PELIZZARI
FAUSTINO
UTENSILI

Gewindewirbler — Gewindefräser — Gewindelehren

Thread whirl cutters — Thread milling cutters — Thread gauges

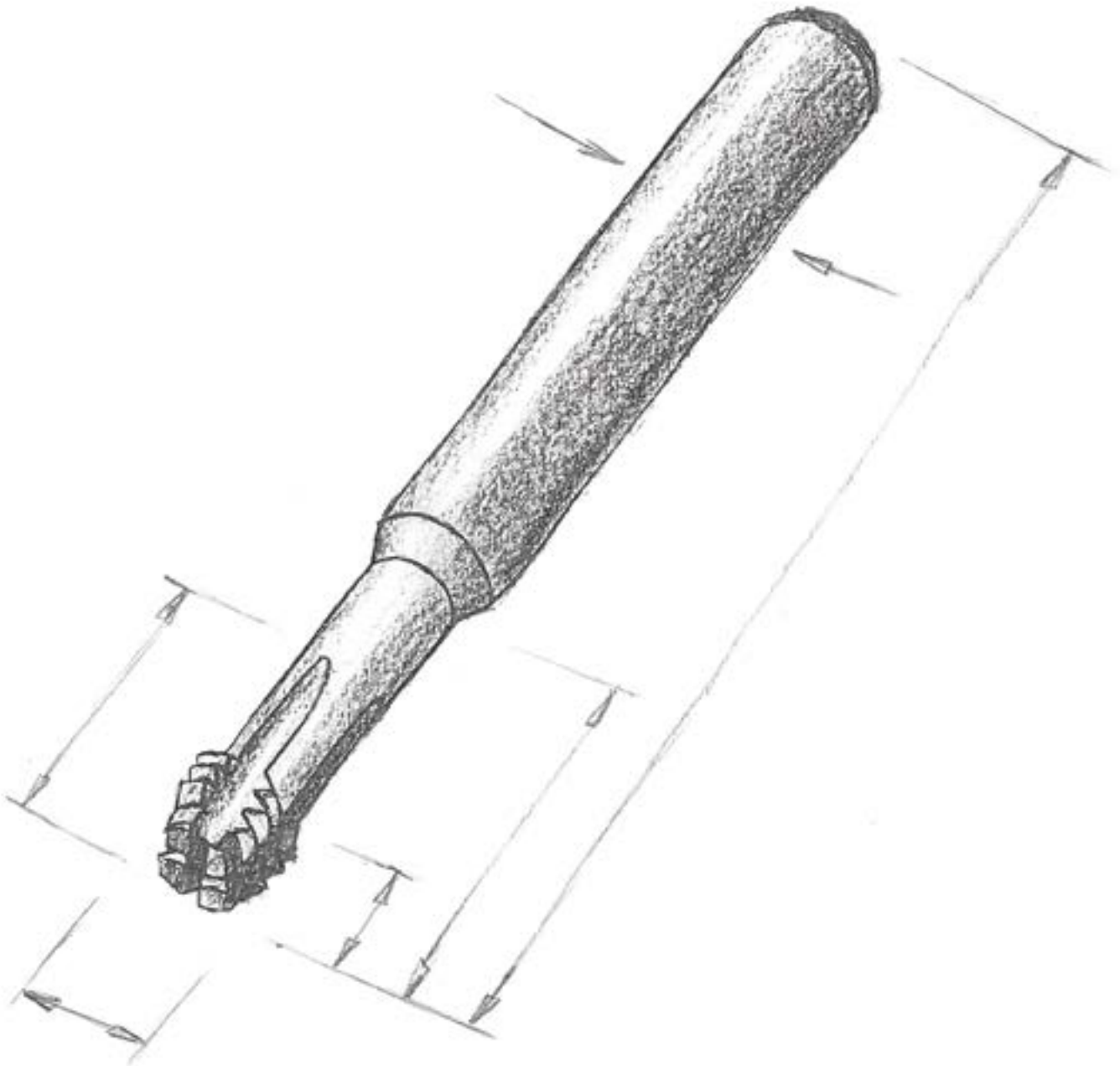
DE-EN-ID TM.1

Katalog
Gewindewirbler
Gewindefräser
Gewindelehren

Catalogue
Thread whirl cutters
Thread milling cutters
Thread gauges

DC®

DE-EN-ID TM.1




DC
DC
DC

VERFÜGBARKEIT DER ARTIKEL

- ● ID *Lagerartikel*
- ● ID *Kurzfristig lieferbar*
- * ID *Ab Lager lieferbar solange Vorrat*

AVAILABILITY OF THE ARTICLES

- ● ID Stock item
- ● ID Available at short notice
- * ID Available from stock, while stock lasts

Unser innovatives KMU ist im Berner Jura in der Schweiz zu Hause, idyllisch eingebettet zwischen Hügeln und am Ufer der hier noch jungen Birs gelegen. Hier werden bereits seit 1940 die Hochleistungs-Gewindewerkzeuge unserer Marke DC entwickelt, produziert und in die ganze Welt geliefert.

Seit der Gründung unseres Unternehmens konzentrieren wir uns auf die Erweiterung unseres Angebotes an Gewindebohrern und Gewindeformern aus HSSE / HSSE-PM, um die Bedürfnisse unserer Kunden optimal zu erfüllen, und auf die Entwicklung neuer Werkzeugtypen für die neusten Technologien und Werkstoffe.

Im Jahre 2000 haben wir den neuen Produktionsbereich „ONE STEP", ausgestattet mit modernsten Produktionstechnologien, für die Entwicklung und Herstellung von zuverlässigen und leistungsstarken Vollhartmetall-Gewindefräsern geschaffen. In der Zwischenzeit wurde unser VHM-Programm stark weiterentwickelt und ausgebaut, mit Schwerpunkt auf Gewindewirblern.

Seit 2010 wird der Entwicklung unserer Mikrowerkzeuge besonders viel Aufmerksamkeit gewidmet. Das Resultat ist unser in der Zwischenzeit echt breites „nano"-Programm, das Gewindewirbler, Gewindebohrer, Gewindeformer, Gewindelehren und Prüfgewindelehren im Durchmesserbereich von 0.3 – 2.75 mm beinhaltet. Als ISO 17025/2005 akkreditiertes Unternehmen ist die DC Nano Tools SA Ihr Spezialist für diesen Bereich.

Heute werden unsere Hochleistungs-Gewindewerkzeuge weltweit und in sämtlichen Branchen dort eingesetzt, wo Wert auf ***Qualität***, ***Leistung*** *und* ***Zuverlässigkeit*** *der Produkte gelegt wird.*

Falls Sie in unserem breit gefächerten Standardprogramm nicht finden sollten was Sie benötigen, ändern wir Werkzeuge Ihren Bedürfnissen entsprechend ab oder stellen spezifische Sonderwerkzeuge basierend auf Ihren Vorgaben und Zeichnungen für Sie her.

Für Fragen, auf die Sie in unserem Katalog keine Antwort finden, stehen wir Ihnen selbstverständlich gerne zur Verfügung.

„Zuerst war ich auf der Suche nach den besten Werkzeugen, dann entschied ich mich, diese selbst herzustellen"

Daniel Charpilloz – 1940

Our innovative SME is at home in the Berner Jura in Switzerland, idyllically nestled between hills and on the banks of the still young river called Birs. This is where since 1940 the high-performance threading tools of our brand DC are developed, manufactured and supplied all over the world.

Since the foundation of our company, we have focused on expanding our range of HSSE / HSSE-PM taps and thread formers in order to optimally meet our customers' needs and on constantly developing new tool types for the latest technologies and materials.

In 2000, we created the new "ONE STEP" production division, equipped with the latest production technologies, for the development and manufacture of reliable and powerful solid carbide thread milling cutters. In the meantime, our CAR programme has been greatly developed and expanded, with a focus on thread whirling cutters.

Since 2010, special attention has been paid to the development of our micro tools. The result is our in the meantime really broad "nano" programme, which includes thread whirlers, taps, thread formers, thread gauges and check thread gauges in the diameter range from 0.3 - 2.75 mm. As an ISO 17025/2005 accredited company, DC Nano Tools SA is your specialist in this field.

Today, our high performance threading tools are used worldwide and in all industries where **quality**, **performance** and **reliability** of the products are paramount.

If you do not find what you need in our wide range of standard products, we can modify tools to suit your needs or manufacture specific special items, based on your specifications and drawings.

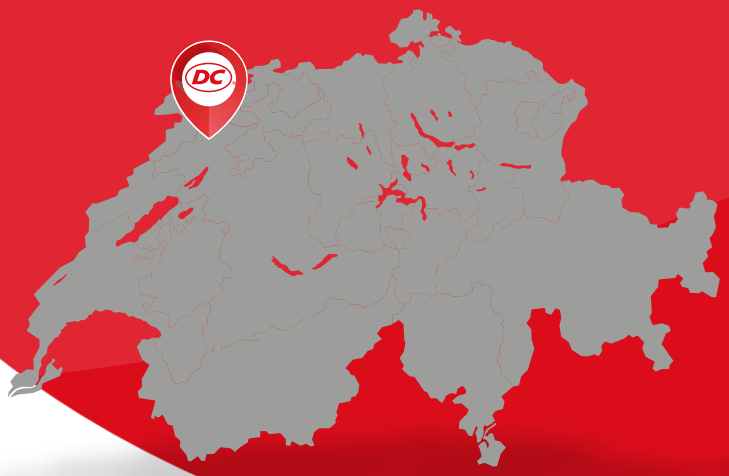
For questions, to which you cannot find an answer in our catalogue, we are of course gladly at your entire disposal.

"In the beginning, I was looking for the best tools, then I decided to produce them myself"

Daniel Charpilloz – 1940

DC SWISS WELTWEIT

UND IMMER IN IHRER NÄHE



KUNDENNÄHE

Sie finden immer einen kompetenten Ansprechpartner, egal ob im Mutterwerk in der Schweiz, bei einer unserer Tochtergesellschaften in Deutschland, Italien und England, oder bei einer unserer vielen Vertretungen bzw. einem unserer Stützpunkthändler weltweit.

CUSTOMER PROXIMITY

You will always find a competent contact person, whether at our main site in Switzerland, at one of our subsidiaries in Germany, Italy and England, or at one of our many representatives or re-sellers worldwide.

Niederlassungen - Subsidiaries
Technologiepartner - Technology Partners
Vertretungen - Distributors

Für weitere Länder : dcswiss.com/de/verkaufsnetz
For further countries: : dcswiss.com/en/sales-network

DC SWISS WORLDWIDE

AND ALWAYS CLOSE TO YOU

SWISS QUALITY

***100 % made by DC SWISS** - garantiert von der Entwicklung des Werkzeuges über dessen Herstellung bis zur Endkontrolle, dank unseres Fachwissens und unserer Kompetenz in allen Bereichen der Gewindewerkzeugherstellung.*

100 % made by DC SWISS - guaranteed from the development of the tool to its production and straight through to the end control, thanks to our know-how and competencies in the whole field of threading tool manufacturing.

UNSERE WERTE

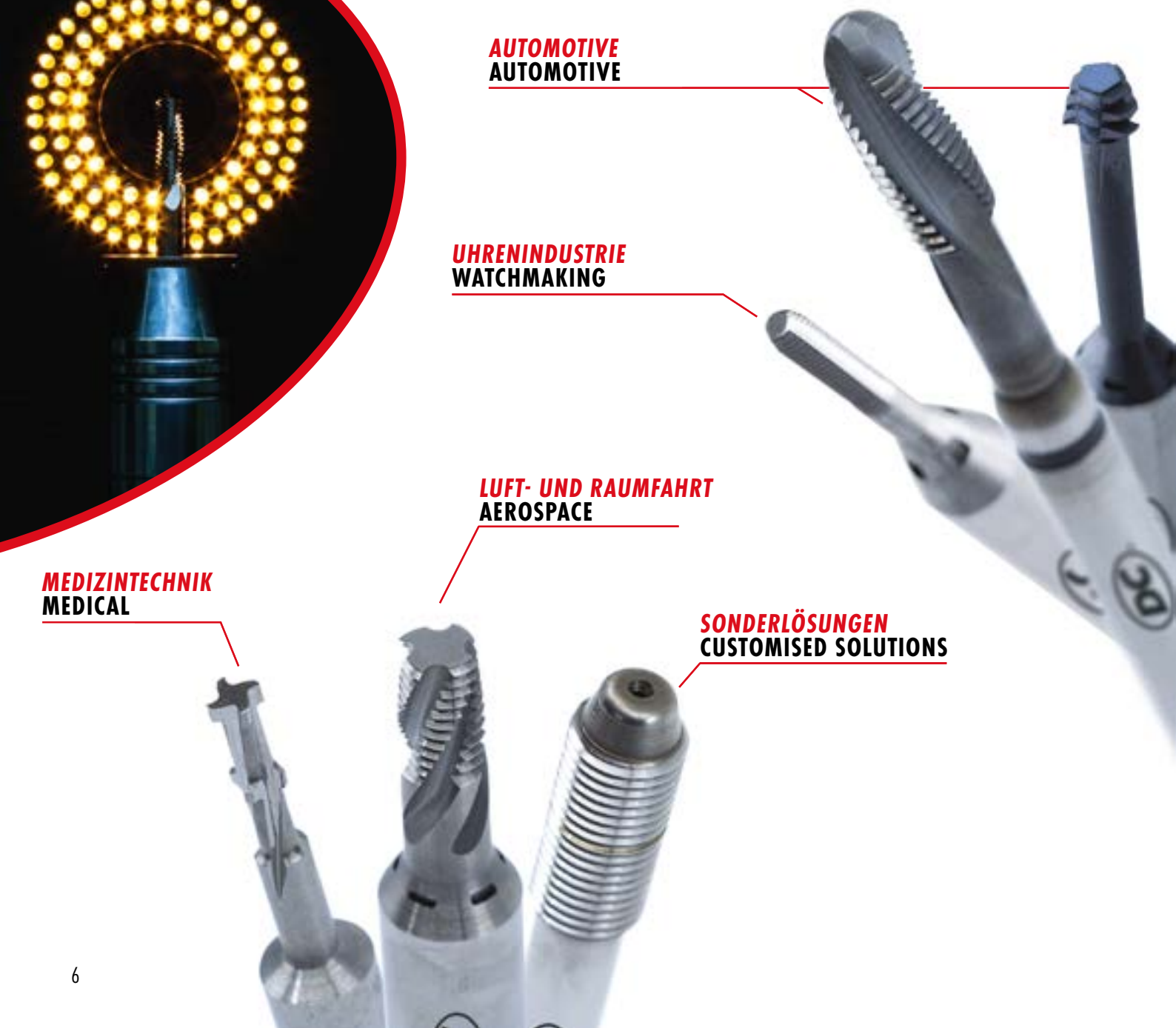
LEISTUNG

Wir sind darin bestrebt, neue leistungsstarke Gewindewerkzeuge zu entwickeln und die Leistungsfähigkeit unserer Standardprodukte den aktuellen Bedürfnissen unserer Kunden anzupassen. Wir legen grossen Wert auf ein konstantes Preis- / Leistungsverhältnis, als Basis für eine vertrauensvolle Beziehung zu unseren Kunden.

OUR VALUES

PERFORMANCE

We make every effort to develop new high-performance threading tools and to adapt the performance of our standard tools to the current needs of our customers. We attach great importance to a constant price/performance ratio as the basis for a trusting relationship with our customers.



AUTOMOTIVE
AUTOMOTIVE

UHRENINDUSTRIE
WATCHMAKING

LUFT- UND RAUMFAHRT
AEROSPACE

MEDIZINTECHNIK
MEDICAL

SONDERLÖSUNGEN
CUSTOMISED SOLUTIONS

FACHKENNTNIS

Der Wert unserer Fachkenntnisse zeigt sich in unserer einzigartigen Art und Weise der Problemlösung, indem wir unser seit 1940 angesammeltes Fachwissen, unsere Erfahrungen und Kompetenzen zum Ausdruck bringen, diese miteinander verbinden und umsetzen.

KNOW-HOW

The value of our know-how represents in a unique way the solving of problems and articulates, implements and associates the whole knowledge, experiences and competences accumulated since 1940.

