	38.10	6	12	18		6	8		16	20	28			6	8	11	47.80
19/16"	39.69			18		6	8	12	16	20							
15/8"	41.28			18		6	8	12	16	20				5	8		
111/16"	42.86			18													
13/4"	44.45	5				6	8	12	16	20				5	7	11	53.74
113/16"	46.04					6	8	12	16	20							
17/8"	47.63					6	8	12	16	20				4 1/2			
115/16"	49.21					6	8	12	16	20							
2"	50.80	4 1/2												4 1/2	7	11	59.61
21/8"	53.97					6	8	12	16	20							
21/4"	57.15	4 1/2				6	8	12	16	20				4	6	11	65.71
23/8"	60.32					6	8	12	16	20							
21/2"	63.50	4				6	8	12	16	20				4	6	11	75.18
25/8"	66.67				4	6	8	12	16	20							
23/4"	69.85	4				6	8	12	16	20				3 1/2	6	11	81.53
27/8"	73.02				4	6	8	12	16	20							
3"	76.20	4				6	8	12	16	20				3 1/2	5	11	87.88
31/8"	79.37				4	6	8	12	16								
31/4"	82.55	4				6	8	12	16					3 1/4	5	11	93.98
33/8"	85.72				4	6	8	12	16								
31/2"	88.90	4				6	8	12	16					3 1/4	4 1/2	11	100.33
35/8"	92.07				4	6	8	12	16								
33/4"	95.25	4				6	8	12	16					3	4 1/2	11	106.68
37/8"	98.42				4	6	8	12	16								
4"	101.60	4				6	8	12	16					3	4 1/2	11	113.03



# TABELLE DE CONVERSION — TABELLA DI CONVERSIONE

		Vc m/min															
		1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
		min <sup>-1</sup>															
Ø d <sub>1</sub>	1	318	637	955	1273	1592	1910	2546	3183	3820	4775	6366	7958	9549	12732	15915	19099
	2	159	318	477	637	796	955	1273	1592	1910	2387	3183	3979	4775	6366	7958	9549
	3	106	212	318	424	531	637	849	1061	1273	1592	2122	2653	3183	4244	5305	6366
	4	80	159	239	318	398	477	637	796	955	1194	1592	1989	2387	3183	3979	4775
	5	64	127	191	255	318	382	509	637	764	955	1273	1592	1910	2546	3183	3820
	6	53	106	159	212	265	318	424	531	637	796	1061	1326	1592	2122	2653	3183
	8	40	80	119	159	199	239	318	398	477	597	796	995	1194	1592	1989	2387
	10	32	64	95	127	159	191	255	318	382	477	637	796	955	1273	1592	1910
	12	27	53	80	106	133	159	212	265	318	398	531	663	796	1061	1326	1592
	14	23	45	68	91	114	136	182	227	273	341	455	568	682	909	1137	1364
	16	20	40	60	80	99	119	159	199	239	298	398	497	597	796	995	1194
	18	18	35	53	71	88	106	141	177	212	265	354	442	531	707	884	1061
	20	16	32	48	64	80	95	127	159	191	239	318	398	477	637	796	955
	25	13	25	38	51	64	76	102	127	153	191	255	318	382	509	637	764
	30	11	21	32	42	53	64	85	106	127	159	212	265	318	424	531	637
	35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
	40	8	16	24	32	40	48	64	80	95	119	159	199	239	318	398	477
	45	7	14	21	28	35	42	57	71	85	106	141	177	212	283	354	424
	50	6	13	19	25	32	38	51	64	76	95	127	159	191	255	318	382

# PERÇAGE D'AVANT-TROUS — PREFORI PER FILETTARE

## M ISO DIN 14 4H5H (recommandé / consigliato)

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
0.3	0.080	0.223	0.240	0.23
0.35	0.090	0.264	0.286	0.28
0.4	0.100	0.304	0.330	0.32
0.5	0.125	0.380	0.415	0.41
0.6	0.150	0.456	0.502	0.50
0.7	0.175	0.532	0.585	0.58
0.8	0.200	0.608	0.665	0.66
0.9	0.225	0.684	0.745	0.74



## MF DIN 13, ISO 261, \*4H / 6H

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
*1.4	0.20	1.183	1.221	1.20
*1.6	0.20	1.383	1.421	1.40
*1.8	0.20	1.583	1.621	1.60
*2	0.20	1.783	1.821	1.80
*2	0.25	1.729	1.774	1.75
*2.2	0.20	1.983	2.021	2.00
*2.2	0.25	1.929	1.974	1.95
*2.3	0.20	2.083	2.121	2.10
*2.3	0.25	2.029	2.074	2.05
*2.5	0.20	2.283	2.321	2.30
*2.5	0.25	2.229	2.274	2.25
2.5	0.35	2.121	2.221	2.15
2.6	0.35	2.221	2.321	2.25
3	0.35	2.621	2.721	2.65
3.5	0.35	3.121	3.221	3.15
4	0.50	3.459	3.599	3.50
4.5	0.50	3.959	4.099	4.00
5	0.50	4.459	4.599	4.50
5.5	0.50	4.959	5.099	5.00
6	0.75	5.188	5.378	5.25
7	0.75	6.188	6.378	6.25
8	0.75	7.188	7.378	7.25
8	1.00	6.917	7.153	7.00
9	0.75	8.188	8.378	8.25
9	1.00	7.917	8.153	8.00
10	0.75	9.188	9.378	9.25
10	1.00	8.917	9.153	9.00
10	1.25	8.647	8.912	8.80
11	0.75	10.188	10.378	10.25
11	1.00	9.917	10.153	10.00
12	1.00	10.917	11.153	11.00
12	1.25	10.647	10.912	10.80
12	1.50	10.376	10.676	10.50
14	1.00	12.917	13.153	13.00
14	1.25	12.647	12.912	12.80
14	1.50	12.376	12.676	12.50
15	1.00	13.917	14.153	14.00
15	1.50	13.376	13.676	13.50
16	1.00	14.917	15.153	15.00
16	1.50	14.376	14.676	14.50
17	1.00	15.917	16.153	16.00
17	1.50	15.376	15.676	15.50
18	1.00	16.917	17.153	17.00
18	1.50	16.376	16.676	16.50
18	2.00	15.835	16.210	16.00
20	1.00	18.917	19.153	19.00
20	1.50	18.376	18.676	18.50
20	2.00	17.835	18.210	18.00
22	1.00	20.917	21.153	21.00
22	1.50	20.376	20.676	20.50
22	2.00	19.835	20.210	20.00
24	1.00	22.917	23.153	23.00
24	1.50	22.376	22.676	22.50
24	2.00	21.835	22.210	22.00
25	1.00	23.917	24.153	24.00
25	1.50	23.376	23.676	23.50
25	2.00	22.835	23.210	23.00



## M DIN 13, ISO 261, \*5H / 6H

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
*1	0.25	0.729	0.785	0.75
*1.1	0.25	0.829	0.885	0.85
*1.2	0.25	0.929	0.985	0.95
*1.4	0.30	1.075	1.142	1.10
1.6	0.35	1.221	1.321	1.25
1.7	0.35	1.321	1.421	1.35
1.8	0.35	1.421	1.521	1.45
2	0.40	1.567	1.679	1.60
2.2	0.45	1.713	1.838	1.75
2.3	0.40	1.867	1.979	1.90
2.5	0.45	2.013	2.138	2.05
2.6	0.45	2.113	2.238	2.15
3	0.50	2.459	2.599	2.50
3.5	0.60	2.850	3.010	2.90
4	0.70	3.242	3.422	3.30
4.5	0.75	3.688	3.878	3.75
5	0.80	4.134	4.334	4.20
6	1.00	4.917	5.153	5.00
7	1.00	5.917	6.153	6.00
8	1.25	6.647	6.912	6.80
9	1.25	7.647	7.912	7.80
10	1.50	8.376	8.676	8.50
11	1.50	9.376	9.676	9.50
12	1.75	10.106	10.441	10.20
14	2.00	11.835	12.210	12.00
16	2.00	13.835	14.210	14.00
18	2.50	15.294	15.744	15.50
20	2.50	17.294	17.744	17.50
22	2.50	19.294	19.744	19.50
24	3.00	20.752	21.252	21.00
27	3.00	23.752	24.252	24.00
30	3.50	26.211	26.771	26.50
33	3.50	29.211	29.771	29.50
36	4.00	31.670	32.270	32.00
39	4.00	34.670	35.270	35.00
42	4.50	37.129	37.799	37.50
45	4.50	40.129	40.799	40.50
48	5.00	42.587	43.297	43.00
52	5.00	46.587	47.297	47.00
56	5.50	50.046	50.796	50.50