ZUVERLÄSSIGKEIT

Wir wissen, dass sich dauerhafte Beziehungen nur auf einem soliden Vertrauensverhältnis aufbauen lassen, basierend auf Transparenz und dem täglichen Engagement jedes einzelnen Mitarbeiters, unseren Kunden Werkzeuge und Dienstleistungen bester Qualität zu liefern.

RELIABILITY

We know that lasting relationships can only be built on the basic of confidence, transparency and the daily efforts of each of our employees to provide our customers with tools and services of an excellent quality.

GEWINDESCHNEIDEN
THREAD CUTTING

GEWINDEFORMEN
THREAD FORMING

GEWINDEFRÄSEN
THREAD MILLING

LUFT- UND RAUMFAHRT
AEROSPACE

AUTOMOTIVE
AUTOMOTIVE

MEDIZINTECHNIK
MEDICAL

SONDERLÖSUNGEN
CUSTOMISED SOLUTIONS

ENERGIEERZEUGUNG
POWER GENERATION

UHRENINDUSTRIE
WATCHMAKING

ALLGEMEINER MASCHINENBAU
GENERAL ENGINEERING

GEWINDEWIRBELN
THREAD WHIRLING

GEWINDELEHREN
THREAD GAUGES

GEWINDESCHNEIDFUTTER
TAPPING CHUCKS

GEWINDESCHNEIDEISEN
DIES

UNSERE KOMPETENZEN
KALIBRIEREN & MESSEN

DC SWISS besitzt eine eigene messtechnische Abteilung, die von der Schweizerischen Akkreditierungsstelle (SAS) als Kalibrierlaboratorium für die Messgrösse "Länge" zugelassen ist.

DC SWISS kann daher Dienstleistungen im Bereich Kalibrieren und Messen von Gewindeverbindungen anbieten.

Ein Zertifikat ist ein schriftlicher Nachweis über die Qualität der messtechnischen Ausrüstung des Unternehmens. Als Mitglied der DC SWISS Holding bietet Ihnen DC NANO TOOLS SA (Akkreditierung SCS 0143) die Prüfung und Kalibrierung von Gewindelehrdornen und Gewindelehrringen nach der internationalen Norm ISO 17025 an.

Unsere Werkzeuge sind das Ergebnis zahlreicher Studien, hoher Fachkompetenzen und langjähriger Erfahrung. Sie werden von uns kontinuierlich bis an ihre Leistungsgrenzen getestet. Dieses Know-how stellen wir Ihnen mit unseren Dienstleistungen zur Verfügung, damit Sie die beste Lösung für Ihre Anwendung erhalten – von der ersten Studie an bis zur Serienfertigung.

Wir beherrschen sämtliche Aspekte der Gewindeschneidtechnologie und stellen Ihnen gerne unsere umfassende Erfahrung auf diesem Gebiet zur Verfügung, sei es bei der Konstruktion, der Fertigung oder der messtechnischen Kontrolle auf den einzelnen Stufen des Fertigungsprozesses.

Konstruktion

Jede Konstruktion ist einzigartig. Für ihre Realisierung gibt es allerdings oft mehrere Lösungen. Wir beraten Sie bei der Auswahl der geeigneten Gewindeverbindung, unter anderem zum Einsatz einstellbarer Schrauben oder hochwertiger selbstsichernder Gewinde. Gemeinsam mit Ihren Konstrukteuren finden wir die für Ihr Projekt bestmögliche Lösung, die wichtige Aspekte wie Masse, Machbarkeit, Produktions- und Montagekosten berücksichtigt.

Fertigung

Jedes Gewindewerkzeug erfordert eine spezifische Programmierung unter Berücksichtigung zahlreicher Parameter. Wir helfen Ihnen bei der individuellen Einstellung Ihrer Maschinen und Werkzeuge, damit Sie optimale Fertigungsergebnisse erzielen können. Wir unterstützen Sie bei den erforderlichen Prüfungen und Messungen, sodass Sie sicher sein können, dass Ihre Gewinde exakt den Vorgaben entsprechen. Auch die perfekte Anpassung des Werkzeuges an Ihre Anforderungen ist für uns selbstverständlich. Probleme bei komplexen Geometrien oder atypischen Positionierungen lassen sich oft mit einer speziellen Werkzeugaufnahme lösen.

Messtechnik

Wir bieten Ihnen nicht nur eine umfangreiche Palette an Messlehren, sondern zeigen Ihnen auch, wie man sie korrekt verwendet und vor allem überprüft, um dauerhaft erstklassige Fertigungsergebnisse zu erzielen. Auch spezifischere Messinstrumente sind erhältlich, etwa zur Überprüfung des Rundlaufs, wie auch alle Zertifizierungen. Wir unterstützen Sie bei der Einrichtung Ihrer Prüfverfahren. Dieser kostenpflichtige Service ist für Flankendurchmesser von 0.1 bis 3.0 mm und für Aussendurchmesser von 0.1 bis 3.5 mm verfügbar. Gehen Sie keine Risiken ein, sondern nutzen Sie die Kompetenzen von DC NANO TOOLS SA für das Kalibrieren Ihrer Messinstrumente.

Aus- und Weiterbildung

In unserem Anwendungszentrum und unserem Labor bieten wir allen Kunden Einführungen in die Theorie und beste Praxis der Gewindeschneidtechnologie an – von der Konstruktion über die Fertigung bis zum Einsatz von Gewindeverbindungen. Auf Wunsch vertiefen wir diese Informationen in spezifischen Schulungen zu bestimmten Themen, wie beispielsweise die Sicherung von Gewindeverbindungen.

OUR EXPERTISE
CALIBRATION & METROLOGY SERVICE

DC SWISS has a metrology lab that is accredited by the Swiss Accreditation Service as a laboratory for calibrating lengths.

DC SWISS is able to offer a calibration and metrology service for screw connections.

A certificate is written confirmation of the quality of a company's metrological equipment. DC NANO TOOLS SA (SCS accreditation 0143), a member of the DC SWISS Group, can inspect and calibrate thread plug gauges as well as thread ring gauges in accordance with the ISO 17025 international standard.

Our tools are the result of numerous studies. We design them using all the knowledge we have acquired over many years, always testing them to their utmost limits. We share all this knowledge with you in the form of our services. Our aim is to provide the most appropriate solution in each case, from feasibility study right through to mass production.

We are experts in all aspects of the process of screw threading, and are able to offer you our assembly expertise from design, machining and metrological inspection through the various stages of creating screw connections.

Design expertise
Each design is unique, but there are often multiple solutions. We can advise you on which type of screw fixing to choose, for example adjustable, self-locking or high-quality screws. During the design phase, we can help your designers to identify and decide the best-performing screw fixing in terms of dimensions, practicality, production costs and assembly.

Machining expertise
Each tool calls for special programming involving numerous parameters. We can help you to get the best out of your machines and tools in order to achieve maximum performance via personalised programming. We can provide you with support in the inspection and measurement phase, so you can be sure of having produced the screw thread you were expecting. And if a tool needs to be customised, we can do this so that it meets all your requirements. Often, a particular approach to fitting makes it possible to resolve a problem caused by complex geometry or unusual positioning.

Metrological expertise
We supply a large number of measuring gauges and also advice on how to use and inspect them in order to ensure the required quality is consistently achieved. Other more specific measures are available, such as concentricity and certification measures. We can assist you in setting up control procedures. This service is available for pitch diameters of 0.1 to 3.0 mm, and external diameters of 0.1 to 3.5 mm. Don't take the risk – benefit from the expertise of DC NANO TOOLS SA to calibrate your measuring tools.

Training
In our application centre and our laboratory, we distribute full information and advice on best practice to all our customers in the design, manufacture and use of screw fixings. We can provide on-demand training in specific subjects such as secure fixings.

SWISS ACCREDITATION
sas.admin.ch SCS 0143

Certificate CH07/0649

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

Authorised by

SGS Société Générale de Surveillance SA
Technoparkstrasse 1 8005 Zurich Switzerland
t +41 (0)44 445-16-80 f +41 (0)44 445-16-88 www.sgs.com

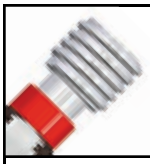
REGISTER — REGISTER

Gewindewirbeln
Thread whirling

Zentrierbohrer, Spiralbohrer
Spotting drills, Twist drills

Gewindefräsen
Thread milling

REGISTER — REGISTER



Gewindelehrdorne
Thread plug gauges

Gewindelehrringe
Thread ring gauges

Alle nano-Gewindelehrdorne sind SCS-zertifiziert und das kostenpflichtige Zertifikat auf Bestellung lieferbar.
All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

Alle nano-Gewindelehrringe haben ein Prüfzertifikat, realisiert mit SCS-akkreditierten Prüf-Gewindelehrdornen. Das kostenpflichtige Prüfzertifikat ist auf Bestellung lieferbar.
All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

REGISTER — REGISTER

Prüfgewindelehrdorne
Thread plug check gauges

M nano

RN05-1	174	RN15-1	174
RN05-2	179	RN15-2	179

MF nano

RN05-1	175	RN15-1	175
RN05-2	180	RN15-2	180

UNC nano

RN05-1	176	RN15-1	176
RN05-2	181	RN15-2	181

UNF nano

RN05-1	176	RN15-1	176
RN05-2	181	RN15-2	181

S nano

RN05-1	177	RN15-1	177
RN05-2	182	RN15-2	182

SF nano

RN05-1	178	RN15-1	178
RN05-2	183	RN15-2	183

Mit SCS-Zertifikat.
SCS certificate included.

Abnutzungsprüfdorne
Master plug gauges WEAR

M nano

RN05-3	184	RN15-3	184

MF nano

RN05-3	185	RN15-3	185

Mit SCS-Zertifikat.
SCS certificate included.

Kalibrier-Gewindelehrdorne
Calibration thread plug gauges

S nano

EN00	186

Mit SCS-Zertifikat.
SCS certificate included.

nano-Gewindelehren - Prüfmittel - SCS-Zertifikat
Bestellformular für nano-Gewindelehren
Micro-Safelock

Härtevergleichstabelle
Tabelle Zoll - mm
Umrechnungstabelle
Kernlochbohrungen
Aussendurchmesser
Technischer Fragebogen
Liefer- und Zahlungsbedingungen

Weitere Informationen finden Sie unter
www.dcswiss.com

nano-Thread gauges - Inspection devices - SCS Measurement certificate
Order form for nano thread gauges
Micro-Safelock

Hardness chart
Chart inches - mm
Conversion table
Core holes
Turned diameters
Technical questionnaire
Delivery and payment conditions

Further information are available on
www.dcswiss.com

PIKTOGRAMME — PICTOGRAPHS

Vollhartmetall-Gewindewirbler, Gewindefräser, Bohrgewindefräser, Zirkular-Bohrgewindefräser, Zentrierbohrer und Spiralbohrer
Solid carbide thread whirl cutters, thread milling cutters, thrillers, circular drill thread milling cutters, spotting drills and twist drills

VHM CAR
Vollhartmetall
Solid carbide

VS
DC-"VS"-Verschleissschutzschicht für den allgemeinen Einsatz
DC "VS" wear-protective coating for general use

VX
DC-"VX"-Verschleissschutzschicht für rostfreie Stähle und Nickellegierungen
DC "VX" wear-protective coating for stainless steels and Nickel alloys

VH
DC-"VH"-Verschleissschutzschicht für gehärtete Stähle (≤ 63 HRC)
DC "VH" wear-protective coating for tempered steels (≤ 63 HRC)

NIHS
Schweizerische Uhrenindustrie-Norm
Norm of Swiss Watch Industry

HRC ≤ 63
Für Werkstoffe ≤ 63 HRC (GWH - GFH)
For materials ≤ 63 HRC (GWH - GFH)

h5/h6
Schafttoleranz h5 / h6
Shank tolerance h5 / h6

h5
Schafttoleranz h5
Shank tolerance h5

h6
Schafttoleranz h6
Shank tolerance h6

< 3µm
Rundlaufgenauigkeit
Shape accuracy

HSC
HSC-Bearbeitung
HSC-Machining

GW1000-Profil
GW1000 profile

GW2000-Profil
GW2000 profile

GW3000-Profil
GW3000 profile

GWi3000-Profil
GWi3000 profile

GWi5000-Profil
GWi5000 profile

Anzahl Zähne zur Programmierung (GWi5000)
Number of teeth for programming (GWi5000)

Für gratfreie Gewinde (GWi5000)
For burr-free threads (GWi5000)

Zirkular-Bohrgewindefräser-Profil
Circular drill thread milling cutter profile

Zirkular-Bohrgewindefräser mit Kühlkanal
Circular drill thread milling cutter with cooling channel

> 20 bar
Innenkühlung mindestens 20 bar
Internal coolant min. 20 bar

Kühlkanal
Internal cooling channel

Kühlkanal (BGF, 2 Spannuten)
Internal cooling channel (BGF, 2 flutes)

Kühlkanal (BGF, 3 Spannuten)
Internal cooling channel (BGF, 3 flutes)

R10
10° Rechtsspiralnuten
10° right-hand spiral flutes

R15
15° Rechtsspiralnuten
15° right-hand spiral flutes

R27
27° Rechtsspiralnuten
27° right-hand spiral flutes

R27
27° Rechtsspiralnuten
27° right-hand spiral flutes

R0
0° Drallwinkel (GWi5000 - GWH)
0° helix angle (GWi5000 - GWH)

R10
10° Rechtsdrallwinkel
10° right-hand helix angle

L3
3° Linksdrallwinkel (ZBGF)
3° left-hand helix angle (ZBGF)

45°
Mit 45° Senker zum Anfasen des Gewindes
With 45° chamfer for countersinking

Radius auf Aussendurchmesser
Radius on external diameter

Kühlkanal GWi Ø 0.8 - ≤ 6.35 mm
Cooling channel GWi Ø 0.8 - ≤ 6.35 mm

Kühlkanal GWi Ø > 6.35 - ≤ 20 mm
Cooling channel GWi Ø > 6.35 - ≤ 20 mm

1:16
Konisches Gewinde 1:16 (NPT - NPTF)
Tapered thread 1:16 (NPT - NPTF)

2 x D_1
Gewindelänge 2 x D_1
Thread length 2 x D_1

2.5 x D_1
Gewindelänge 2.5 x D_1
Thread length 2.5 x D_1

3 x D_1
Gewindelänge 3 x D_1
Thread length 3 x D_1

4 x D_1
Gewindelänge 4 x D_1
Thread length 4 x D_1

PIKTOGRAMME — PICTOGRAPHS

Gewindelänge 1.5 x D_1
Thread length 1.5 x D_1

Gewindelänge 2 x D_1
Thread length 2 x D_1

Gewindelänge 2.5 x D_1
Thread length 2.5 x D_1

Innengewinde
Internal thread

Aussengewinde
External thread

Innengewinde (GW - GWi - GWH)
Internal thread (GW - GWi - GWH)

Sacklöcher (BGF)
Blind holes (BGF)

Durchgangslöcher (BGF)
Through holes (BGF)

BGF, 2 Spannuten
BGF, 2 flutes

BGF, 3 Spannuten
BGF, 3 flutes

EG-Gewinde
Thread EG (for wire screw thread inserts)

Kernlochdurchmesser
Core-hole diameter

Anzahl Spannuten (Z)
Number of flutes (Z)

Werkzeugdrehrichtung "links"
Sense of rotation of tool "left"

Auf Anfrage
On request

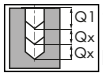
Unvollständigen Gang entfernen (GF61 - GFH61),
Umstellung auf neue Ausführung im Gange
Removal of incomplete thread (GF61 - GFH61),
change to new version in progress

Fasenwinkel 90°
Chamfer 90°

Bohrtiefe 5 x d_1
Drilling depth 5 x d_1

Bohrtiefe 6 x d_1
Drilling depth 6 x d_1

Bohrtiefe 8 x d_1
Drilling depth 8 x d_1



Tieflochbohren mit Entspanen
Drilling with pecking

130° Spitzenwinkel
130° point angle

140° Spitzenwinkel
140° point angle

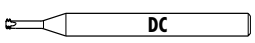
30° Rechtsspiralnuten
30° right-hand spiral flutes

Innenkühlung, mit 2 stirnseitigen Schmiermittelaustritten
Internal coolant, with 2 frontal outflows

Innenkühlung, mit 2 gedrallten Kühlkanälen
Internal coolant, with 2 twisted coolant channels

Für Bohrtiefe 3 x d_1
For drilling depth 3 x d_1

Für Bohrtiefe 5 x d_1
For drilling depth 5 x d_1



Baumasse nach DC-Werksnorm
General dimensions as per DC standards

Schaftmasse nach DIN 6535 HA
Shank dimensions as per DIN 6535 HA

Bemerkung GFM

Zur Vermeidung grösserer Profilüberfräsungen darf der Fräser-Ø für Regelgewinde nicht grösser als ⅔ (Feingewinde ¾) des zu fräsenden Gewinde-Ø sein.

Notice GFM

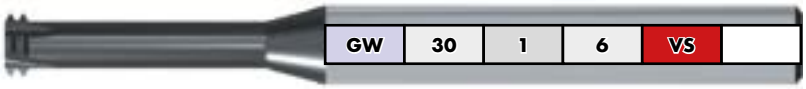
In order to avoid profile defects it is important that the tool diameter does not exceed ⅔ of the diameter of the work-piece thread for coarse threads (¾ for fine threads).

KODIERUNG — CODIFICATION

VHM-Gewindewirbler

Solid carbide thread whirl cutters

Beispiel - Example



Standardausführung	Standard execution	**GW**					
Für gehärteten Stahl (55 - ≤ 63 HRC)	For hardened steels (55 - ≤ 63 HRC)	**GWH**					
Mit Kühlkanal	With cooling channel	**GWi**					
Einzahn	Single tooth		**11**				
Mehrzahn-Einzelprofil	Single profile, multi toothed		**20**				
Mehrzahn-Doppelprofil	Double pitch with multi flutes		**30**				
Mehrzahn-Vollprofil	Multi fluted with full profile		**50**				
Aussenkühlung	External lubrication			**1**			
Innenkühlung	Internal lubrication			**6**			
Gewindelänge 2 x D_1	Thread length 2 x D_1				**5**		
Gewindelänge 2.5 x D_1	Thread length 2.5 x D_1				**6**		
Gewindelänge 3 x D_1	Thread length 3 x D_1				**7**		
Gewindelänge 4 x D_1	Thread length 4 x D_1				**9**		
VS-Verschleissschutzschicht, generell	VS wear-protective coating, general					**VS**	
VX-Beschichtung für rostfreie Stähle und Nickelleg.	VX coating for stainless steels and Nickel alloys					**VX**	
VH-Beschichtung für gehärtete Stähle (≤ 63 HRC)	VH coating for hardened steels (≤ 63 HRC)					**VH**	
Spezialausführung	Special execution						**SP**

VHM-Zirkular-Bohrgewindefräser

Solid carbide circular drill thread milling cutters

Beispiel - Example

Standardausführung	Standard execution	**ZBGF**					
Spiralnuten 3°	Spiral flutes 3°		**60**				
Innenkühlung	Internal lubrication			**6**			
Gewindelänge 2 x D_1	Thread length 2 x D_1				**5**		
Gewindelänge 3 x D_1	Thread length 3 x D_1				**7**		
VS-Verschleissschutzschicht, generell	VS wear-protective coating, general					**VS**	
Spezialausführung	Special execution						**SP**

KODIERUNG — CODIFICATION

VHM-Gewindefräser

Solid carbide thread milling cutters

Beispiel - Example

Standardausführung	Standard execution	**GF**
Für gehärteten Stahl (55 - ≤ 63 HRC)	For hardened steels (55 - ≤ 63 HRC)	**GFH**
Mit 45° Senkfase	With 45° chamfer for countersinking	**GFS**
Polyvalenter Gewindefräser	For multi sizes thread milling cutters	**GFM**
Bohrgewindefräser	Thrillers	**BGF**
Spiralnuten 27° (GF61), 10° (GFH)	Spiral flutes 27° (GF61), 10° (GFH)	**61**
Spiralnuten 15° (GF62, GFM62)	Spiral flutes 15° (GF62, GFM62)	**62**
Spiralnuten 27° (GFS)	Spiral flutes 27°(GFS)	**66**
Bohrgewindefräser zweilippig	Thrillers 2 flutes	**67**
Bohrgewindefräser dreilippig	Thrillers 3 flutes	**68**
Aussenkühlung	External lubrication	**1**
Innenkühlung	Internal lubrication	**6**
Gewindelänge 1.5 x D_1	Thread lenght 1.5 x D_1	**0**
Gewindelänge 2 x D_1	Thread length 2 x D_1	**5**
Gewindelänge 2.5 x D_1	Thread length 2.5 x D_1	**6**
VS-Verschleissschutzschicht, generell	VS wear-protective coating, general	**VS**
VX-Beschichtung für rostfreie Stähle und Nickelleg.	VX coating for stainless steels and Nickel alloys	**VX**
VH-Beschichtung für gehärtete Stähle (≤ 63 HRC)	VH coating for hardened steels (≤ 63 HRC)	**VH**
Spezialausführung	Special execution	**SP**
Profil für Aussengewinde	Profile for external threads	**EX**

Bemerkung GFM

Zur Vermeidung grösserer Profilüberfräsungen darf der Fräser-Ø für Regelgewinde nicht grösser als ⅔ (Feingewinde ¾) des zu fräsenden Gewinde-Ø sein.

Notice GFM

In order to avoid profile defects it is important that the tool diameter does not exceed ⅔ of the diameter of the work-piece thread for coarse threads (¾ for fine threads).

ANWENDUNGSGRUPPEN

Beispiele für Anwendungsgruppen

11 Automatenstahl

1.0711	9S20
1.0715	9SMn28
1.0718	9SMnPb28
1.0726	35S20
1.0737	9SMnPb36

12 Baustahl, Einsatzstahl

1.0037	St37-2 (S235JR)
1.0050	St50-2 (E295)
1.0060	St60-2 (E335)
1.5919	15CrNi6
1.7131	16MnCr5

13 Kohlenstoffstahl

1.0503	C45
1.0535	C55
1.0601	C60
1.1545	C105W1
1.2067	102Cr6 (100Cr6)

14 Stahl legiert < 850 N/mm2

1.2363	X100CrMoV5-1
1.3551	80MoCrV42-16
1.7218	25CrMo4
1.7220	34CrMo4
1.7225	42CrMo4

15 Stahl legiert / vergütet > 850 - < 1150 N/mm2

1.3553	X82WMoCrV6-5-4
1.6580	30CrNiMo8
1.7220	34CrMo4
1.7225	42CrMo4
1.8507	34CrAlMo5

16 Hochfester Stahl ≤ 44 HRC

	EN-GJS-1200-2
1.6582	34CrNiMo6v
1.7225	42CrMo4v
1.7228	50CrMo4v
1.8515	31CrMo12v

17 Stahl vergütet > 44 - ≤ 54 HRC

> 44 - ≤ 54 HRC

18 Stahl gehärtet > 54 - ≤ 63 HRC

> 54 - ≤ 63 HRC

21 Rostfreier Stahl, geschwefelt

1.4005	X12CrS13
1.4104	X14CrMoS17
1.4305	X10CrNiS18-9

22 Austenitisch

1.4301	X5CrNi18-10
1.4406	X2CrNiMoN17-12-2
1.4435	X2CrNiMo18-14-3
1.4541	X6CrNiTi18-10
1.4571	X6CrNiMoTi17-12-2

23 Ferritisch, martensitisch < 850 N/mm2

1.4112	X90CrMoV18
1.4540	X4CrNiCuNb16-4
1.4582	X4CrNiMoNb25-7
1.4762	X10CrAl24
1.4922	X20CrMo11-1

24 Ferritisch, martensitisch > 850 - < 1150 N/mm2

1.4057	X17CrNi17-2
1.4125	X105CrMo17
1.4542	X5CrNiCuNb16-4
1.4548	X5CrNiCuNb17-4-4
1.4748	X85CrMoV18-2

31 Grauguss

0.6015	GG15
0.6020	GG20
0.6025	GG25
0.6030	GG30

32 Kugelgraphitguss, Temperguss

0.7040	GGG40
0.7043	GGG40.3
0.7050	GGG50
0.7060	GGG60
0.7080	GGG80

41 Reintitan

3.7024	Grad1
3.7034	Grad2
3.7055	Grad3
3.7065	Grad4

42 Titanlegierung

3.7124	TiCu2.5
	Ti6Al7Nb
3.7164	TiAl6V4 (Grad5)
3.7174	TiAl6V6Sn2

51 Nickellegierung 1 ≤ 850 N/mm2

1.3912	Ni36 (Invar)
2.4360	NiCu30Fe (Monel 400)
2.4816	NiCr15Fe (Inconel 600)
1.4876	X10NiCrAlTi32-20

52 Nickellegierung 2 > 850 - ≤ 1150 N/mm2

2.4375	NiCu30Al (MonelK500)
2.4631	NiCr20TiAl (Nimonic 80)
2.4668	NiCr19NbMo (Inconel718)

53 Nickellegierung 3 > 1150 - ≤ 1600 N/mm2

2.4631	NiCr20TiAl (Nimonic80)
2.4668	NiCr19NbMo (Inconel718)

61 Reinkupfer (Elektrolytkupfer)

2.0060	E-Cu57 (E-Cu)

62 Messing, Bronze, Rotguss (kurzspanend)

2.0401	CuZn39Pb3 (Ms58)
2.0402	CuZn40Pb2 (Ms58)
2.1030	CuSn8 (Bz)
2.1096	G-CuSn5ZnPb

63 Messing (langspanend)

2.0240	CuZn15 (Ms85)
2.0265	CuZn30 (Ms70)
2.0321	CuZn37 (Ms63)

71 Al unlegiert

3.0205	Al99
3.0255	Al99.5

72 Al legiert Si < 1.5 %

3.1255	AlCuSiMn
3.1355	AlCuMg2
3.2315	AlMgSi1
3.3206	AlMgSi0.5
3.4345	AlZnMgCu0.5

73 Al legiert Si > 1.5 % - < 10 %

3.2161	G-AlSi8Cu3
3.2162	GD-AlSi8Cu3
3.2341	G-AlSi5Mg
3.2371	G-AlSi7Mg

74 Al legiert Si > 10 %, Mg-Legierungen

3.2381	G-AlSi10Mg
3.2382	GD-AlSi10Mg
3.2581	G-AlSi12
3.2583	G-AlSi12 (Cu)

81 Thermoplaste

Delrin (POM)
Teflon
Nylon

82 Duroplaste

Bakelit
Novopan

83 Faserverstärkte Kunststoffe

Glasfaserverstärkte
Thermo- und Duroplaste

Referenz: DIN

91 Gelbgold

2N18
Au585AgCu205
3N18
Au917AgCu44

92 Rotgold

4N18
5N18
Au585CuAg325
Au750AgCu
Au917Cu83

93 Weissgold

Au750PdCu125
Au750PdCu150
Au585PdCu150
Au925Pd75

94 Silber

Ag999
Ag800Cu
Ag925Cu

APPLICATION GROUPS

Examples for application groups

11 Free-cutting steels

1.0711	1212
1.0715	1213
1.0718	12L13
1.0726	1140
1.0737	12L14

12 Structural, cementation steels

1.0037	1015
1.0050	A570 Gr.50
1.0060	A572 Gr.65
1.5919	3115
1.7131	5115

13 Carbon steels

1.0503	1045
1.0535	1055
1.0601	1060
1.1545	W110
1.2067	L 3

14 Alloy steels < 850 N/mm2

1.2363	A2
1.3551	M50
1.7218	4130
1.7220	4135
1.7225	4140

15 Alloy steels hard./temp. > 850 - < 1150 N/mm2

1.3553	-
1.6580	4340
1.7220	4135
1.7225	4140
1.8507	A355CLD (K23510)

16 High tensile alloy steels ≤ 44 HRC

	EN-GJS-1200-2
1.6582	4340
1.7225	4140
1.7228	4150
1.8515	-

17 Alloy steels tempered > 44 - ≤ 54 HRC

> 44 - ≤ 54 HRC

18 Alloy steels hardened > 54 - ≤ 63 HRC

> 54 - ≤ 63 HRC

21 Free machining stainless steels

1.4005	416
1.4104	430F
1.4305	303

22 Austenitic stainless steels

1.4301	304
1.4406	316LN
1.4435	316L
1.4541	321
1.4571	316Ti

23 Ferritic and martensitic < 850 N/mm2

1.4112	440B
1.4540	XM12 (15-5PH)
1.4582	-
1.4762	446
1.4821	4922

24 Ferritic and martensitic > 850 - < 1150 N/mm2

1.4057	431
1.4125	440C
1.4542	630 (17-4PH)
1.4748	-

31 Cast iron

0.6015	A48-25B
0.6020	A48-30B
0.6025	A48-40B
0.6030	A48-45B

32 Spheroidal graphite + malleable cast iron

0.7040	60-40-18
0.7043	-
0.7050	65-45-12
0.7060	80-55-06
0.7080	120-90-02

41 Pure titanium

3.7024	Gr.1
3.7034	Gr.2
3.7055	Gr.3
3.7065	Gr.4

42 Titanium alloys

3.7124	Alloy 230
	F-1295
3.7164	Gr.5
3.7174	-

51 Nickel alloys 1 ≤ 850 N/mm2

1.3912	K93600
2.4360	N04400
1.4816	N08800

52 Nickel alloys 2 > 850 - ≤ 1150 N/mm2

2.4375	N05500 (B865)
2.4631	N07080 (B637)
2.4668	N07718 (B637)

53 Nickel alloys 3 > 1150 - ≤ 1600 N/mm2

2.4631	N07080 (B637)
2.4668	N07718 (B637)

61 Pure copper (electrolytic copper)

2.0060	C11000

62 Short chip brass, phosphor bronze, gun metal

2.0401	C38500
2.0402	C37800
2.1030	C52100
2.1096	-

63 Long chip brass

2.0240	C23000
2.0265	C26000
2.0321	C27200

71 Al unalloyed

3.0205	1200
3.0255	1050A

72 Al alloyed Si < 1.5 %

3.1255	2014
3.1355	2024
3.2315	6082
3.3206	6060
3.4345	7020

73 Al alloyed Si > 1.5 % - < 10 %

3.2161	380.1
3.2162	-
3.2341	-
3.2371	A 356.2

74 Al alloyed Si > 10 %, Mg-alloys

3.2381	A360
3.2382	-
3.2581	A413
3.2583	413.1

81 Thermoplastics

Delrin (POM)
Teflon
Nylon

82 Duroplastics

Bakelit
Novopan

83 Glass fibre reinforced plastics

Glass fibre reinforced,
Thermo and Duroplastics

Reference: AISI/ASTM/UNS

91 Yellow gold

2N18
Au585AgCu205
3N18
Au917AgCu44

92 Red gold

4N18
5N18
Au585CuAg325
Au750AgCu
Au917Cu83

93 White gold

Au750PdCu125
Au750PdCu150
Au585PdCu150
Au925Pd75

94 Silver

Ag999
Ag800Cu
Ag925Cu

SPEZIFIZIERUNGEN — SPECIFICATIONS

VS-BESCHICHTUNG — VS-COATING

VS

- *DC-"VS"-Verschleissschutzschicht für den allgemeinen Einsatz*
- *Zum Vermeiden von Kaltschweissungen*

*** *** *** *** *** *** ***

- DC "VS" wear-protective coating for general use
- To prevent cold welding

NEU: VX-BESCHICHTUNG — NEW: VX-COATING

VX

- *DC-"VX"-Verschleissschutzschicht für höhere Verschleissfestigkeit in rostfreien Stählen und Nickellegierungen, ermöglicht höhere Standzeiten*
- *Zum Vermeiden von Kaltschweissungen*

*** *** *** *** *** *** *** *** *** ***

- Improved wear resistance and longer tool life in stainless steels and Nickel alloys thanks to the DC "VX"-coating
- To prevent cold welding

NEU: VH-BESCHICHTUNG — NEW: VH-COATING

VH

- *DC-"VH"-Verschleissschutzschicht für die Trockenbearbeitung von gehärteten Stählen mit einer Härte von 55 - 63 HRC*
- *Gegen Hitzeentwicklung und plastische Verformung*