# PERÇAGE D'AVANT-TROUS — PREFORI PER FILETTARE

## MF DIN 13, ISO 261, 6H

Ø	P	Ø Noyau - Ø Nocciole		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
27	1.50	25.376	25.676	25.50
27	2.00	24.835	25.210	25.00
28	1.00	26.917	27.153	27.00
28	1.50	26.376	26.676	26.50
28	2.00	25.835	26.210	26.00
30	1.00	28.917	29.153	29.00
30	1.50	28.376	28.676	28.50
30	2.00	27.835	28.210	28.00
32	1.50	30.376	30.676	30.50
32	2.00	29.835	30.210	30.00
33	1.50	31.376	31.676	31.50
33	2.00	30.835	31.210	31.00
35	1.50	33.376	33.676	33.50
36	1.50	34.376	34.676	34.50
36	2.00	33.835	34.210	34.00
36	3.00	32.752	33.252	33.00
39	1.50	37.376	37.676	37.50
39	2.00	36.835	37.210	37.00
39	3.00	35.752	36.252	36.00
40	1.50	38.376	38.676	38.50
40	2.00	37.835	38.210	38.00
40	3.00	36.752	37.252	37.00
42	1.50	40.376	40.676	40.50
42	2.00	39.835	40.210	40.00
42	3.00	38.752	39.252	39.00
45	1.50	43.376	43.676	43.50
45	2.00	42.835	43.210	43.00
45	3.00	41.752	42.252	42.00
48	1.50	46.376	46.676	46.50
48	2.00	45.835	46.210	46.00
48	3.00	44.752	45.252	45.00
50	1.50	48.376	48.676	48.50
50	2.00	47.835	48.210	48.00
50	3.00	46.752	47.252	47.00
52	1.50	50.376	50.676	50.50
52	2.00	49.835	50.210	50.00
52	3.00	48.752	49.252	49.00
55	2.00	52.835	53.210	53.00
60	2.00	57.835	58.210	58.00

## MF EN 60423:1994, 7H

Ø	P	Ø Noyau - Ø Nocciole		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
8	1.00	6.917	7.217	7.00
10	1.00	8.917	9.217	9.00
12	1.50	10.376	10.751	10.50
16	1.50	14.376	14.751	14.50
20	1.50	18.376	18.751	18.50
25	1.50	23.376	23.751	23.50
32	1.50	30.376	30.751	30.50
40	1.50	38.376	38.751	38.50
63	1.50	61.376	61.751	61.50

## UNC ASME B1.1, 2B


Ø"	P	P	Ø Noyau - Ø Nocciole		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
1	64	0.397	1.425	1.582	1.45
2	56	0.454	1.695	1.871	1.75
3	48	0.529	1.941	2.146	2.00
4	40	0.635	2.157	2.385	2.25
5	40	0.635	2.487	2.697	2.55
6	32	0.794	2.642	2.895	2.75
8	32	0.794	3.302	3.530	3.40
10	24	1.058	3.683	3.962	3.80
12	24	1.058	4.344	4.597	4.40
1/4"	20	1.270	4.979	5.257	5.10
5/16"	18	1.411	6.401	6.731	6.50
3/8"	16	1.588	7.798	8.153	8.00
7/16"	14	1.814	9.144	9.550	9.30
1/2"	13	1.954	10.592	11.023	10.80
9/16"	12	2.117	11.989	12.446	12.20
5/8"	11	2.309	13.386	13.868	13.60
3/4"	10	2.540	16.307	16.840	16.60
7/8"	9	2.822	19.177	19.761	19.50
1"	8	3.175	21.971	22.606	22.30
1 1/8"	7	3.629	24.638	25.349	25.00
1 1/4"	7	3.629	27.813	28.524	28.20
1 3/8"	6	4.233	30.353	31.115	30.80
1 1/2"	6	4.233	33.528	34.290	34.00
1 3/4"	5	5.080	38.964	39.827	39.50
2"	4.5	5.644	44.679	45.593	45.30

## UNJC ISO 3161:1999, 3B


Ø"	P	P	Ø Noyau - Ø Nocciole		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
4	40	0.635	2.228	2.393	2.30
5	40	0.635	2.558	2.723	2.60
6	32	0.794	2.733	2.939	2.80
8	32	0.794	3.393	3.599	3.45
10	24	1.058	3.795	4.064	3.90
12	24	1.058	4.455	4.704	4.55
1/4"	20	1.270	5.113	5.387	5.20
5/16"	18	1.411	6.563	6.833	6.70
3/8"	16	1.588	7.978	8.255	8.10
7/16"	14	1.814	9.347	9.639	9.40
1/2"	13	1.954	10.798	11.095	10.90
9/16"	12	2.117	12.228	12.482	12.40
5/8"	11	2.309	13.627	13.904	13.80
3/4"	10	2.540	16.576	16.881	16.70

# PERÇAGE D'AVANT-TROUS — PREFORI PER FILETTARE


## UNF ASME B1.1, 2B

Ø"	P	P	Ø Noyau - Ø Nocciolo		
d <sub>1</sub>	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	80	0.318	1.182	1.305	1.20
1	72	0.353	1.474	1.612	1.50
2	64	0.397	1.756	1.912	1.80
3	56	0.454	2.025	2.197	2.10
4	48	0.529	2.271	2.458	2.35
5	44	0.577	2.551	2.740	2.60
6	40	0.635	2.820	3.022	2.90
8	36	0.706	3.404	3.606	3.50
10	32	0.794	3.963	4.165	4.05
12	28	0.907	4.496	4.724	4.60
1/4"	28	0.907	5.360	5.588	5.50
5/16"	24	1.058	6.782	7.035	6.90
3/8"	24	1.058	8.382	8.636	8.50
7/16"	20	1.270	9.729	10.033	9.80
1/2"	20	1.270	11.329	11.607	11.40
9/16"	18	1.411	12.751	13.081	12.90
5/8"	18	1.411	14.351	14.681	14.50
3/4"	16	1.588	17.323	17.678	17.50
7/8"	14	1.814	20.270	20.675	20.40
1"	12	2.117	23.114	23.571	23.30
1 1/8"	12	2.117	26.289	26.746	26.50
1 1/4"	12	2.117	29.464	29.921	29.70
1 3/8"	12	2.117	32.639	33.096	32.80
1 1/2"	12	2.117	35.814	36.271	36.00


## UNJF ISO 3161:1999, 3B

Ø"	P	P	Ø Noyau - Ø Nocciolo		
d <sub>1</sub>	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	80	0.318	1.217	1.298	1.25
1	72	0.353	1.511	1.603	1.55
2	64	0.397	1.798	1.902	1.85
3	56	0.454	2.073	2.189	2.10
4	48	0.529	2.329	2.466	2.35
5	44	0.577	2.614	2.764	2.65
6	40	0.635	2.888	3.053	2.95
8	36	0.706	3.480	3.663	3.55
10	32	0.794	4.054	4.255	4.10
12	28	0.907	4.602	4.816	4.70
1/4"	28	0.907	5.466	5.662	5.55
5/16"	24	1.058	6.906	7.109	7.00
3/8"	24	1.058	8.494	8.679	8.60
7/16"	20	1.270	9.876	10.084	10.00
1/2"	20	1.270	11.463	11.661	11.55
9/16"	18	1.411	12.913	13.122	13.05
5/8"	18	1.411	14.501	14.702	14.60
3/4"	16	1.588	17.506	17.722	17.60
7/8"	14	1.814	20.460	20.706	20.60
1"	12	2.117	23.340	23.594	23.50


## UNEF ASME B1.1, 2B

Ø"	P	P	Ø Noyau - Ø Nocciolo		
d <sub>1</sub>	TPI	mm	Ø mini	Ø maxi	Ø guide line
12	32	0.794	4.623	4.826	4.70
1/4"	32	0.794	5.487	5.689	5.60
5/16"	32	0.794	7.087	7.264	7.20
3/8"	32	0.794	8.662	8.864	8.75
7/16"	28	0.907	10.135	10.337	10.25
1/2"	28	0.907	11.710	11.938	11.85
9/16"	24	1.058	13.132	13.385	13.20
5/8"	24	1.058	14.732	14.986	14.80
11/16"	24	1.058	16.307	16.560	16.40
3/4"	20	1.270	17.679	17.957	17.80
13/16"	20	1.270	19.254	19.558	19.40
7/8"	20	1.270	20.854	21.132	21.00
1"	20	1.270	24.029	24.307	24.10