*** *** *** *** *** *** *** *** *** ***

- DC "VH" wear-protective coating for dry machining of tempered steels with a hardness of 55 - 63 HRC
- Against heat development and plastic deformation

Gewindewirbler GW *SERIES 1000* — Thread whirl cutter GW SERIES 1000

- *Universell einsetzbar*
- *Hohe Prozesssicherheit*
- *Für kleinste Durchmesser geeignet*
- *Mehr Raum für die Spanevakuation*
- *Für Gewindetiefen bis 2.5 x D_1*

*** *** *** *** ***

- Universal application
- High process security
- Suitable for the smallest dimensions
- More space for chip evacuation
- For threading depths up to 2.5 x D_1

Gewindewirbler GW *SERIES 2000* — Thread whirl cutter GW SERIES 2000

- *Vorschubgeschwindigkeit multipliziert mit der Anzahl der Zähne*
- *Weniger Verschleiss, verbesserte Standzeit*
- *Variable Anzahl Zähne, je nach Abmessung*
- *Für Gewindetiefen bis 2.5 x D_1*

*** *** *** *** *** *** *** ***

- Feed rate multiplied by number of teeth
- Less wear, longer tool life
- The number of teeth varies, depending on the size
- For threading depths up to 2.5 x D_1

Gewindewirbler GW *SERIES 3000* — Thread whirl cutter GW SERIES 3000

- *Prozesssicherheit, weniger Radius-Werkzeugkorrekturen auf der CNC*
- *Für Gewindetiefen bis 4 x D_1*

*** *** *** *** *** *** *** ***

- Secure process, reduction in NC-corrections
- For threading depths up to 4 x D_1

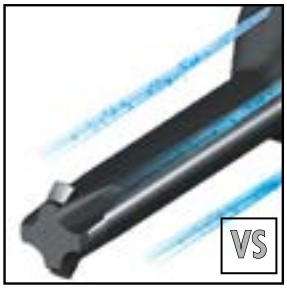
Gewindewirbler GWi *SERIES 3000* — Thread whirl cutter GWi SERIES 3000

- *Dank optimaler, spezifischer Kühlmittelzufuhr:*
  - *verbesserte Spanabfuhr*
  - *doppelte Standzeit*
- *Für Gewindetiefen bis 4 x D_1*

*** *** *** *** *** ***

- Thanks to an optimal, specific coolant supply:
  - improved chip evacuation
  - twice the tool life
- For threading depths up to 4 x D_1

Gewindewirbler GWi *SERIES 5000* — Thread whirl cutter GWi SERIES 5000



- *Seine spezifische Geometrie erlaubt das Schlichten des Kerndurchmessers und auch das Entgraten des hergestellten Profils*
- *Geometrisch einwandfreies Gewinde dank spezieller Schnittaufteilung*
- *Für absolut gratfreie Gewinde, selbst in schwer zerspanbaren Werkstoffen, unter Einhaltung der Masshaltigkeit (Toleranz)*
- *Hohe Oberflächenqualität dank spezifischer Schneidkantenkonditionierung*
- *Sehr gute Spanevakuierung und hohe Standzeit dank optimaler Kühlmittelzufuhr*
- *Prozesssicherheit, weniger Radius-Werkzeugkorrekturen auf der CNC*
- *LH-Rotation - Linksschneidend für weniger Druck auf den Schneidkanten*
- *Für Gewindetiefen bis 3 x D_1*

*** *** *** *** *** *** *** *** *** ***

- Its specific geometry allows the final milling of the internal diameter and also the deburring of the realised profile
- Geometrically perfect thread thanks to special cutting division
- For absolutely burr-free threads, even in difficult-to-machine materials, while maintaining dimensional accuracy (tolerance)
- High surface quality thanks to specific cutting edge conditioning
- Improved chip evacuation and long tool life thanks to optimum coolant supply
- Secure process, reduction in NC-corrections
- LH rotation - left-hand cutting for less pressure on the cutting edges
- For threading depths up to 3 x D_1

Gewindewirbler GWH *SERIES 3000* — Thread whirl cutter GWH SERIES 3000

- *Speziell angepasste Schneidengeometrie für hohe Prozesssicherheit bei der Bearbeitung von hochfesten Werkstoffen bis 63 HRC*
- *Hohe Oberflächenqualität dank spezifischer Schneidkantenkonditionierung*
- *LH-Rotation - Linksschneidend für weniger Druck auf den Schneidkanten*
- *Für Gewindetiefen bis 3 x D_1*

*** *** *** *** *** *** *** *** *** ***

- Special cutting geometry for high process security when machining high-tensile materials up to 63 HRC
- High surface quality thanks to specific cutting edge conditioning
- LH rotation - left-hand cutting for less pressure on the cutting edges
- For threading depths up to 3 x D_1

Zirkular-Bohrgewindefräser ZBGF *SERIES 6000* — Circular drill thread milling cutter ZBGF SERIES 6000

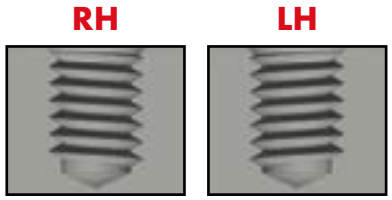
- *Kombiniertes Werkzeug zum Schneiden des Kernloches und Wirbeln des Gewindes*
- *Fortschrittliche Innenkühlung für optimale Spanabfuhr (mindestens 20 bar)*
- *Hohe Oberflächenqualität dank spezifischer Schneidkantenkonditionierung*
- *LH-Rotation - Linksschneidend für weniger Druck auf den Schneidkanten*
- *Für Gewindetiefen bis 3 x D_1*

*** *** *** *** *** *** *** *** *** ***

- Combinated tool for drilling the core hole and whirling the thread
- Advanced internal cooling for optimum chip removal (at least 20 bar)
- High surface quality thanks to specific cutting edge conditioning
- LH rotation - left-hand cutting for less pressure on the cutting edges
- For threading depths up to 3 x D_1

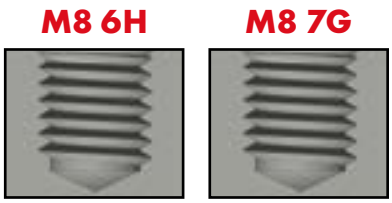
SPEZIFISCHE ANWENDUNGSFÄLLE — SPECIFIC APPLICATION CASES

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

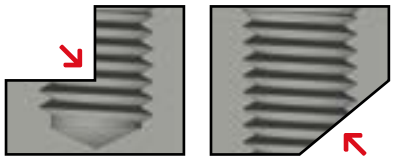


Ein einziger Gewindewirbler / Gewindefräser für Rechts- und Linksgewinde
The same thread whirler / cutter can be used for right- and left-hand threads

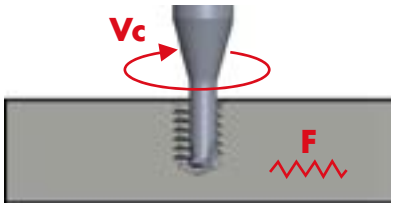
Für Gewinde bis fast auf den Grund der Vorbohrung
For threads to be cut near to the bottom of blind holes



Je nach Wahl, gewünschte Toleranz einstellbar
Required tolerance adjustable as per users choice

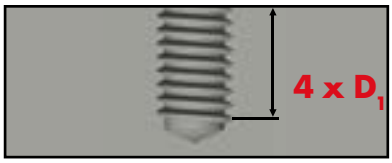


Für Gewinde mit unterbrochenem Schnitt, mit schrägem Anschnitt oder Austritt
For threads with interrupted cut or with oblique entrance or exit



Schnittgeschwindigkeit und Vorschub können dem zu bearbeitenden Werkstoff individuell angepasst werden
The cutting speed and feed rate can be matched individually to each work-piece material

GW - GWi

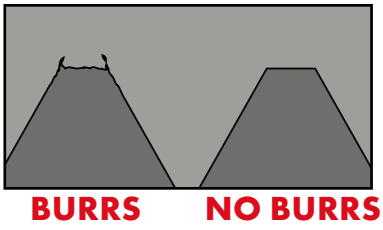


Ideal für tiefe Sacklöcher
Ideal for deep blind holes

GWH - GFH

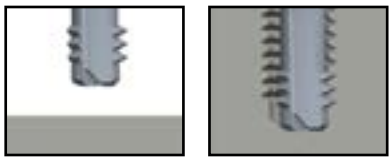
Gewinde in hochfeste Werkstoffe können realisiert werden
To realise threads in hardened materials

GWi5000

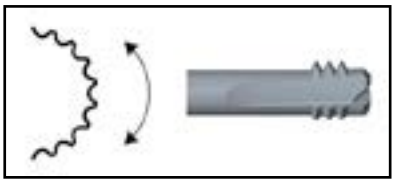


Zum Wirbeln gratfreier Gewinde
For whirling burr-free threads

ZBGF

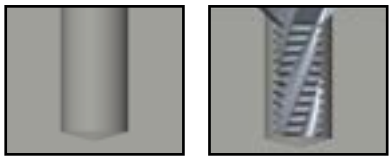


Kombiniertes Werkzeug zum Schneiden des Kernloches und des Gewindes
Combinated tool for drilling and threading



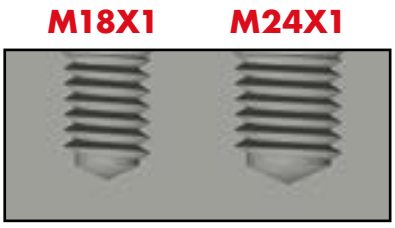
Platzgewinn im Werkzeugmagazin der Maschine; Zeiteinsparung beim Werkzeugwechsel
Space-saving in the tool carousel; time saving when tool changing

GFS



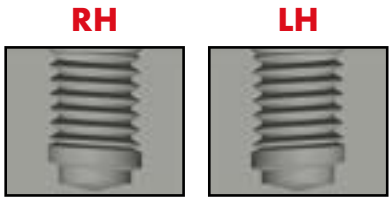
45° Ansenkung und Gewindefräsen mit einem Werkzeug
45° countersinking and thread milling with one only tool

GFM

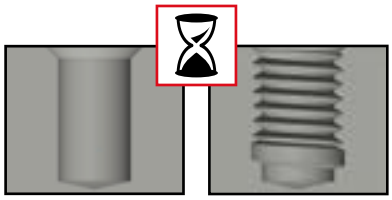


Ein einziger Gewindefräser für einen grossen Durchmesserbereich mit gleicher Steigung
One only tool for threads of a wide range of diameters with the same pitch

BGF



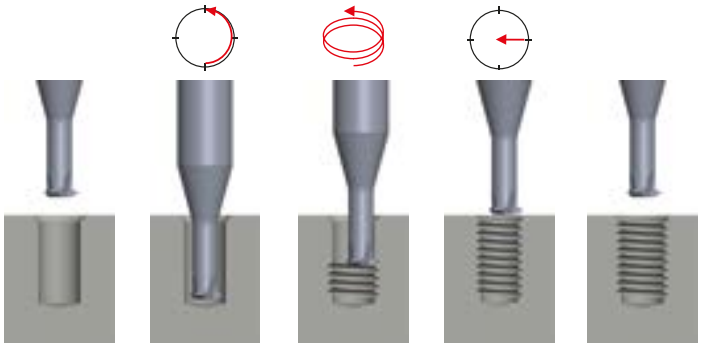
Ein einziger Bohrgewindefräser für Rechts- und Linksgewinde
The same thriller can be used for right- and left-hand threads



Platzgewinn im Werkzeugmagazin der Maschine und Einsparung von Bearbeitungszeit
Space-saving in the tool carousel and saving of machining time

ANWENDUNGSTABELLE GW— APPLICATION CHART GW

Programmierzyklus für Gewindewirbler GW1000 und GW2000
Programming cycle for thread whirling GW1000 and GW2000



Anwendungstabelle für Gewindewirbler — Application chart for thread whirling

	Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Kühlung / Lubricant: Standard	Kühlung / Lubricant: Beschichtet / Coated
10	Stahl / Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O D
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O D
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O D
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O D
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl / Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		O D
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		O D
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O D
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O D
30	Guss / Cast iron	31	Grauguss	Cast iron	< 250	< 850		O D A
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		O D
40	Titan / Titanium	41	Reintitan	Pure titanium	< 250	< 850	O E	O D
		42	Titanlegierung	Titanium alloys	> 250	> 850	O E	O D
50	Nickel / Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D
60	Kupfer / Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	O E	O D
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	O E A	O D A
		63	Messing (langspanend)	Long chip brass	< 200	< 700	O E	O D
70	Aluminium Magnesium / Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	O E	O D
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	O E	O D
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O D
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D
80	Kunststoff / Plastic compounds	81	Thermoplaste	Thermoplastics	-	-	E	D
		82	Duroplaste	Duroplastics	-	-	E	D
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		D A
90	Edelmetalle / Precious metals	91	Gelbgold	Yellow gold	-	-	O E	O D
		92	Rotgold	Red gold	-	-	O E	O D
		93	Weissgold	White gold	-	-		O D
		94	Silber	Silver	-	-		O D

O — Optimal mit Schneidöl / Optimal with cutting oil
O — Geeignet mit Schneidöl / Suitable with cutting oil
E — Optimal mit Emulsion / Optimal with emulsion
E — Geeignet mit Emulsion / Suitable with emulsion

GW1116

Vc (m/min)		Vorschub fz (mm/Zahn)	Milling fz (mm/tooth)
Standard Standard	Beschichtet Coated	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	90-120	0.004-0.02	0.004-0.02
	30-50		0.004-0.02
	90-120		0.004-0.02

GW2016

Vc (m/min)		Vorschub fz (mm/Zahn)				Milling fz (mm/tooth)				
Standard Standard	Beschichtet Coated	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	90-120	0.004-0.01	0.004-0.01	0.01-0.05	0.01-0.05	0.02-0.10	0.02-0.10	0.04-0.15	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

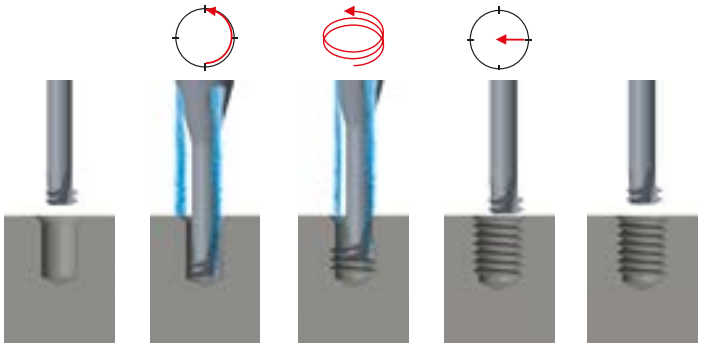
Optimal mit Luft
Optimal with air

Geeignet mit Luft
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

ANWENDUNGSTABELLE GW - GWi — APPLICATION CHART GW - GWi

Programmierzyklus für Gewindewirbler GW3000 - GWi3000
Programming cycle for thread whirling GW3000 - GWi3000



Anwendungstabelle für Gewindewirbler — Application chart for thread whirling

	Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Kühlung / Lubricant: Standard	Kühlung / Lubricant: Beschichtet / Coated
10	Stahl / Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O D
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O D
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O D
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O D
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl / Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		O D
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		O D
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O D
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O D
30	Guss / Cast iron	31	Grauguss	Cast iron	< 250	< 850		O D A
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		O D
40	Titan / Titanium	41	Reintitan	Pure titanium	< 250	< 850	O E	O D
		42	Titanlegierung	Titanium alloys	> 250	> 850	O E	O D
50	Nickel / Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D
60	Kupfer / Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	O E	O D
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	O E A	O D A
		63	Messing (langspanend)	Long chip brass	< 200	< 700	O E	O D
70	Aluminium Magnesium / Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	O E	O D
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	O E	O D
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O D
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D
80	Kunststoff / Plastic compounds	81	Thermoplaste	Thermoplastics	-	-	E	D
		82	Duroplaste	Duroplastics	-	-	E	D
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		D A
90	Edelmetalle / Precious metals	91	Gelbgold	Yellow gold	-	-	O E	O D
		92	Rotgold	Red gold	-	-	O E	O D
		93	Weissgold	White gold	-	-		O D
		94	Silber	Silver	-	-		O D

O *Optimal mit Schneidöl* / Optimal with cutting oil

O *Geeignet mit Schneidöl* / Suitable with cutting oil

E *Optimal mit Emulsion* / Optimal with emulsion

E *Geeignet mit Emulsion* / Suitable with emulsion

GW3000 - GWi3000

Vc (m/min)		GW3016 GW3017 GW3019	GW3016VS GW3017VS GW3019VS GWi3066VS GWi3067VS GWi3069VS	GW3016VX GW3017VX GWi3066VX GWi3067VX	GW3016 GW3017 GW3019	GW3016VS GW3017VS GW3019VS GWi3066VS GWi3067VS GWi3069VS	GW3016VX GW3017VX GWi3066VX GWi3067VX	GW3016 GW3017 GW3019	GW3016VS GW3017VS GW3019VS GWi3066VS GWi3067VS GWi3069VS	GW3016VX GW3017VX GWi3066VX GWi3067VX	
			VS	VX		VS	VX		VS	VX	
		Vorschub fz (mm/Zahn)						Milling fz (mm/tooth)			
Standard Standard	Beschichtet Coated	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

Optimal mit Luft
Optimal with air

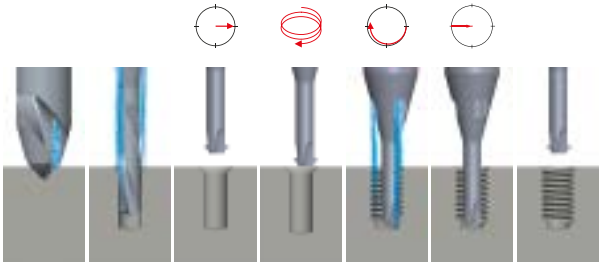
Geeignet mit Luft
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

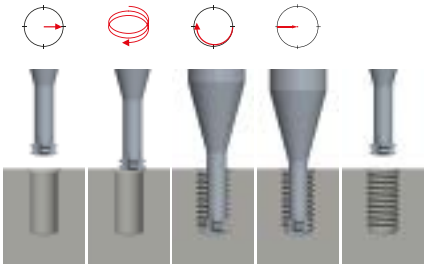
ANWENDUNGSTABELLE GWi - GWH — APPLICATION CHART GWi - GWH

Programmierzyklus für Gewindewirbler GWi5000 - GWH3000
Programming cycle for thread whirling GWi5000 - GWH3000

GWi5000



GWH3000



Anwendungstabelle für Gewindewirbler — Application chart for thread whirling

	Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Kühlung / Lubricant: Standard	Kühlung / Lubricant: Beschichtet / Coated
10	Stahl / Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O D
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O D
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O D
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O D
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl / Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		E D
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		E D
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		E D
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		E D
30	Guss / Cast iron	31	Grauguss	Cast iron	< 250	< 850		O D
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		O D
40	Titan / Titanium	41	Reintitan	Pure titanium	< 250	< 850		E D
		42	Titanlegierung	Titanium alloys	> 250	> 850		E D
50	Nickel / Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D
60	Kupfer / Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400		O D
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700		O D
		63	Messing (langspanend)	Long chip brass	< 200	< 700		O D
70	Aluminium Magnesium / Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350		E D
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500		E D
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		E D
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D
80	Kunststoff / Plastic compounds	81	Thermoplaste	Thermoplastics	-	-		D
		82	Duroplaste	Duroplastics	-	-		D
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		D
90	Edelmetalle / Precious metals	91	Gelbgold	Yellow gold	-	-		E D
		92	Rotgold	Red gold	-	-		E D
		93	Weissgold	White gold	-	-		E D
		94	Silber	Silver	-	-		E D

O Optimal mit Schneidöl / Optimal with cutting oil

O Geeignet mit Schneidöl / Suitable with cutting oil

E Optimal mit Emulsion / Optimal with emulsion

E Geeignet mit Emulsion / Suitable with emulsion

		GWi5000					GWH3000		
									
		VS	VS				VH	VH	
Vc (m/min)		Vorschub fz (mm/Zahn)	Milling fz (mm/tooth)	Kühlung Lubricant		Vc (m/min)	Vorschub fz (mm/Zahn)	Milling fz (mm/tooth)	
Standard Standard	Beschichtet Coated	Ø 0.80 - 2.74	Ø 2.75 - 6.00	Standard Standard	Beschichtet Coated	Standard Standard	Ø 2.75 - 6.00	Ø 6.01 - 12.70	
	80-100	0.007-0.05	0.04-0.10						11
	80-100	0.007-0.05	0.04-0.10						12
	70-90	0.007-0.05	0.02-0.10						13
	70-90	0.007-0.05	0.02-0.10						14
	30-50	0.007-0.05	0.02-0.08						15
	15-40	0.004-0.03	0.008-0.05		D		15-40	0.008-0.05	0.01-0.08	16
	15-30	0.004-0.025	0.008-0.04		D		15-30	0.008-0.04	0.01-0.06	17
					A		25-50	0.01-0.025	0.015-0.035	18
	40-60	0.007-0.05	0.02-0.10						21
	30-50	0.007-0.03	0.02-0.05						22
	30-50	0.007-0.03	0.02-0.05						23
	30-50	0.007-0.03	0.02-0.05						24
	90-120	0.007-0.05	0.04-0.10		D A		90-120	0.04-0.10	0.08-0.15	31
	70-90	0.007-0.05	0.02-0.10						32
	20-40	0.007-0.03	0.02-0.05						41
	15-35	0.007-0.03	0.02-0.05						42
	20-40	0.007-0.03	0.02-0.06						51
	20-40	0.007-0.03	0.02-0.06						52
	20-30	0.004-0.03	0.008-0.05						53
	200-250	0.007-0.05	0.02-0.10						61
	150-200	0.007-0.05	0.04-0.10		D A		150-200	0.04-0.10	0.08-0.15	62
	150-200	0.007-0.05	0.02-0.10						63
	200-300	0.007-0.05	0.05-0.10						71
	200-300	0.007-0.05	0.05-0.10						72
	200-300	0.007-0.05	0.05-0.10						73
	200-300	0.007-0.05	0.04-0.10		D A		200-300	0.04-0.10	0.08-0.15	74
	200-300	0.007-0.05	0.05-0.10						81
	100-200	0.007-0.05	0.04-0.10						82
	80-100	0.007-0.05	0.04-0.10		D A		80-100	0.04-0.10	0.08-0.15	83
	150-200	0.007-0.05	0.04-0.10						91
	90-120	0.007-0.05	0.02-0.10						92
	30-50	0.007-0.05	0.02-0.05						93
	90-120	0.007-0.05	0.02-0.10						94

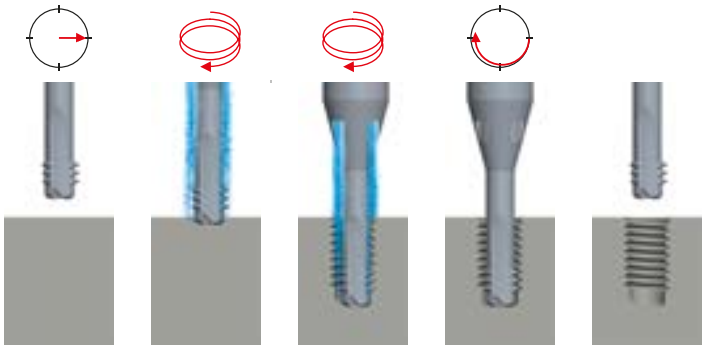
A ***Optimal mit Luft***
Optimal with air

A ***Geeignet mit Luft***
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

ANWENDUNGSTABELLE ZBGF — APPLICATION CHART ZBGF

Programmierzyklus für Zirkular-Bohrgewindefräser ZBGF6065 - ZBGF6067
Programming cycle for circular drill thread milling cutters ZBGF6065 - ZBGF6067



Anwendungstabelle für ZBGF

Application chart for ZBGF

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Kühlung Lubricant Standard	Kühlung Lubricant Beschichtet Coated
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O D
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O D
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O D
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O D
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		O D
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		O D
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O D
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O D
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850		O D
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		O D
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850		O D
		42	Titanlegierung	Titanium alloys	> 250	> 850		O D
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400		
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700		O D
		63	Messing (langspanend)	Long chip brass	< 200	< 700		O D
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350		O D
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500		O D
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O D
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D
80	Kunststoff Plastic compounds	81	Thermoplaste	Thermoplastics	-	-		D
		82	Duroplaste	Duroplastics	-	-		D
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		D
90	Edelmetalle Precious metals	91	Gelbgold	Yellow gold	-	-		O D
		92	Rotgold	Red gold	-	-		O D
		93	Weissgold	White gold	-	-		O D
		94	Silber	Silver	-	-		O D

O Optimal mit Schneidöl / Optimal with cutting oil

O Geeignet mit Schneidöl / Suitable with cutting oil

E Optimal mit Emulsion / Optimal with emulsion

E Geeignet mit Emulsion / Suitable with emulsion

Vc (m/min)		ZBGF		
		ZBGF6065VS	ZBGF6067VS	
				
		VS	VS	
Standard Standard	Beschichtet Coated	Vorschub fz (mm/Zahn)	Milling fz (mm/tooth	
	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

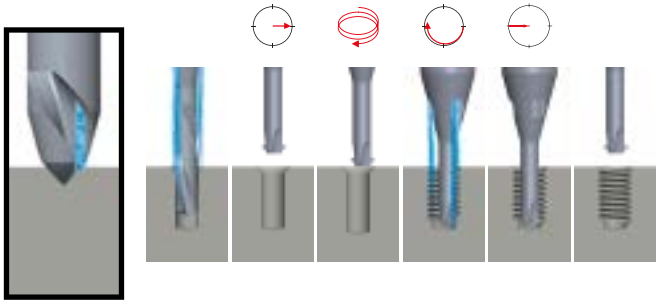
A ***Optimal mit Luft***
Optimal with air

A ***Geeignet mit Luft***
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

ANWENDUNGSTABELLE C315VS — APPLICATION CHART C315VS

Programmierzyklus für Zentrierbohrer C315VS
Programming cycle for spotting drills C315VS



Anwendungstabelle für Zentrierbohrer — Application chart for spotting drills

	Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Kühlung / Lubricant: Standard	Kühlung / Lubricant: Beschichtet / Coated
10	Stahl / Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O D
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O D
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O D
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O D
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl / Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		O D
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		O D
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O D
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O D
30	Guss / Cast iron	31	Grauguss	Cast iron	< 250	< 850		O D
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		O D
40	Titan / Titanium	41	Reintitan	Pure titanium	< 250	< 850		O D
		42	Titanlegierung	Titanium alloys	> 250	> 850		O D
50	Nickel / Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D
60	Kupfer / Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400		O D
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700		O D
		63	Messing (langspanend)	Long chip brass	< 200	< 700		O D
70	Aluminium Magnesium / Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350		O D
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500		O D
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O D
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D
80	Kunststoff / Plastic compounds	81	Thermoplaste	Thermoplastics	-	-		D
		82	Duroplaste	Duroplastics	-	-		D
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		D
90	Edelmetalle / Precious metals	91	Gelbgold	Yellow gold	-	-		O D
		92	Rotgold	Red gold	-	-		O D
		93	Weissgold	White gold	-	-		O D
		94	Silber	Silver	-	-		O D

O Optimal mit Schneidöl / Optimal with cutting oil

O Geeignet mit Schneidöl / Suitable with cutting oil

E Optimal mit Emulsion / Optimal with emulsion

E Geeignet mit Emulsion / Suitable with emulsion

C315VS

Vc (m/min)		Vorschub f (mm/U) / Feed rate f (mm/rev.)						
Standard Standard	Beschichtet Coated	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

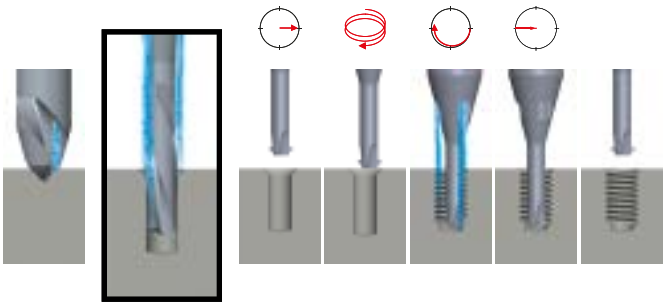
Optimal mit Luft
Optimal with air

Geeignet mit Luft
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

ANWENDUNGSTABELLE FZ315VS — APPLICATION CHART FZ315VS

Programmierzyklus für Spiralbohrer FZ315VS
Programming cycle for twist drills FZ315VS



Anwendungstabelle für Spiralbohrer

Application chart for twist drills

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Kühlung Lubricant	
							Standard Standard	Beschichtet Coated
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O D
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O D
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O D
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O D
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		O D
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		O D
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O D
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O D
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850		O D
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		O D
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850		O D
		42	Titanlegierung	Titanium alloys	> 250	> 850		O D
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400		O D
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700		O D
		63	Messing (langspanend)	Long chip brass	< 200	< 700		O D
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350		O D
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500		O D
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O D
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D
80	Kunststoff Plastic compounds	81	Thermoplaste	Thermoplastics	-	-		D
		82	Duroplaste	Duroplastics	-	-		D
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		D
90	Edelmetalle Precious metals	91	Gelbgold	Yellow gold	-	-		O D
		92	Rotgold	Red gold	-	-		O D
		93	Weissgold	White gold	-	-		O D
		94	Silber	Silver	-	-		O D

O *Optimal mit Schneidöl*
Optimal with cutting oil

O *Geeignet mit Schneidöl*
Suitable with cutting oil

E *Optimal mit Emulsion*
Optimal with emulsion

E *Geeignet mit Emulsion*
Suitable with emulsion

FZ315VS

Vc (m/min) Ø 0.58 - 2.0		Vorschub f (mm/U)				Feed rate f (mm/rev.)		
Standard Standard	Beschichtet Coated	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	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	11
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	12
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	13
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	14
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	15
	35-55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	16
	30-45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	17
								18
	30-45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	21
	30-45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-4xd1	$1xd_1$-$2xd_1$	22
	35-50	0.02-0.025	0.025-0.035	0.04-0.05	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	23
	35-50	0.02-0.025	0.025-0.035	0.04-0.05	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	24
	50-80	0.025-0.045	0.045-0.065	0.065-0.085	0.085-0.10	$4xd_1$-$8xd_1$	$4xd_1$	31
	40-70	0.025-0.045	0.045-0.065	0.065-0.085	0.085-0.10	$4xd_1$-$8xd_1$	$4xd_1$	32
	15-25	0.005-0.02	0.015-0.045	0.04-0.06	0.055-0.07	$1/2xd_1$-$1xd_1$	$1/4xd_1$-$1/2xd_1$	41
	15-25	0.005-0.02	0.015-0.045	0.04-0.06	0.055-0.07	$1/2xd_1$-$1xd_1$	$1/4xd_1$-$1/2xd_1$	42
	15-25	0.005-0.02	0.02-0.025	0.025-0.035	0.035-0.05	$1/2xd_1$-$1xd_1$	$1/2xd_1$	51
	15-25	0.015-0.02	0.02-0.025	0.025-0.035	0.035-0.05	$1/2xd_1$-$1xd_1$	$1/2xd_1$	52
	15-25	0.005-0.01	0.01-0.02	0.02-0.03	0.03-0.04	$1/2xd_1$-$1xd_1$	$1/2xd_1$	53
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	61
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	62
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	63
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	71
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	72
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	73
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	74
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	81
	50-80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	82
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	83
	50-80	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	91
	50-80	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	92
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	93
	40-60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	94