## UN ASME B1.1, 2B

Ø"	P	P	Ø Noyau - Ø Nocciolo		
d <sub>1</sub>	TPI	mm	Ø mini	Ø maxi	Ø guide line
5/16"	20	1.270	6.554	6.858	6.70
3/8"	20	1.270	8.154	8.432	8.30
9/16"	20	1.270	12.904	13.208	13.00
5/8"	20	1.270	14.504	14.782	14.60
1 1/8"	8	3.175	25.146	25.781	25.50
1 1/4"	8	3.175	28.321	28.956	28.70
1 3/8"	8	3.175	31.496	32.131	31.80
1 1/2"	8	3.175	34.671	35.306	35.00
1 5/8"	8	3.175	37.846	38.481	38.20
1 3/4"	8	3.175	41.021	41.656	41.40
1 7/8"	8	3.175	44.196	44.831	44.50
2"	8	3.175	47.371	48.006	47.70
2 1/4"	8	3.175	53.721	54.356	54.10
2 1/2"	8	3.175	60.071	60.706	60.40

## UNS ASME B1.1, 2B

Ø"	P	P	Ø Noyau - Ø Nocciolo		
d <sub>1</sub>	TPI	mm	Ø mini	Ø maxi	Ø guide line
10	36	0.706	4.064	4.216	4.10
10	40	0.635	4.141	4.292	4.20
10	56	0.454	4.344	4.445	4.40
1/4"	36	0.706	5.588	5.740	5.65
1/4"	40	0.635	5.665	5.816	5.70
1/4"	48	0.529	5.766	5.892	5.80
1/4"	56	0.454	5.868	5.969	5.90
5/16"	36	0.706	7.163	7.340	7.25
3/8"	36	0.706	8.763	8.940	8.80
7/16"	24	1.058	9.957	10.210	10.00
1/2"	24	1.058	11.557	11.811	11.60
1"	14	1.814	23.445	23.825	23.60

# PERÇAGE D'AVANT-TROUS — PREFORI PER FILETTARE

## G (BSP) DIN EN ISO 228

Ø"	P	P	Ø Noyau - Ø Nocciolo		Ø guide line
			Ø mini	Ø maxi	
d <sub>i</sub>	TPI	mm			
1/16"	28	0.907	6.561	6.843	6.75
1/8"	28	0.907	8.566	8.848	8.75
1/4"	19	1.337	11.445	11.890	11.60
3/8"	19	1.337	14.950	15.395	15.20
1/2"	14	1.814	18.631	19.172	18.90
5/8"	14	1.814	20.587	21.128	20.90
3/4"	14	1.814	24.117	24.658	24.40
7/8"	14	1.814	27.877	28.418	28.20
1"	11	2.309	30.291	30.931	30.70
1 1/8"	11	2.309	34.939	35.579	35.30
1 1/4"	11	2.309	38.952	39.592	39.30
1 3/8"	11	2.309	41.365	42.005	41.80
1 1/2"	11	2.309	44.845	45.485	45.20
1 3/4"	11	2.309	50.788	51.428	51.20
2"	11	2.309	56.656	57.296	57.00
2 1/4"	11	2.309	62.752	63.392	63.10
2 1/2"	11	2.309	72.226	72.866	72.60
3"	11	2.309	84.926	85.566	85.30

## W (BSW) BS 84, (DIN 11 - 1970)

Ø"	P	P	Ø Noyau - Ø Nocciolo		Ø guide line
			Ø mini	Ø maxi	
d <sub>i</sub>	TPI	mm			
(3/32")	48				1.80
1/8"	40	0.635	2.362	2.591	2.50
(5/32")	32				3.10
3/16"	24	1.058	3.406	3.744	3.60
(7/32")	24				4.40
1/4"	20	1.270	4.724	5.156	4.90
5/16"	18	1.411	6.129	6.588	6.40
3/8"	16	1.588	7.493	7.988	7.70
7/16"	14	1.814	8.791	9.332	9.10
1/2"	12	2.117	9.987	10.589	10.30
5/8"	11	2.309	12.918	13.558	13.30
3/4"	10	2.540	15.799	16.484	16.20
7/8"	9	2.822	18.613	19.355	19.25
1"	8	3.175	21.336	22.149	21.90

## PG DIN 40430

Ø	P	P	Ø Noyau - Ø Nocciolo		Ø guide line
			Ø mini	Ø maxi	
d <sub>i</sub>	TPI	mm			
7	20	1.270	11.28	11.43	11.35
9	18	1.411	13.86	14.01	13.90
11	18	1.411	17.26	17.41	17.30
13.5	18	1.411	19.06	19.21	19.10
16	18	1.411	21.16	21.31	21.20
21	16	1.588	26.78	27.03	26.80
29	16	1.588	35.48	35.73	35.50
36	16	1.588	45.48	45.73	45.50
42	16	1.588	52.48	52.73	52.50
48	16	1.588	57.78	58.03	57.80

## TR ISO 2901-2904, DIN 103, 7H

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>i</sub>	mm			
10	2	8	8.236	8.20
12	3	9	9.315	9.25
14	3	11	11.315	11.25
16	4	12	12.375	12.25
18	4	14	14.375	14.25
20	4	16	16.375	16.25
22	5	17	17.450	17.25
24	5	19	19.450	19.25
26	5	21	21.450	21.25
28	5	23	23.450	23.25
30	6	24	24.500	24.25
32	6	26	26.500	26.25

## S NIHS 06-10, 3G5H (tol. standard - toll. standard)

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>i</sub>	mm			
0.3	0.080	0.223	0.240	0.23
0.35	0.090	0.264	0.286	0.28
0.4	0.100	0.304	0.330	0.32
0.5	0.125	0.380	0.415	0.41
0.6	0.150	0.456	0.502	0.50
0.7	0.175	0.532	0.585	0.58
0.8	0.200	0.608	0.665	0.66
0.9	0.225	0.684	0.745	0.74
1	0.250	0.760	0.825	0.82
1.2	0.250	0.960	1.025	1.02
1.4	0.300	1.112	1.185	1.18

## SF Fine Thread NIHS 06-10, 3G5H (tol. standard - toll. standard)

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>i</sub>	mm			
1.4	0.200	1.208	1.265	1.26
1.6	0.200	1.408	1.465	1.46
1.8	0.200	1.608	1.665	1.66
2	0.200	1.808	1.865	1.86
2.2	0.200	2.008	2.065	2.06
2.2	0.250	1.960	2.025	2.02
2.5	0.200	2.308	2.365	2.36
2.5	0.250	2.260	2.325	2.32

## SL Safelock SL 15-01

Ø	P	Ø Noyau - Ø Nocciolo		Ø guide line
		Ø mini	Ø maxi	
d <sub>i</sub>	mm			
0.3	0.060	0.264	0.278	0.27
0.35	0.060	0.314	0.328	0.32
0.4	0.080	0.356	0.372	0.36
0.5	0.100	0.448	0.466	0.46
0.6	0.125	0.538	0.559	0.55
0.7	0.150	0.628	0.651	0.64
0.8	0.150	0.728	0.751	0.74
0.9	0.175	0.818	0.844	0.83
1	0.200	0.908	0.936	0.92
1.2	0.200	1.108	1.136	1.12
1.4	0.250	1.288	1.321	1.30