FZ315VS

Vc (m/min) Ø 2.01 - 5.4		Vorschub f (mm/U)			Feed rate f (mm/rev.)		
Standard Standard	Beschichtet Coated	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		11
	80-110	0.07-0.12	0.12-0.17	0.17-0.22		12
	70-100	0.07-0.12	0.12-0.17	0.17-0.22		13
	70-100	0.07-0.12	0.12-0.17	0.17-0.22		14
	70-100	0.07-0.12	0.12-0.17	0.17-0.22		15
	70-100	0.07-0.10	0.10-0.14	0.14-0.17		16
	60-80	0.07-0.10	0.10-0.15	0.14-0.18		17
						18
	60-80	0.045-0.055	0.055-0.07	0.07-0.10		21
	60-80	0.045-0.055	0.055-0.07	0.07-0.10		22
	60-80	0.05-0.065	0.05-0.065	0.06-0.09		23
	60-80	0.05-0.065	0.05-0.065	0.06-0.09		24
	90-130	0.10-0.15	0.15-0.20	0.20-0.25		31
	80-120	0.10-0.14	0.14-0.18	0.18-0.23		32
	30-40	0.055-0.07	0.055-0.07	0.055-0.07	$1/3xd_1$-$1/2xd_1$	41
	30-40	0.055-0.07	0.055-0.07	0.055-0.07	$1/3xd_1$-$1/2xd_1$	42
	30-40	0.035-0.05	0.035-0.05	0.05-0.08		51
	30-40	0.035-0.05	0.035-0.05	0.05-0.08		52
	30-40	0.03-0.04	0.03-0.04	0.04-0.06		53
	130-180	0.12-0.15	0.15-0.20	0.20-0.25		61
	130-180	0.12-0.15	0.15-0.20	0.20-0.25		62
	80-110	0.12-0.15	0.14-0.18	0.18-0.23		63
	130-180	0.12-0.15	0.15-0.20	0.20-0.25		71
	130-180	0.12-0.15	0.15-0.20	0.20-0.25		72
	100-130	0.12-0.15	0.14-0.18	0.18-0.23		73
	100-130	0.12-0.15	0.14-0.18	0.18-0.23		74
	130-180	0.12-0.15	0.15-0.20	0.20-0.25		81
	130-180	0.12-0.15	0.15-0.20	0.20-0.25		82
	80-120	0.07-0.12	0.12-0.18	0.18-0.23		83
	130-180	0.07-0.12	0.12-0.17	0.17-0.22		91
	130-180	0.07-0.12	0.12-0.17	0.17-0.22		92
	80-110	0.07-0.12	0.12-0.17	0.17-0.22		93
	80-110	0.07-0.12	0.12-0.17	0.17-0.22		94

A ***Optimal mit Luft***
Optimal with air

A ***Geeignet mit Luft***
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

ANWENDUNGSTABELLE F286VS — APPLICATION CHART F286VS

Anwendungstabelle für Spiralbohrer

Application chart for twist drills

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Kühlung Lubricant Standard	 Beschichtet Coated
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700		O E
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700		O E
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000		O E
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850		O E
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O E
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850		
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850		O E
		22	Austenitisch	Austenitic stainless steels	< 250	< 850		O E
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O E
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O E
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850		
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850		
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850		O E
		42	Titanlegierung	Titanium alloys	> 250	> 850		
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O E
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400		O E
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700		
		63	Messing (langspanend)	Long chip brass	< 200	< 700		O E
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350		O E
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500		O E
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O E
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		
80	Kunststoff Plastic compounds	81	Thermoplaste	Thermoplastics	-	-		
		82	Duroplaste	Duroplastics	-	-		
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-		
90	Edelmetalle Precious metals	91	Gelbgold	Yellow gold	-	-		
		92	Rotgold	Red gold	-	-		
		93	Weissgold	White gold	-	-		O E
		94	Silber	Silver	-	-		O E

O *Optimal mit Schneidöl*
Optimal with cutting oil

O *Geeignet mit Schneidöl*
Suitable with cutting oil

E *Optimal mit Emulsion*
Optimal with emulsion

E *Geeignet mit Emulsion*
Suitable with emulsion

F286VS

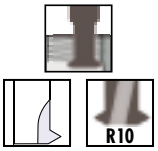
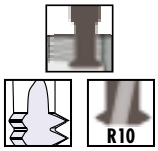
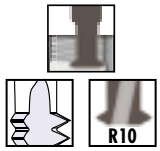
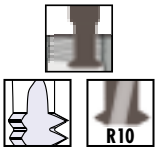
Vc (m/min)		VS	VS	VS	VS	VS	VS	
		Vorschub f (mm/U)			Feed rate f (mm/rev.)			
Standard Standard	Beschichtet Coated	Ø 0.8 - 1.2	Ø 1.21 - 3.0	Ø 3.01 - 6.0	Ø 6.01 - 8.5	Ø 8.51 - 11.0	Ø 11.02 - 14.0	
	70-90	0.015-0.025	0.015-0.025	0.035-0.045	0.11-0.13	0.15-0.17	0.18-0.22	11
	70-90	0.10-0.20	0.015-0.025	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 ***Optimal mit Luft***
Optimal with air

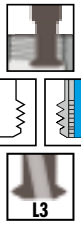
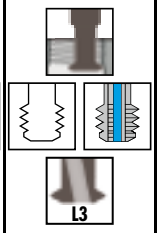
A ***Geeignet mit Luft***
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

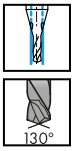
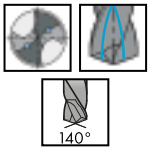
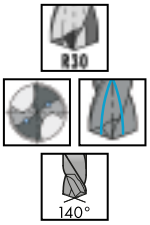
Inhaltsverzeichnis - VHM-Gewindewirbler Typ GW
Directory - Solid carbide thread whirl cutters type GW

		GW										
Typ **Type**		GW1116	GW1116VS	GW2016	GW2016VS	GW3016	GW3016VS	GW3016VX	GW3017	GW3017VS	GW3017VX	GW3019	GW3019VS
Beschichtung **Coating**			VS		VS		VS	VX		VS	VX		VS
													
Gewindelänge **Thread length**		 2.5 x D_1		 2.5 x D_1		 2.5 x D_1			 3 x D_1			 4 x D_1	
Merkmale **Characteristics**		 R10		 R10		 R10			 R10			 R10	
M	ISO DIN 14 ISO DIN 13	44	44	47	47	50	50	50	51	51	51	52	52
MF	ISO DIN 13					53	53	53	54	54	54	55	55
UNC	ASME B1.1					56	56	56	57	57	57	58	58
UNF	ASME B1.1					59	59	59	60	60	60	61	61
S	NIHS 06-10	45	45	48	48	62	62	62	63	63	63	64	64
SL	SL 15-01	46	46	49	49	62	62						

Inhaltsverzeichnis - VHM-Gewindewirbler Typ GWi - GWH, Zirkular-Bohrgewindefräser Typ ZBGF
Directory - Solid carbide thread whirl cutters type GWi - GWH, circular drill thread milling cutters type ZBGF

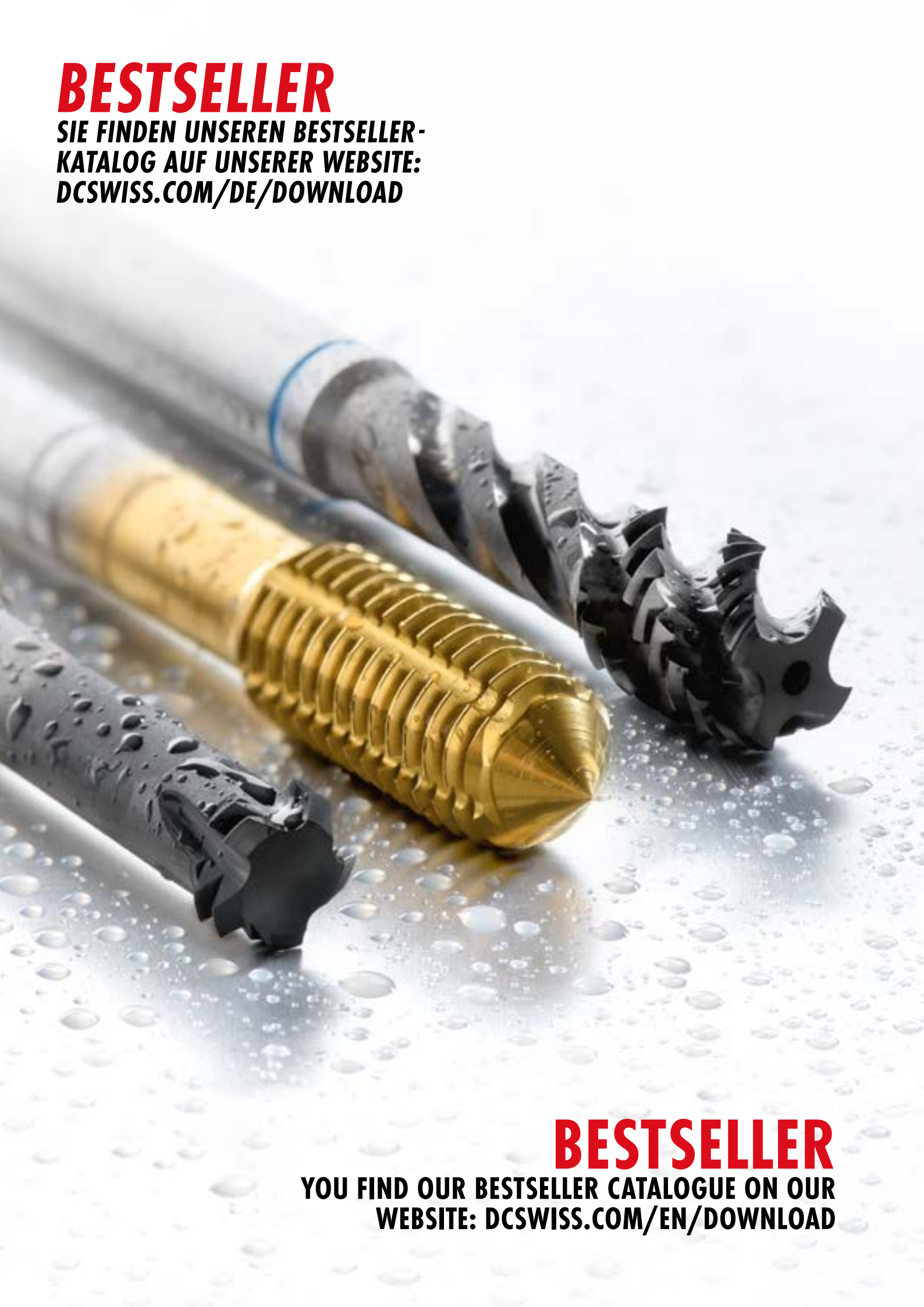
		GWi							GWH		ZBGF	
Typ Type		GWi3066VS	GWi3066VX	GWi3067VS	GWi3067VX	GWi3069VS	GWi5066VS	GWi5067VS	GWH3015VH	GWH3017VH	ZBGF6065VS	ZBGF6067VS
Beschichtung Coating		VS	VX	VS	VX	VS	VS	VS	VH	VH	VS	VS
												
Gewindelänge Thread length												
Merkmale Characteristics												
M	ISO DIN 14 ISO DIN 13	65	65	66	66	68	82	82	89	89	90	90
MJ	ISO 5855			67	67							
MF	ISO DIN 13	69	69	70	70	72						
MJF	ISO 5855			71	71							
UNC	ASME B1.1	73	73	74	74	76	83	83			91	91
UNJC	ISO 3161			75	75							
UNF	ASME B1.1	77	77	78	78	80	84	84			92	92
UNJF	ISO 3161			79	79							
S	NIHS 06-10	81	81	81	81		85					

Inhaltsverzeichnis - VHM-Zentrierbohrer Typ C, VHM-Spiralbohrer Typ FZ - F
Directory - Solid carbide spotting drills type C, solid carbide twist drills type FZ - F

	C	FZ		F
Typ **Type**	**C315VS**	**FZ315VS**	**FZ315VS**	**F286VS**
Beschichtung **Coating**	VS	VS	VS	VS
				
Bohrtiefe **Drilling depth**				
Merkmale **Characteristics**				
C315VS	86			
FZ315VS		87	87	
F286VS				88

BESTSELLER

SIE FINDEN UNSEREN BESTSELLER-KATALOG AUF UNSERER WEBSITE: DCSWISS.COM/DE/DOWNLOAD



BESTSELLER

YOU FIND OUR BESTSELLER CATALOGUE ON OUR WEBSITE: DCSWISS.COM/EN/DOWNLOAD

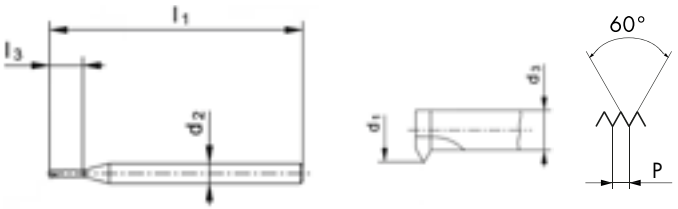
M ISO DIN 14 ISO DIN 13

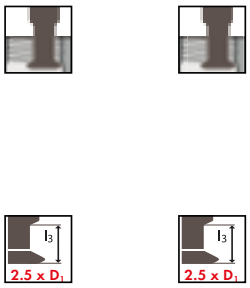
VHM CAR | < 3µm | DC | h5

GW

GW1116

GW1116VS





Ø D_1 M	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW1116 ID	GW1116VS 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 [1]	● 194229	● 194247
0.5	0.125	0.36	39	1.5	3	0.19	1	0.41 [1]	● 194230	● 194248
0.6	0.15	0.43	39	1.7	3	0.23	1	0.5 [1]	● 194231	● 194249
0.7	0.175	0.5	39	2	3	0.27	1	0.58 [1]	● 194232	● 194250
0.8	0.2	0.57	39	2.3	3	0.31	1	0.66 [1]	● 194233	● 194251
0.9	0.225	0.64	39	2.6	3	0.34	1	0.74 [1]	● 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

[1] **4H5H → 4H6H =** +0.02mm

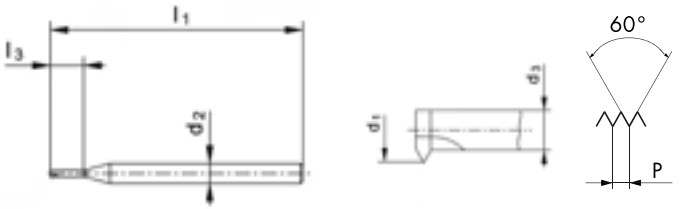
S NIHS 06-10

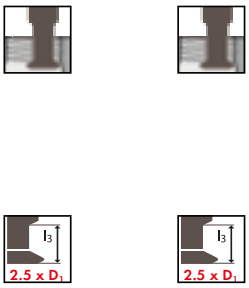
VHM CAR | < 3µm | DC | h5

GW

GW1116

GW1116VS





Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW1116 ID	GW1116VS 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 [1]	● 166931	● 166941
0.5	0.125	0.36	39	1.5	3	0.19	1	0.41 [1]	● 166932	● 166942
0.6	0.15	0.43	39	1.7	3	0.23	1	0.5 [1]	● 166933	● 166943
0.7	0.175	0.5	39	2	3	0.27	1	0.58 [1]	● 166934	● 166944
0.8	0.2	0.57	39	2.3	3	0.31	1	0.66 [1]	● 166935	● 166945
0.9	0.225	0.64	39	2.6	3	0.34	1	0.74 [1]	● 166936	● 166946
1	0.25	0.71	39	2.9	3	0.38	1	0.82 [1]	● 166937	● 166947
1.2	0.25	0.91	39	3.4	3	0.58	1	1.02 [1]	● 166938	● 166948
1.4	0.3	1.06	39	3.9	3	0.66	1	1.18 [1]	● 166939	● 166949

[1] **4H5H → 4H6H =** +0.02mm

SL

SL 15-01

VHM CAR | < 3µm | DC | h5

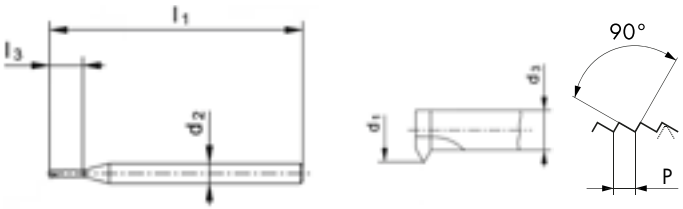
GW

GW1116	GW1116VS		

GW1116


GW1116VS





Ø 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

M ISO DIN 14 ISO DIN 13

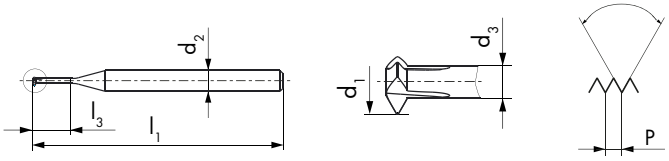
VHM CAR | < 3µm | DC | h5

GW

GW2016	GW2016VS		

GW2016 — R10

GW2016VS — R10 — VS



Ø D_1 M	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.5	0.125	0.36	39	1.5	3	0.19	3	0.41 [1]	194262	194275
0.6	0.15	0.43	39	1.7	3	0.22	3	0.5 [1]	194263	194276
0.7	0.175	0.5	39	2	3	0.26	3	0.58 [1]	194264	194277
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 [1]	166974	166993
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 [1]	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

[1] 4H5H → 4H6H = +0.02mm

S NIHS 06-10

VHM CAR | < 3µm | DC | h5

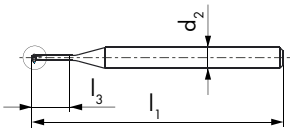
GW

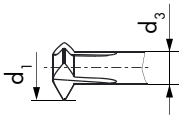
GW2016 | GW2016VS

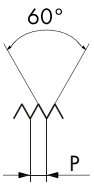
GW2016 — R10

GW2016VS — R10 — VS









Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW2016 ID	GW2016VS ID
0.5	0.125	0.36	39	1.5	3	0.19	3	0.41 [1]	● 181410	● 181413
0.6	0.15	0.43	39	1.7	3	0.22	3	0.5 [1]	● 181374	● 180947
0.7	0.175	0.5	39	2	3	0.26	3	0.58 [1]	● 181375	● 181378
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 [1]	● 166969	● 166988
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 [1]	● 166970	● 166989
1	0.25	0.71	39	2.9	3	0.36	3	0.82 [1]	● 166971	● 166990
1.2	0.25	0.91	39	3.4	3	0.56	3	1.02 [1]	● 166972	● 166991
1.4	0.3	1.06	39	3.9	3	0.64	3	1.18 [1]	● 166973	● 166992

[1] **4H5H → 4H6H =** +0.02mm

SL SL 15-01

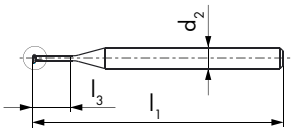
VHM CAR | < 3µm | DC | h5

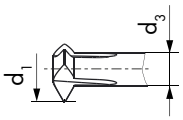
GW

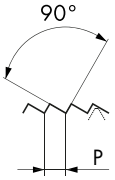
GW2016

GW2016VS









Ø D_1 SL	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW2016 ID	GW2016VS ID
0.5	**0.1**	0.39	39	1.4	3	0.25	3	0.46	**600249**	**600257**
0.6	**0.125**	0.46	39	1.7	3	0.29	3	0.55	**600250**	**600258**
0.7	**0.15**	0.53	39	2	3	0.32	3	0.64	**600251**	**600259**
0.8	**0.15**	0.63	39	2.2	3	0.42	3	0.74	**600252**	**600260**
0.9	**0.175**	0.7	39	2.5	3	0.46	3	0.83	**600253**	**600261**
1	**0.2**	0.77	39	2.8	3	0.49	3	0.92	**600254**	**600262**
1.2	**0.2**	0.97	39	3.3	3	0.69	3	1.12	**600255**	**600263**
1.4	**0.25**	1.11	39	3.9	3	0.76	3	1.3	**600256**	**600264**

M ISO DIN 14 ISO DIN 13

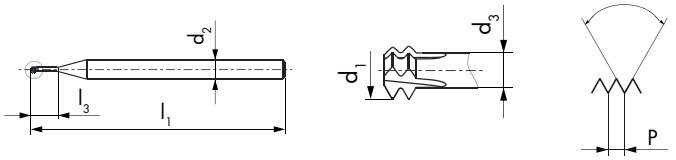
VHM CAR | < 3µm | DC | h5/h6

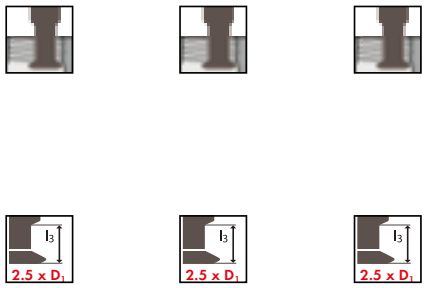
GW

GW3016

GW3016VS

GW3016VX





Ø D_1 M	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	2.3	3	0.29	3	0.66 [1]	167021	167035	187261
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 [1]	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 [2]	4.2	5	6.8	175229	175243	187275
10	1.5	7.95	67	28	8 [2]	5.85	5	8.5	175230	175244	187276
12	1.75	9.95	76	34	10 [2]	7.5	5	10.2	175231	175245	187277
14	2	10.95	95	44	12 [2]	8.15	5	12	196142	184748	187278
16	2	10.95	95	44	12 [2]	8.15	5	14	196143	186813	187279
18	2.5	13.95	105	55	14 [2]	10.45	6	15.5	196144	184503	187280
20	2.5	13.95	105	55	14 [2]	10.45	6	17.5	196145	186814	187281

[1] 4H5H → 4H6H = +0.02mm

[2] Tol. h6

M ISO DIN 14 ISO DIN 13

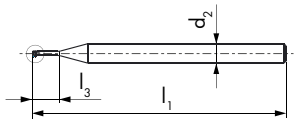
VHM CAR | < 3µm | DC | h5/h6

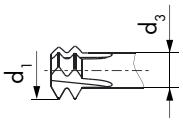
GW

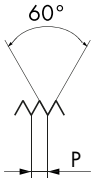
GW3017 — R10

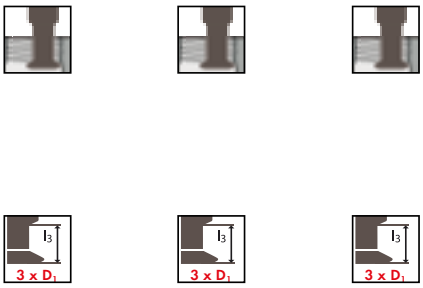
GW3017VS — R10 — VS

GW3017VX — R10 — VX









Ø D_1 M	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW3017 ID	GW3017VS ID	GW3017VX ID
0.8	0.2	0.57	39	2.7	3	0.29	3	0.66 [1]	196172	186266	187389
0.9	0.225	0.64	39	3	3	0.33	3	0.74 [1]	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 [2]	4.2	5	6.8	196209	186280	187403
10	1.5	7.95	83	33	8 [2]	5.85	5	8.5	196180	186281	187404
12	1.75	9.95	95	40	10 [2]	7.5	5	10.2	196182	186282	187405
14	2	10.95	120	52	12 [2]	8.15	5	12	196184	186283	187406
16	2	10.95	120	52	12 [2]	8.15	5	14	196186	186821	187407
18	2.5	13.95	135	65	14 [2]	10.45	6	15.5	196188	186284	187408
20	2.5	13.95	135	65	14 [2]	10.45	6	17.5	196196	186822	187409

[1] 4H5H → 4H6H = +0.02mm

[2] Tol. h6

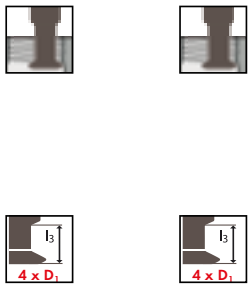
M ISO DIN 14 ISO DIN 13

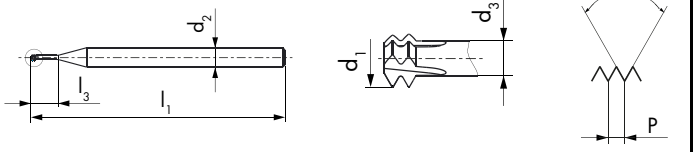
VHM CAR | < 3µm | DC | h5/h6

GW

GW3019

GW3019VS





Ø D_1 M	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW3019 ID	GW3019VS ID
0.8	0.2	0.57	39	3.5	3	0.29	3	0.66 [1]	167063	167077
0.9	0.225	0.64	39	3.9	3	0.33	3	0.74 [1]	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 [2]	4.2	5	6.8	175258	175274
10	1.5	7.95	83	43	8 [2]	5.85	5	8.5	175259	175275
12	1.75	9.95	95	52	10 [2]	7.5	5	10.2	175260	175276
14	2	10.95	120	68	12 [2]	8.15	5	12	196243	184751
16	2	10.95	120	68	12 [2]	8.15	5	14	196244	186829
18	2.5	13.95	135	85	14 [2]	10.45	6	15.5	196245	184754
20	2.5	13.95	135	85	14 [2]	10.45	6	17.5	196246	186830

[1] 4H5H → 4H6H = +0.02mm

[2] Tol. h6

MF ISO DIN 13

VHM CAR | < 3µm | DC | h5/h6

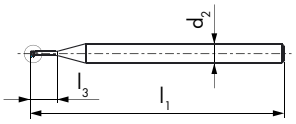
GW

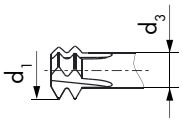
GW3016

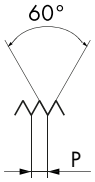

GW3016VS


GW3016VX


GW3016	GW3016VS	GW3016VX	
			









Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	4.55	5	7	● 196150	● 186212	● 187290
10	1	7.95	67	27	8 [1]	6.55	5	9	● 196151	● 186213	● 187291
10	1.25	7.95	67	28	8 [1]	6.2	5	8.8	● 196152	● 186214	● 187292
12	1.5	9.95	76	33	10 [1]	7.85	5	10.5	● 196153	● 186215	● 187293
14	1.5	10.95	95	43	12 [1]	8.85	5	12.5	● 196154	● 186216	● 187294
16	1.5	10.95	95	43	12 [1]	8.85	5	14.5	● 196155	● 186815	● 187295
18	1.5	13.95	105	53	14 [1]	11.85	6	16.5	● 196156	● 186217	● 187296
20	1.5	13.95	105	53	14 [1]	11.85	6	18.5	● 196157	● 186816	● 187297

[1] Tol. h6

MF ISO DIN 13

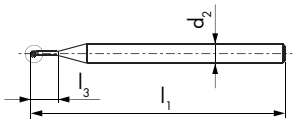
VHM CAR | < 3µm | DC | h5/h6

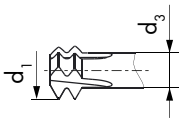
GW

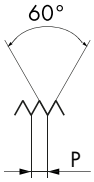
GW3017

GW3017VS

GW3017VX







GW3017	GW3017VS	GW3017VX
		
		
		

Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	4.55	5	7	196208	181233	187418
10	1	7.95	83	32	8 [1]	6.55	5	9	196178	186332	187419
10	1.25	7.95	83	33	8 [1]	6.2	5	8.8	196179	186333	187420
12	1.5	9.95	95	39	10 [1]	7.85	5	10.5	196181	186334	187421
14	1.5	10.95	120	51	12 [1]	8.85	5	12.5	196183	186335	187422
16	1.5	10.95	120	51	12 [1]	8.85	5	14.5	196185	186823	187423
18	1.5	13.95	135	63	14 [1]	11.85	6	16.5	196187	186336	187424
20	1.5	13.95	135	63	14 [1]	11.85	6	18.5	196195	186824	187425

[1] Tol. h6

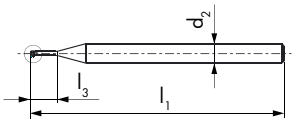
MF ISO DIN 13

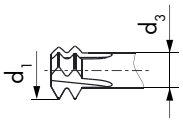
VHM CAR | < 3µm | DC | h5/h6

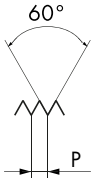
GW

GW3019


GW3019VS





GW3019	GW3019VS		
			
			
			

Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	4.55	5	7	● 196250	● 186595
10	1	7.95	83	42	8 [1]	6.55	5	9	● 196251	● 186596
10	1.25	7.95	83	43	8 [1]	6.2	5	8.8	● 196252	● 186597
12	1.5	9.95	95	51	10 [1]	7.85	5	10.5	● 196253	● 186598
14	1.5	10.95	120	67	12 [1]	8.85	5	12.5	● 196254	● 186599
16	1.5	10.95	120	67	12 [1]	8.85	5	14.5	● 196255	● 186831
18	1.5	13.95	135	83	14 [1]	11.85	6	16.5	● 196256	● 186600
20	1.5	13.95	135	83	14	11.85	6	18.5	● 196257	● 186832

[1] Tol. h6

UNC ASME B1.1

VHM CAR | < 3µm | DC | h5/h6

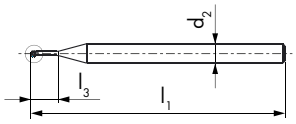
GW

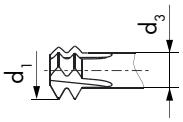
GW3016

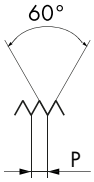

GW3016VS


GW3016VX


GW3016	GW3016VS	GW3016VX
		
		
		







Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	3.97	5	6.5	● 175232	● 175246	● 187307
3/8	16	7.1	67	27	8 [1]	4.87	5	8	● 175233	● 173546	● 187308
7/16	14	7.95	67	32	8 [1]	5.41	5	9.3	● 196161	● 186239	● 187309
1/2	13	9.95	76	36	10 [1]	7.21	5	10.8	● 175234	● 175247	● 187310

[1] Tol. h6

UNC ASME B1.1

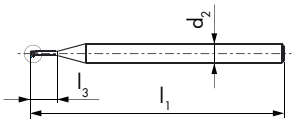
VHM CAR | < 3µm | DC | h5/h6

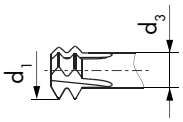
GW

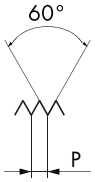
GW3017

GW3017VS

GW3017VX







GW3017	GW3017VS	GW3017VX
		
		
		

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	3.97	5	6.5	• 196223	• 186374	• 187435
3/8	16	7.1	83	32	8 [1]	4.87	5	8	• 196220	• 186375	• 187436
7/16	14	7.95	83	37	8 [1]	5.41	5	9.3	• 196226	• 186376	• 187437
1/2	13	9.95	95	42	10 [1]	7.21	5	10.8	• 196215	• 186377	• 187438

[1] Tol. h6

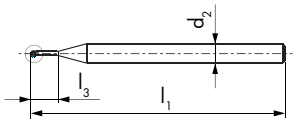
UNC ASME B1.1

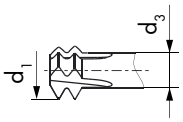
VHM CAR | < 3µm | DC | h5/h6

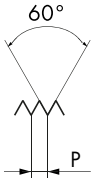
GW

GW3019


GW3019VS





GW3019	GW3019VS		
			
			
			

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	3.97	5	6.5	● 175261	● 175277
3/8	16	7.1	83	41	8 [1]	4.87	5	8	● 175262	● 175278
7/16	14	7.95	83	48	8 [1]	5.41	5	9.3	● 196261	● 186604
1/2	13	9.95	95	55	10 [1]	7.21	5	10.8	● 175263	● 175279

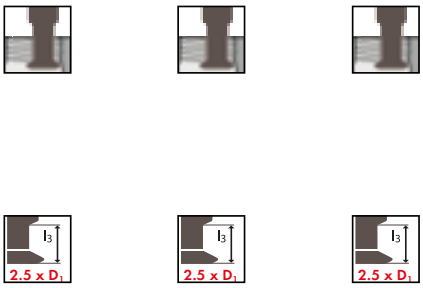
[1] Tol. h6

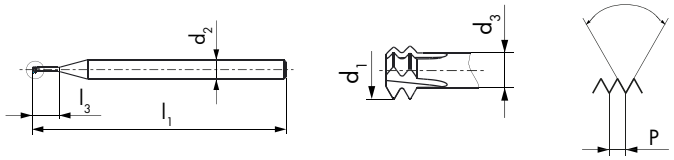
UNF ASME B1.1

VHM CAR | < 3µm | DC | h5/h6

GW

GW3016	R10		
GW3016VS	R10	VS	
GW3016VX	R10	VX	





Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW3016 ID	GW3016VS ID	GW3016VX 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 [1]	4.47	5	6.9	175239	175252	187321
3/8	24	7.1	67	26	8 [1]	5.62	5	8.5	175240	175253	187322
7/16	20	7.95	67	31	8 [1]	6.17	5	9.8	196166	186252	187323
1/2	20	9.95	76	35	10 [1]	8.17	5	11.4	196167	186253	187324