# DIAMÈTRE DE TOURNAGE — DIAMETRI DI TORNITURA

## M DIN 13, ISO 261, \*6h / 6g

Ø	P	Ø Ext. vis - Ø Est. vite		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
*1	0.25	0.933	1.000	0.97
*1.1	0.25	1.033	1.100	1.07
*1.2	0.25	1.133	1.200	1.17
*1.4	0.30	1.325	1.400	1.36
1.6	0.35	1.496	1.581	1.54
1.7	0.35	1.596	1.681	1.64
1.8	0.35	1.696	1.781	1.74
2	0.40	1.886	1.981	1.93
2.2	0.45	2.080	2.180	2.13
2.3	0.40	2.186	2.300	2.23
2.5	0.45	2.380	2.480	2.43
2.6	0.45	2.480	2.600	2.53
3	0.50	2.874	2.980	2.92
3.5	0.60	3.354	3.479	3.41
4	0.70	3.838	3.978	3.91
4.5	0.75	4.338	4.478	4.40
5	0.80	4.826	4.976	4.90
6	1.00	5.794	5.974	5.88
7	1.00	6.794	6.974	6.88
8	1.25	7.760	7.972	7.87
9	1.25	8.760	8.972	8.87
10	1.50	9.732	9.968	9.85
11	1.50	10.732	10.968	10.85
12	1.75	11.701	11.966	11.83
14	2.00	13.682	13.962	13.82
16	2.00	15.682	15.962	15.82
18	2.50	17.623	17.958	17.79
20	2.50	19.623	19.958	19.79
22	2.50	21.623	21.958	21.79
24	3.00	23.577	23.952	23.76
27	3.00	26.577	26.952	26.76
30	3.50	29.522	29.947	29.73
33	3.50	32.522	32.947	32.73
36	4.00	35.465	35.940	35.70
39	4.00	38.465	38.940	38.70
42	4.50	41.437	41.937	41.69
45	4.50	44.437	44.937	44.69
48	5.00	47.399	47.929	47.66
52	5.00	51.399	51.929	51.66
56	5.50	55.365	55.925	55.65

## MF DIN 13, ISO 261, 6g

Ø	P	Ø Ext. vis - Ø Est. vite		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
8	1.00	7.794	7.974	7.88
9	0.75	8.838	8.978	8.90
9	1.00	8.794	8.974	8.88
10	0.75	9.838	9.978	9.90
10	1.00	9.794	9.974	9.88
10	1.25	9.760	9.972	9.86
11	0.75	10.838	10.978	10.90
11	1.00	10.794	10.974	10.88
12	1.00	11.794	11.974	11.88
12	1.25	11.760	11.972	11.86
12	1.50	11.732	11.968	11.85
14	1.00	13.794	13.974	13.88
14	1.25	13.760	13.972	13.86
14	1.50	13.732	13.968	13.85
15	1.00	14.794	14.974	14.88
15	1.50	14.732	14.968	14.85
16	1.00	15.794	15.974	15.88
16	1.50	15.732	15.968	15.85
17	1.00	16.794	16.974	16.88
17	1.50	16.732	16.968	16.85
18	1.00	17.794	17.974	17.88
18	1.50	17.732	17.968	17.85
18	2.00	17.682	17.962	17.82
20	1.00	19.794	19.974	19.88
20	1.50	19.732	19.968	19.85
20	2.00	19.682	19.962	19.82
22	1.00	21.794	21.974	21.88
22	1.50	21.732	21.968	21.85
22	2.00	21.682	21.962	21.82
24	1.00	23.794	23.974	23.88
24	1.50	23.732	23.968	23.85
24	2.00	23.682	23.962	23.82
25	1.00	24.794	24.974	24.88
25	1.50	24.732	24.968	24.85
25	2.00	24.682	24.962	24.82
27	1.00	26.794	26.974	26.88
27	1.50	26.732	26.968	26.85
27	2.00	26.682	26.962	26.82
28	1.00	27.794	27.974	27.88
28	1.50	27.732	27.968	27.85
28	2.00	27.682	27.962	27.82
30	1.00	29.794	29.974	29.88
30	1.50	29.732	29.968	29.85
30	2.00	29.682	29.962	29.82
30	3.00	29.577	29.952	29.76
32	1.50	31.732	31.968	31.85
32	2.00	31.682	31.962	31.82
33	1.50	32.732	32.968	32.85
33	2.00	32.682	32.962	32.82
33	3.00	32.577	32.952	32.76
35	1.50	34.732	34.968	34.85
36	1.50	35.732	35.968	35.85
36	2.00	35.682	35.962	35.82
36	3.00	35.577	35.952	35.76
39	1.50	38.732	38.968	38.85
39	2.00	38.682	38.962	38.82
39	3.00	38.577	38.952	38.76

## MF DIN 13, ISO 261, 6g

Ø	P	Ø Ext. vis - Ø Est. vite		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
2.5	0.35	2.396	2.481	2.44
3	0.35	2.896	2.981	2.94
3.5	0.35	3.396	3.481	3.44
4	0.50	3.874	3.980	3.93
4.5	0.50	4.374	4.480	4.43
5	0.50	4.874	4.980	4.93
5.5	0.50	5.374	5.480	5.43
6	0.75	5.838	5.978	5.90
7	0.75	6.838	6.978	6.90
8	0.75	7.838	7.978	7.90



# DIAMÈTRE DE TOURNAGE — DIAMETRI DI TORNITURA

## MF DIN 13, ISO 261, 6g

Ø	P	Ø Ext. vis - Ø Est. vite		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
40	1.50	39.732	39.968	39.85
40	2.00	39.682	39.962	39.82
40	3.00	39.577	39.952	39.76
42	1.50	41.732	41.968	41.85
42	2.00	41.682	41.962	41.82
42	3.00	41.577	41.952	41.76
45	1.50	44.732	44.968	44.85
45	2.00	44.682	44.962	44.82
45	3.00	44.577	44.952	44.76
48	1.50	47.732	47.968	47.85
48	2.00	47.682	47.962	47.82
48	3.00	47.577	47.952	47.76
50	1.50	49.732	49.968	49.85
50	2.00	49.682	49.962	49.82
50	3.00	49.577	49.952	49.76
52	1.50	51.732	51.968	51.85
52	2.00	51.682	51.962	51.82
52	3.00	51.577	51.952	51.76
52	4.00	51.465	51.940	51.70



## UNF ASME B1.1, 2A

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
0	80	0.318	1.431	1.511	1.47
1	72	0.353	1.751	1.838	1.79
2	64	0.397	2.073	2.169	2.12
3	56	0.454	2.393	2.496	2.44
4	48	0.529	2.713	2.827	2.77
5	44	0.577	3.036	3.157	3.10
6	40	0.635	3.356	3.484	3.42
8	36	0.706	4.006	4.145	4.08
10	32	0.794	4.651	4.803	4.73
12	28	0.907	5.296	5.461	5.38
1/4"	28	0.907	6.160	6.324	6.24
5/16"	24	1.058	7.727	7.909	7.82
3/8"	24	1.058	9.315	9.497	9.41
7/16"	20	1.270	10.874	11.079	10.98
1/2"	20	1.270	12.462	12.666	12.56
9/16"	18	1.411	14.031	14.251	14.14
5/8"	18	1.411	15.619	15.839	15.73
3/4"	16	1.588	18.774	19.011	18.89
7/8"	14	1.814	21.923	22.184	22.05
1"	12	2.117	25.065	25.354	25.21
1 1/8"	12	2.117	28.240	28.529	28.38
1 1/4"	12	2.117	31.415	31.704	31.56
1 3/8"	12	2.117	34.588	34.876	34.73
1 1/2"	12	2.117	37.763	38.051	37.91



## UNC ASME B1.1, 2A

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
1	64	0.397	1.743	1.838	1.79
2	56	0.454	2.066	2.169	2.12
3	48	0.529	2.383	2.496	2.44
4	40	0.635	2.695	2.824	2.76
5	40	0.635	3.026	3.154	3.09
6	32	0.794	3.333	3.484	3.41
8	32	0.794	3.991	4.142	4.07
10	24	1.058	4.618	4.800	4.71
12	24	1.058	5.279	5.461	5.37
1/4"	20	1.270	6.117	6.322	6.22
5/16"	18	1.411	7.687	7.907	7.80
3/8"	16	1.588	9.254	9.491	9.37
7/16"	14	1.814	10.816	11.076	10.95
1/2"	13	1.954	12.386	12.661	12.52
9/16"	12	2.117	13.958	14.246	14.10
5/8"	11	2.309	15.528	15.834	15.68
3/4"	10	2.540	18.677	19.004	18.84
7/8"	9	2.822	21.824	22.176	22.00
1"	8	3.175	24.969	25.349	25.16
1 1/8"	7	3.629	28.103	28.519	28.31
1 1/4"	7	3.629	31.278	31.694	31.49
1 3/8"	6	4.233	34.402	34.864	34.63
1 1/2"	6	4.233	37.577	38.039	37.81
1 3/4"	5	5.080	43.860	44.381	44.12
2"	4.5	5.644	50.168	50.726	50.45
2 1/4"	4.5	5.644	56.518	57.076	56.80
2 1/2"	4	6.350	62.817	63.421	63.12
2 3/4"	4	6.350	69.165	69.768	69.47
3"	4	6.350	75.515	76.118	75.82
3 1/4"	4	6.350	81.862	82.466	82.16
3 1/2"	4	6.350	88.212	88.816	88.51
3 3/4"	4	6.350	94.560	95.163	94.86
4"	4	6.350	100.910	101.513	101.21



## UNEF ASME B1.1, 2A

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
12	32	0.794	5.312	5.463	5.39
1/4"	32	0.794	6.173	6.324	6.25
5/16"	32	0.794	7.760	7.912	7.84
3/8"	32	0.794	9.348	9.499	9.42
7/16"	28	0.907	10.920	11.084	11.00
1/2"	28	0.907	12.507	12.672	12.59
9/16"	24	1.058	14.075	14.257	14.17
5/8"	24	1.058	15.662	15.844	15.75
11/16"	24	1.058	17.250	17.432	17.34
3/4"	20	1.270	18.812	19.016	18.91
13/16"	20	1.270	20.339	20.604	20.50
7/8"	20	1.270	21.987	22.191	22.09
15/16"	20	1.270	23.572	23.776	23.67
1"	20	1.270	25.159	25.364	25.26
1 1/8"	18	1.411	28.319	28.539	28.43
1 1/4"	18	1.411	31.491	31.711	31.60
1 1/2"	18	1.411	37.841	38.061	37.95



## UN ASME B1.1, 2A

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
5/16"	20	1.270	7.702	7.907	7.80
3/8"	20	1.270	9.289	9.494	9.39
9/16"	20	1.270	14.049	14.254	14.15
5/8"	20	1.270	15.637	15.841	15.74



# DIAMÈTRE DE TOURNAGE — DIAMETRI DI TORNITURA

## UN ASME B1.1, 2A

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
1 1/8"	8	3.175	28.141	28.521	28.33
1 1/4"	8	3.175	31.316	31.696	31.51
1 3/8"	8	3.175	34.489	34.869	34.68
1 1/2"	8	3.175	37.664	38.044	37.85
1 5/8"	8	3.175	40.839	41.219	41.03
1 3/4"	8	3.175	44.011	44.391	44.20
1 7/8"	8	3.175	47.186	47.566	47.38
2"	8	3.175	50.361	50.741	50.55
2 1/4"	8	3.175	56.709	57.089	56.90
2 1/2"	8	3.175	63.059	63.439	63.25
2 3/4"	8	3.175	69.406	69.786	69.60
3"	8	3.175	75.753	76.133	75.94

## UNS ASME B1.1, 2A

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
10	36	0.706	4.664	4.803	4.73
10	40	0.635	4.674	4.803	4.74
10	56	0.454	4.705	4.808	4.76
1/4"	36	0.706	6.188	6.327	6.26
1/4"	40	0.635	6.198	6.327	6.26
1/4"	48	0.529	6.216	6.329	6.27
1/4"	56	0.454	6.226	6.329	6.28
5/16"	36	0.706	7.775	7.914	7.84
3/8"	36	0.706	9.360	9.499	9.43
7/16"	24	1.058	10.902	11.084	10.99
1/2"	24	1.058	12.487	12.669	12.58
1"	14	1.814	25.096	25.356	25.23

## G (BSP) DIN EN ISO 228

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
1/16"	28	0.907	7.509	7.723	7.62
1/8"	28	0.907	9.514	9.728	9.62
1/4"	19	1.337	12.907	13.157	13.03
3/8"	19	1.337	16.412	16.662	16.54
1/2"	14	1.814	20.671	20.955	20.81
5/8"	14	1.814	22.627	22.911	22.77
3/4"	14	1.814	26.157	26.441	26.30
7/8"	14	1.814	29.917	30.201	30.06
1"	11	2.309	32.889	33.249	33.07
1 1/8"	11	2.309	37.537	37.897	37.72
1 1/4"	11	2.309	41.550	41.910	41.73
1 3/8"	11	2.309	43.963	44.323	44.14
1 1/2"	11	2.309	47.443	47.803	47.62
1 3/4"	11	2.309	53.386	53.746	53.57
2"	11	2.309	59.254	59.614	59.43
2 1/4"	11	2.309	65.276	65.710	65.49
2 1/2"	11	2.309	74.750	75.184	74.97
2 3/4"	11	2.309	81.100	81.534	81.32
3"	11	2.309	87.450	87.884	87.67
3 1/2"	11	2.309	99.896	100.330	100.11

## W (BSW) BS 84

Ø"	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
1/4"	20	1.270	6.165	6.319	6.24
5/16"	18	1.411	7.737	7.904	7.82
3/8"	16	1.588	9.312	9.489	9.40
7/16"	14	1.814	10.884	11.074	10.98
1/2"	12	2.117	12.456	12.662	12.56
5/8"	11	2.309	15.613	15.832	15.72
3/4"	10	2.540	18.771	19.004	18.89
7/8"	9	2.822	21.979	22.225	22.10
1"	8	3.175	25.138	25.400	25.27
1 1/8"	7	3.629	28.296	28.575	28.44
1 1/4"	7	3.629	31.465	31.750	31.61
1 1/2"	6	4.233	37.793	38.100	37.95
1 3/4"	5	5.080	44.117	44.450	44.28
2"	4.5	5.644	50.449	50.800	50.62
2 1/4"	4	6.350	56.779	57.150	56.96
2 1/2"	4	6.350	63.119	63.500	63.31

## PG DIN 40430

Ø	P	P	Ø Ext. vis - Ø Est. vite		Ø guide line
			Ø mini	Ø maxi	
d <sub>1</sub>	TPI	mm			
7	20	1.270	12.3	12.5	12.40
9	18	1.411	15.0	15.2	15.10
11	18	1.411	18.4	18.6	18.50
13.5	18	1.411	20.2	20.4	20.30
16	18	1.411	22.3	22.5	22.40
21	16	1.588	28.0	28.3	28.15
29	16	1.588	36.7	37.0	36.85
36	16	1.588	46.7	47.0	46.85
42	16	1.588	53.7	54.0	53.85
48	16	1.588	59.0	59.3	59.15

## TR ISO 2901-2904, DIN 103, 7e

Ø	P	Ø Ext. vis - Ø Est. vite		Ø guide line
		Ø mini	Ø maxi	
d <sub>1</sub>	mm			
10	2	9.820	10.000	9.91
12	3	11.764	12.000	11.88
14	3	13.764	14.000	13.88
16	4	15.700	16.000	15.85
18	4	17.700	18.000	17.85
20	4	19.700	20.000	19.85
22	5	21.665	22.000	21.83
24	5	23.665	24.000	23.83
26	5	25.665	26.000	25.83
28	5	27.665	28.000	27.83
30	6	29.625	30.000	29.81
32	6	31.625	32.000	31.81



Demande d'offre <input type="checkbox"/>	Résultat test <input type="checkbox"/>	Réclamation <input type="checkbox"/>
Agent : _____		Contact : _____
Client : _____		E-Mail : _____
Tél. ou fax : _____		Date : _____
<hr/>		
<b>1. Type d'outil :</b> _____		
Ø de l'outil : _____		Pas : _____
Série : _____		Revêtement : _____
<hr/>		
<b>2. Groupe matière :</b> _____		
No de matière : _____		Dureté : _____ N/mm <sup>2</sup> /HB/HRC
Norme : _____		Allongement : _____ %
<hr/>		
<b>3. Filetage :</b>		
<input type="checkbox"/> intérieur	<input type="checkbox"/> extérieur	Trou : <input type="checkbox"/> borgne <input type="checkbox"/> débouchant
Longueur filetée : _____ mm		
Avant-trou Ø : _____		Profondeur : _____ mm
Contre-perçage Ø : _____		Prodonfeur : _____ mm
<hr/>		
<b>4. Vitesse de coupe (Vc) :</b> _____ m/min _____ l/min		
Avance (f) : _____ mm/tour		Avance (fz) : _____ mm/dent
<hr/>		
<b>5. Machine :</b> _____		
Position de travail : <input type="checkbox"/> horizontale <input type="checkbox"/> verticale		Fixation outil : <input type="checkbox"/> arrosage par le centre <input type="checkbox"/> pince <input type="checkbox"/> mandrin hydraulique <input type="checkbox"/> Weldon / Whistle Notch <input type="checkbox"/> frettage chaud / froid
<hr/>		
<b>6. Lubrifiant :</b> <input type="checkbox"/> émulsion <input type="checkbox"/> huile <input type="checkbox"/> air <input type="checkbox"/> microlubrification		
Produit : _____		
<hr/>		
<b>7. Raison du changement d'outil</b>		
<input type="checkbox"/> usure	<input type="checkbox"/> filetage non correct (contrôlé avec une jauge)	<input type="checkbox"/> casse de l'outil
		<input type="checkbox"/> erreur programme
<hr/>		
<b>8. Comparaison du rendement</b>		
Outil à l'essai : _____		
Performance et observations : _____		
_____		
_____		
<hr/>		
<b>Remarques :</b> _____		
_____		
_____		

Richiesta d'offerta <input type="checkbox"/>	Risultato test <input type="checkbox"/>	Reclami <input type="checkbox"/>
<b>Agente :</b> _____		<b>Responsabile :</b> _____
<b>Cliente :</b> _____		<b>E-mail :</b> _____
<b>Tel. o fax :</b> _____		<b>Data :</b> _____
<hr/>		
<b>1. Tipo d'utensile :</b> _____		
<b>Ø dell'utensile :</b> _____		<b>Passo :</b> _____
<b>Serie :</b> _____		<b>Rivestimento :</b> _____
<hr/>		
<b>2. Tipo di materiale :</b> _____		
<b>Nr. materiale :</b> _____		<b>Durezza :</b> _____ N/mm <sup>2</sup> /HB/HRC
<b>Norme :</b> _____		<b>Allungamento :</b> _____ %
<hr/>		
<b>3. Filettatura :</b> <input type="checkbox"/> interna <input type="checkbox"/> esterna <b>Foro :</b> <input type="checkbox"/> cieco <input type="checkbox"/> passante		
Lunghezza filettatura : _____ mm		
<b>Ø Preforo :</b> _____		<b>Profondità :</b> _____ mm
<b>Lamatura Ø :</b> _____		<b>Profondità :</b> _____ mm
<hr/>		
<b>4. Velocità di taglio (V<sub>c</sub>) :</b> _____ m/min      _____ l/min		
<b>Avanzamento (f) :</b> _____ mm/giro		<b>Avanzamento (f<sub>z</sub>) :</b> _____ mm/dente
<hr/>		
<b>5. Macchina :</b> _____		
Posizione di lavoro : <input type="checkbox"/> orizzontale <b>Bloccaggio :</b> <input type="checkbox"/> pinza <input type="checkbox"/> Weldon / Whistle Notch		<input type="checkbox"/> lubrificazione centralizzata
<input type="checkbox"/> verticale		<input type="checkbox"/> mandrino idraulico <input type="checkbox"/> calettam. a caldo/ freddo
<hr/>		
<b>6. Lubrificante :</b> <input type="checkbox"/> emulsione <input type="checkbox"/> olio <input type="checkbox"/> aria <input type="checkbox"/> lubrif. minima		
Marca : _____		
<hr/>		
<b>7. Motivi per il cambio dell'utensile :</b> <input type="checkbox"/> usura <input type="checkbox"/> rottura dell'utensile		
<input type="checkbox"/> filettatura non corretta (controllo con calibro)		<input type="checkbox"/> errore programma
<hr/>		
<b>8. Confronto del rendimento</b>		
Utensile in prova : _____		
Performances e osservazioni : _____		
_____		
_____		
<b>Note :</b> _____		
_____		
_____		

## CONDITIONS DE LIVRAISON

<b>Commandes</b>	<i>Les commandes qui ne peuvent être livrées du stock seront confirmées. Les articles qui ne sont plus fabriqués, tout en étant encore mentionnés dans le catalogue, seront considérés comme exécutions spéciales et facturés comme telles. Toute annulation de commande doit être consentie par les deux parties et formulée par écrit.</i>
<b>Offres et confirmations de commandes</b>	<i>Tous les descriptifs figurant dans nos offres, documents les accompagnant, indication de poids, de mesures, illustrations et dessins n'engagent le fournisseur que dans la mesure où il y fait expressément référence.</i>
<b>Prix</b>	<i>Nos prix s'entendent sans TVA, pour livraisons franco départ usine, emballage, port et assurance non compris. En cas d'augmentation de prix, nous nous réservons le droit de facturer les outils confirmés aux nouveaux prix.</i>
<b>Paiement</b>	<i>Nos factures sont payables à 30 jours net. En cas de dépassement du délai de paiement, un intérêt moratoire peut être exigé, à compter de l'échéance et calculé sur la base du taux d'escompte du moment. Les frais de remboursement, d'établissement de traite, etc., sont à la charge de l'acheteur.</i>
<b>Réserve de propriété</b>	<i>La marchandise reste notre entière propriété jusqu'au paiement intégral de son prix total, frais complémentaires inclus.</i>
<b>Expéditions</b>	<i>Les marchandises sont expédiées aux risques et périls du client.</i>
<b>Délais de livraison</b>	<i>Les délais de livraison sont confirmés au plus juste. Toutefois ils n'ont qu'une valeur indicative. En cas de dépassement, aucune indemnité ne peut nous être demandée et les commandes ne peuvent être annulées pour ce motif.</i>
<b>Fabrications spéciales</b>	<i>Pour des raisons techniques de fabrication, nous nous réservons le droit de livrer les quantités d'outils spéciaux commandées avec une tolérance de plus ou moins 15 %, voire de 1 à 2 pièces pour les petites quantités.</i>
<b>Garantie</b>	<i>Seuls les outils reconnus défectueux par le fournisseur seront remplacés gratuitement, sans aucun autre dédommagement.</i>
<b>Réclamations</b>	<i>Toute réclamation doit nous parvenir au plus tard 2 semaines après réception de la marchandise.</i>
<b>Illustrations, dessins et croquis</b>	<i>Nos illustrations, dessins, croquis et autres documents se trouvant dans ce catalogue ne peuvent être ni copiés, ni transmis ou cédés à des tiers. Du fait de l'évolution technique et de l'éventuelle entrée en vigueur de nouvelles normes, les indications figurant dans nos catalogues peuvent subir des modifications et sont donc publiées sans engagement.</i>
<b>Conditions spéciales</b>	<i>En cas de force majeure, interruption partielle ou totale de notre exploitation, nous nous réservons le droit de résilier tout ou en partie nos engagements de livraison.</i>
<b>For</b>	<i>Les litiges sont soumis au droit suisse et le lieu de juridiction dont ils dépendent est Moutier (Suisse).</i>

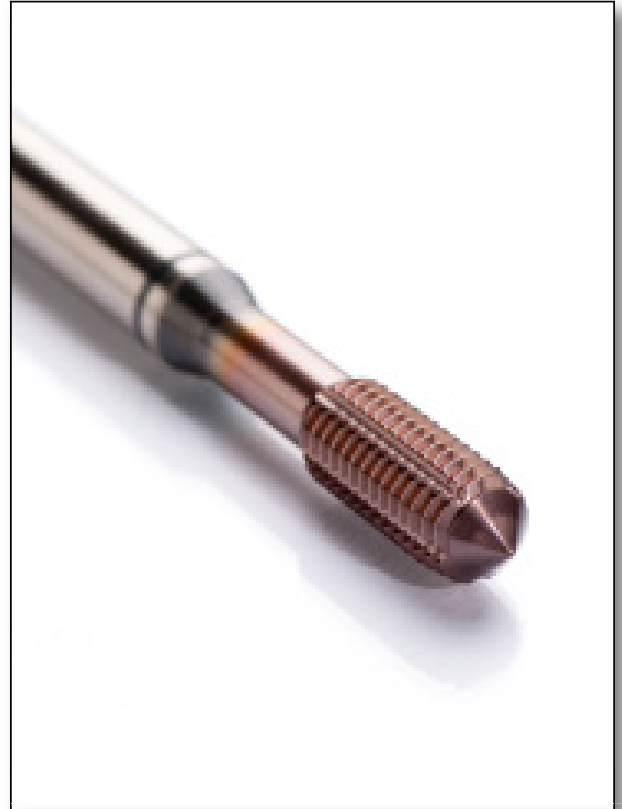
# CONDIZIONI GENERALI DI VENDITA

<b>Ordini</b>	<p>Gli ordini che non possono essere spediti da stock, saranno confermati. Gli articoli usciti di produzione ma ancora menzionati nel catalogo, tutti gli considerati come esecuzione speciale e pertanto fatturati come tali. Annullamenti degli ordini si accettano unicamente su accordo da convenire per iscritto.</p>
<b>Offerte e conferme</b>	<p>A causa del costante sviluppo dei materiali, tutte le descrizioni che figurano nelle nostre offerte, documenti che l'accompagnano, indicazione di peso, misure, illustrazioni e disegni sono indicativi. I dati hanno valore obbligatorio soltanto se quest'ultimi sono specificati espressamente.</p>
<b>Prezzi</b>	<p>I nostri prezzi s'intendono senza TVA, per merce resa franco fabbrica, materiale imballato, porto e assicurazione escluse. In caso di un aumento dei prezzi, ci riserviamo il diritto di fatturare gli utensili confermati con i nuovi prezzi.</p>
<b>Pagamenti</b>	<p>Entro 30 giorni dalla data della fattura, netto. In caso di mancato o ritardato pagamento alla scadenza, potrà essere richiesto un interesse di mora a partire dalla scadenza della fattura e calcolato sulla base del tasso di sconto in vigore al momento. Spese di rimborso, di emissione tratta, ecc., sono a carico dell'acquirente.</p>
<b>Diritti di proprietà</b>	<p>Il materiale resta di nostra proprietà sino al completo pagamento del prezzo totale, spese supplementari incluse.</p>
<b>Spedizione</b>	<p>La spedizione avviene a rischio dell'acquirente.</p>
<b>Termine di consegna</b>	<p>I termini di consegna, pur se indicati con la massima cura, non sono impegnativi. Non si accettano responsabilità relative a richieste di indennità dovute per perdite causate direttamente o conseguentemente a ritardi di consegna.</p>
<b>Consegna utensili speciali</b>	<p>Ci riserviamo il diritto di fornire fino al 15 % in più o in meno della quantità degli utensili speciali ordinati, uno o due pezzi per le piccole quantità.</p>
<b>Garanzia</b>	<p>Utensili riconosciuti difettosi saranno sostituiti dal produttore noi senza spese.</p>
<b>Reclami</b>	<p>Reclami saranno presi in considerazione entro 15 giorni dal ricevimento della merce.</p>
<b>Illustrazioni, disegni e schemi</b>	<p>E' severamente proibito riprodurre o cedere a terzi disegni o altre documentazioni contenute in questo catalogo. A causa dell'evoluzione tecnica e dell'eventuale introduzione di nuove norme, le indicazioni che figurano nel ns. catalogo, possono subire modifiche senza preavviso e sono pertanto da considerarsi non impegnative.</p>
<b>Condizioni speciali</b>	<p>In caso di forza maggiore, interruzione parziale o totale della nostra produzione, ci riserviamo il diritto di annullare, parzialmente o completamente i nostri impegni di consegna.</p>
<b>Foro competente</b>	<p>Le contestazioni sono soggette alla legge svizzera. Il foro competente è Moutier (Svizzera).</p>

# DC PROGRAMME OVERVIEW



THREAD CUTTING



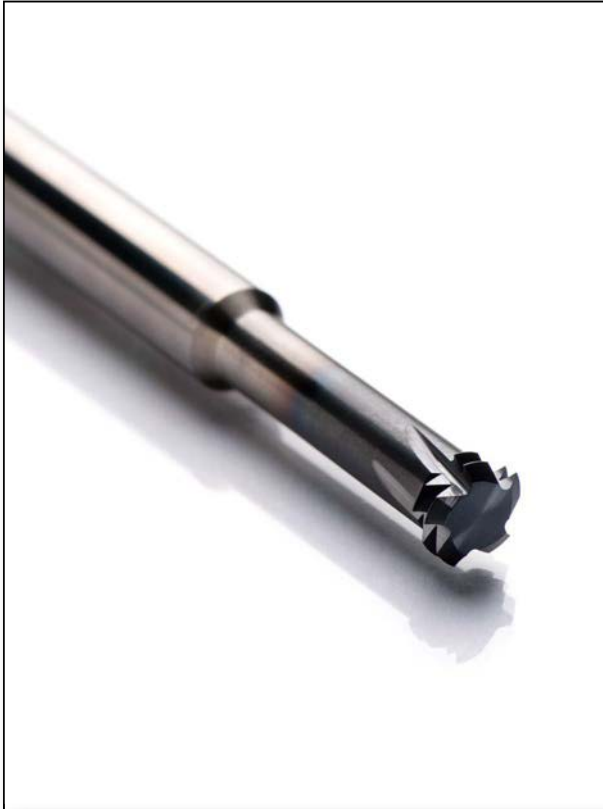
THREAD FORMING



RIGID TAPPING



TAPPING CHUCKS



THREAD WHIRLING



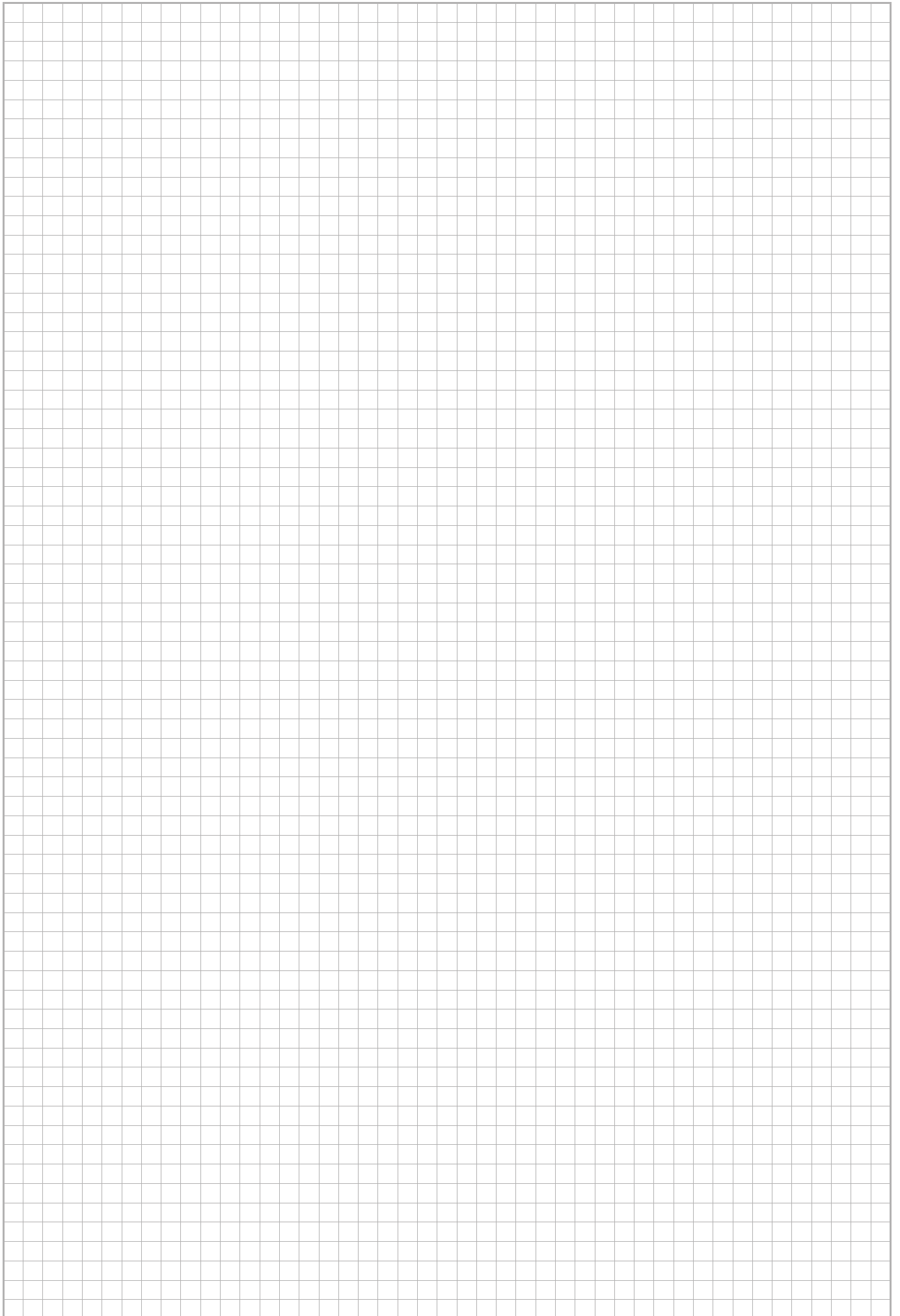
THREAD MILLING

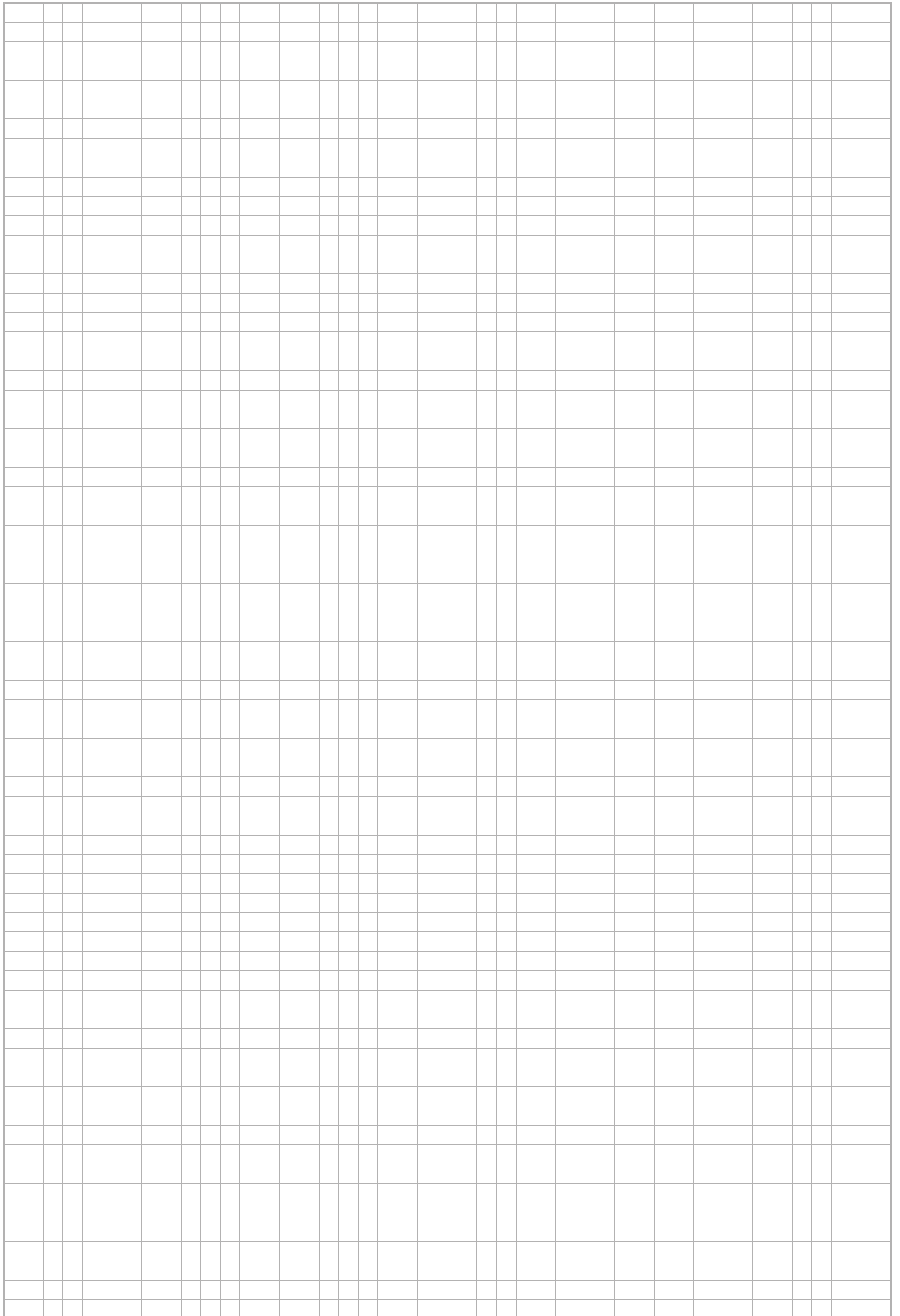


THREAD DIES



THREAD GAUGES









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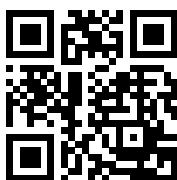


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### **AVERTISSEMENT**

*Une défaillance technique ou la négligence peuvent être à l'origine de la casse partielle ou totale d'un outil de filetage et atteindre à la santé de l'opérateur. Il est impératif de suivre scrupuleusement les dispositions de sécurité et de santé des entreprises actives dans le traitement du métal. Le port de lunettes de protection est indispensable.*

*Le ré-affûtage des outils de filetage provoque de la poussière dangereuse pour la santé et ne peut être exécuté que selon des instructions de sécurité précises.*

### **AVVERTENZA**

Un guasto tecnico o la negligenza possono essere all'origine della rottura parziale o totale di un utensile per filettare e causare un danno alla salute dell'operatore. E'obbligatorio seguire scrupolosamente le disposizioni in materia di sicurezza e a salvaguardia della salute che le società' prescrivono nel campo della lavorazione dei metalli. E'obbligatorio adottare gli occhiali di protezione. La riaffilatura dei maschi crea della polvere pericolosa per la salute e puo' essere eseguita solo seguendo precise istruzioni di sicurezza.

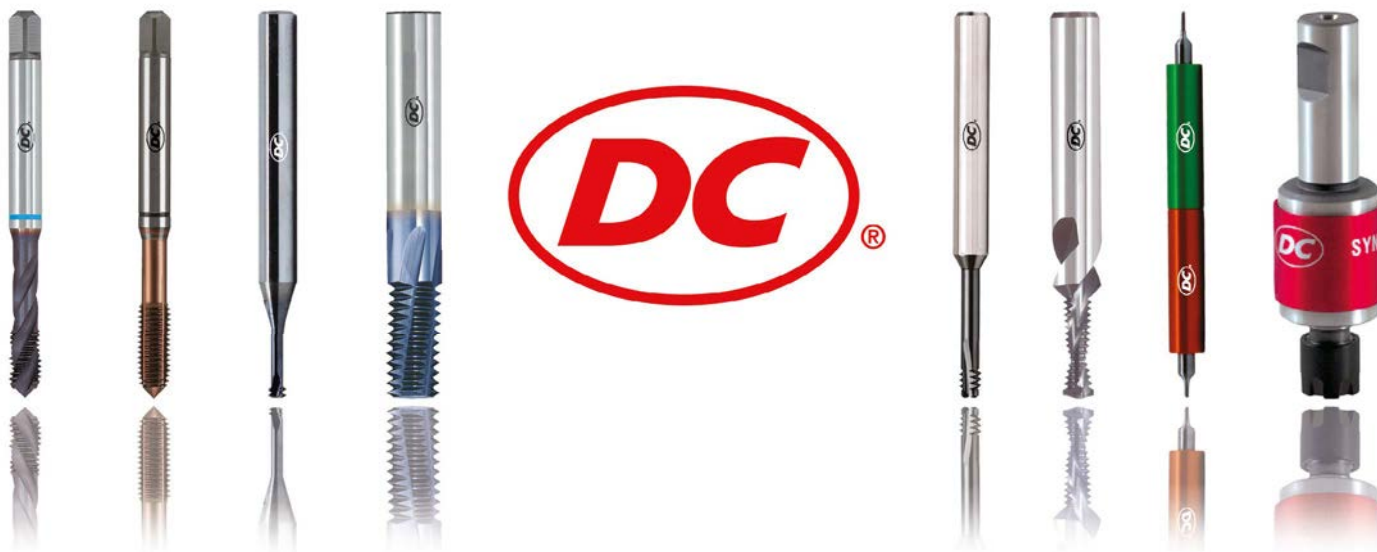
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*Toutes reproductions ou extraits de textes, d'illustrations, de dessins ou de croquis figurant dans ce catalogue sont strictement interdits.*

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Qualsiasi riproduzione di testi, fotografie, disegni o estratti è vietata.





Frese a filettare vorticoso — Frese a filettare — Calibri

Tourbillonneurs — Fraises à fileter — Jauges de filetage



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