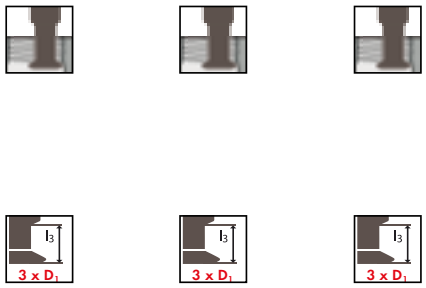
[1] Tol. h6

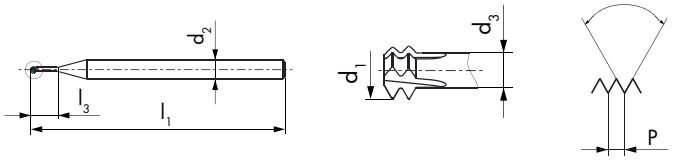
UNF ASME B1.1

VHM CAR | < 3µm | DC | h5/h6

GW

GW3017 | GW3017VS | GW3017VX





Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW3017 ID	GW3017VS ID	GW3017VX 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 [1]	4.47	5	6.9	• 196237	• 186413	• 187449
3/8	24	7.1	83	31	8 [1]	5.62	5	8.5	• 196235	• 186414	• 187450
7/16	20	7.95	83	36	8 [1]	6.17	5	9.8	• 196240	• 186415	• 187451
1/2	20	9.95	95	41	10 [1]	8.17	5	11.4	• 196229	• 186416	• 187452

[1] Tol. h6

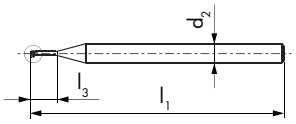
UNF ASME B1.1

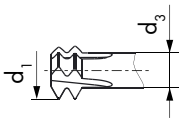
VHM CAR | < 3µm | DC | h5/h6

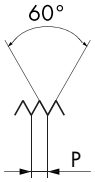
GW

GW3019


GW3019VS





GW3019	GW3019VS		
			


Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 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 [1]	4.47	5	6.9	● 175268	● 175283
3/8	24	7.1	83	40	8 [1]	5.62	5	8.5	● 175269	● 175284
7/16	20	7.95	83	47	8 [1]	6.17	5	9.8	● 196266	● 186608
1/2	20	9.95	95	54	10 [1]	8.17	5	11.4	● 196267	● 186609

[1] Tol. h6

S NIHS 06-10 SL SL 15-01

VHM CAR | < 3µm | DC | h5

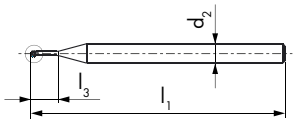
GW

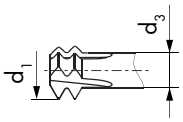
GW3016 | GW3016VS | GW3016VX

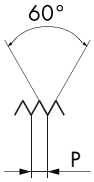
GW3016 — R10

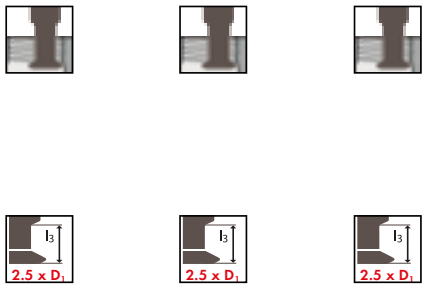
GW3016VS — R10 — VS

GW3016VX — R10 — VX



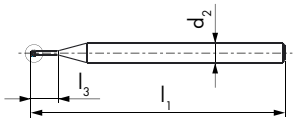


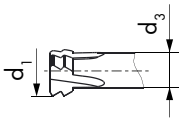


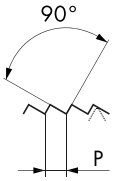


Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID	ID
0.8	0.2	0.57	39	2.3	3	0.29	3	0.66 [1]	● 196168	● 194287	● 194305
0.9	0.225	0.64	39	2.6	3	0.33	3	0.74 [1]	● 196169	● 182875	● 194306
1	0.25	0.71	39	2.9	3	0.36	3	0.82 [1]	● 180683	● 168667	● 194307
1.2	0.25	0.91	39	3.4	3	0.56	3	1.02 [1]	● 196170	● 194288	● 194308
1.4	0.3	1.06	39	3.9	3	0.64	3	1.18 [1]	● 196171	● 194289	● 194309

[1] 4H5H → 4H6H = +0.02mm







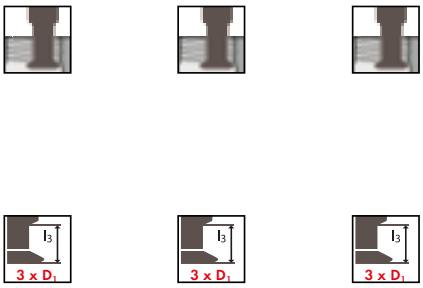
Ø D_1 SL	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.8	0.15	0.63	39	2.3	3	0.42	3	0.74	● 600028	● 600034
0.9	0.175	0.7	39	2.6	3	0.46	3	0.83	● 600029	● 600035
1	0.2	0.77	39	2.9	3	0.49	3	0.92	● 600030	● 600036
1.2	0.2	0.97	39	3.4	3	0.69	3	1.11	● 600031	● 600037
1.4	0.25	1.11	39	3.9	3	0.76	3	1.3	● 600032	● 600038

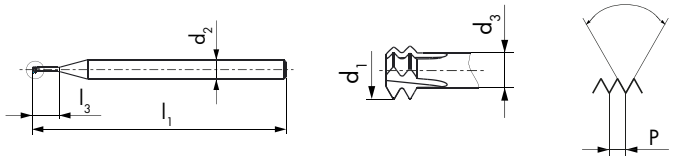
S NIHS 06-10

VHM CAR | < 3µm | DC | h5

GW

GW3017	R10		
GW3017VS	R10	VS	
GW3017VX	R10	VX	





Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW3017 ID	GW3017VS ID	GW3017VX ID
0.8	**0.2**	0.57	39	2.7	3	0.29	3	0.66 [1]	● **196210**	● **194291**	● **194312**
0.9	**0.225**	0.64	39	3	3	0.33	3	0.74 [1]	● **196211**	● **194292**	● **194313**
1	**0.25**	0.71	39	3.4	3	0.36	3	0.82 [1]	● **196214**	● **194293**	● **194314**
1.2	**0.25**	0.91	39	4	3	0.56	3	1.02 [1]	● **196212**	● **194294**	● **194315**
1.4	**0.3**	1.06	39	4.6	3	0.64	3	1.18 [1]	● **196213**	● **194295**	● **194316**

[1] **4H5H → 4H6H =** +0.02mm

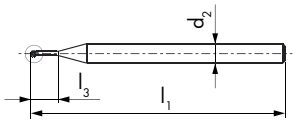
S NIHS 06-10

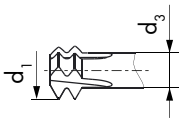
VHM CAR | < 3µm | DC | h5

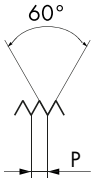
GW

GW3019 | R10

GW3019VS | R10 | VS







Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			GW3019 ID	GW3019VS ID
0.8	**0.2**	0.57	39	3.5	3	0.29	3	0.66 [1]	● **196270**	● **194298**
0.9	**0.225**	0.64	39	3.9	3	0.33	3	0.74 [1]	● **196271**	● **194299**
1	**0.25**	0.71	39	4.4	3	0.36	3	0.82 [1]	● **196274**	● **194300**
1.2	**0.25**	0.91	39	5.2	3	0.56	3	1.02 [1]	● **196272**	● **194301**
1.4	**0.3**	1.06	39	6	3	0.64	3	1.18 [1]	● **196273**	● **194302**

[1] **4H5H → 4H6H =** +0.02mm

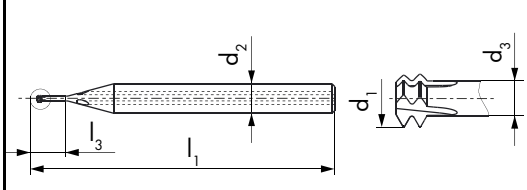
M ISO DIN 14
ISO DIN 13

VHM CAR | < 3µm | DC | h6

GWi

GWi3066VS R10 VS

GWi3066VX R10 VX



GWi3066VS	GWi3066VX		
			
			
 l3 2.5 x D1	 l3 2.5 x D1		

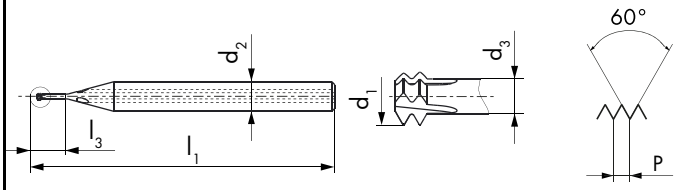
Ø D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h6 mm	d3 mm			ID	ID
0.8	0.2	0.57	40	2.3	3	0.29	3	0.66	● 186029	● 187325
0.9	0.225	0.64	40	2.6	3	0.33	3	0.74	● 186030	● 187326
1	0.25	0.71	40	2.9	3	0.36	3	0.75	● 186031	● 187327
1.2	0.25	0.91	40	3.4	3	0.56	3	0.95	● 186032	● 187328
1.4	0.3	1.06	40	3.9	4	0.64	3	1.1	● 186033	● 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

VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS  R10 VS

GWi3067VX  R10 VX



GWi3067VS	GWi3067VX		
			
			
 3 x D1	 3 x D1		

Ø D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h6 mm	d3 mm			ID	ID
1.4	0.3	1.06	40	4.6	4	0.64	3	1.1	186443	187453
1.6	0.35	1.2	40	5.3	4	0.71	3	1.25	186444	187454
1.8	0.35	1.4	40	5.9	4	0.91	3	1.45	186445	187455
2	0.4	1.54	40	6.6	4	0.98	3	1.6	186446	187456
2.3	0.4	1.84	40	7.5	4	1.28	3	1.9	194327	194337
2.5	0.45	1.98	40	8.1	4	1.35	3	2.05	186447	187457
2.6	0.45	2.08	40	8.4	4	1.45	3	2.15	194328	194338
3	0.5	2.43	51	9.9	5	1.73	4	2.5	186448	187458
3.5	0.6	2.81	51	11.6	6	1.97	4	2.9	186449	187459
4	0.7	3.2	51	13.3	6	2.22	4	3.3	186450	187460
5	0.8	4.08	51	16.5	8	2.96	4	4.2	186451	187461
6	1	4.85	51	19.8	8	3.45	4	5	186452	187462
8	1.25	5.95	75	27	6	4.2	5	6.8	186453	187463
10	1.5	7.95	83	33	8	5.85	5	8.5	186454	187464
12	1.75	9.95	95	40	10	7.5	5	10.2	186455	187465
14	2	10.95	120	52	12	8.15	5	12	186456	187466
16	2	10.95	120	52	12	8.15	5	14	186825	187467
18	2.5	13.95	135	65	14	10.45	6	15.5	186457	187468
20	2.5	13.95	135	65	14	10.45	6	17.5	186826	187469

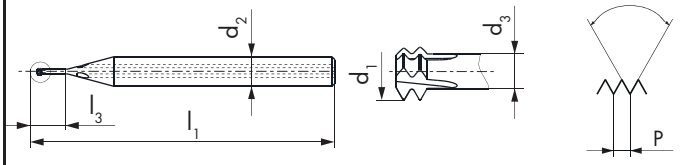
MJ ISO 5855

VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX



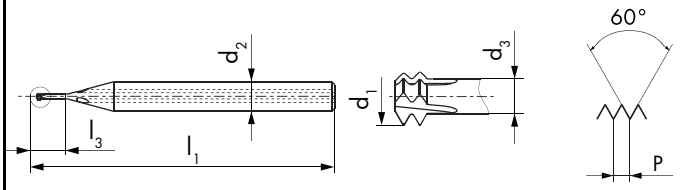
GWi3067VS	GWi3067VX		
			

Ø 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

VHM CAR | < 3µm | DC | h6

GWi

GWi3069VS | R10 | VS



Ø D_1 M	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 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

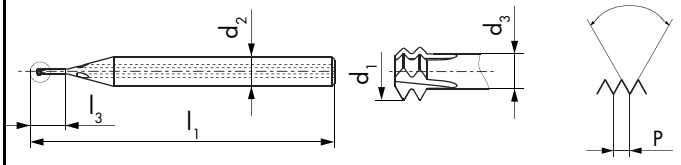
MF ISO DIN 13

VHM CAR | < 3µm | DC | h6

GWi

GWi3066VS


GWi3066VX

GWi3066VS	GWi3066VX		
			



Ø 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

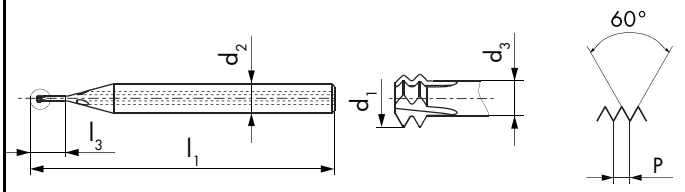
MF ISO DIN 13

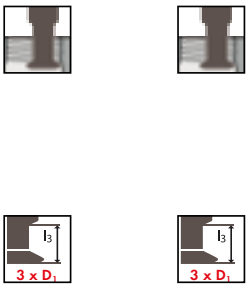
VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX





Ø D1 MF	P mm	d1 mm	l1 mm	l3 mm	d2 h6 mm	d3 mm			GWi3067VS ID	GWi3067VX 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

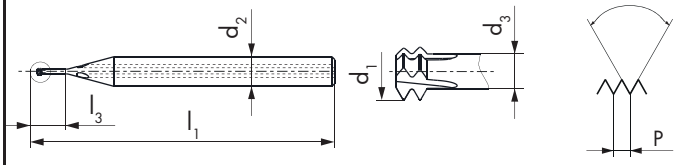
MJF ISO 5855

VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX



GWi3067VS	GWi3067VX		
			

Ø D1 MJF	P mm	d1 mm	l1 mm	l3 mm	d2 h6 mm	d3 mm			ID	ID
6	0.75	4.76	51	19.4	8	3.71	4	5.35	188827	188850
8	1	5.95	75	26	6	4.55	5	7.1	188828	188851
10	1.25	7.95	83	33	8	6.2	5	8.9	188829	188852
12	1.5	9.95	95	39	10	7.85	5	10.6	188830	188853

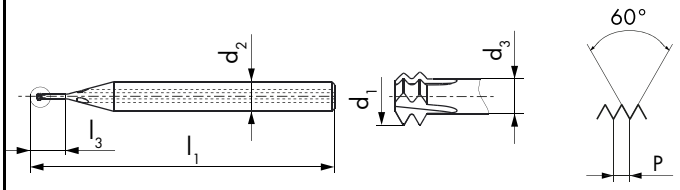
MF ISO DIN 13

VHM CAR | < 3µm | DC | h6

GWi

GWi3069VS


GWi3069VS



Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 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

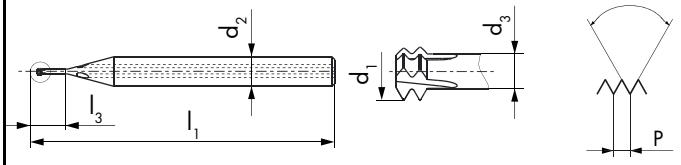
UNC ASME B1.1

VHM CAR | < 3µm | DC | h6

GWi

GWi3066VS

GWi3066VX



GWi3066VS	GWi3066VX		
			
			
			

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID	ID
2	56	1.66	40	6.1	4	1.02	3	1.75	● 186128	● 187362
3	48	1.91	40	7	4	1.17	3	2	● 186129	● 187363
4	40	2.11	51	8	5	1.22	3	2.25	● 186130	● 187364
5	40	2.44	51	9.1	5	1.55	4	2.55	● 186131	● 187365
6	32	2.59	51	10.2	6	1.48	4	2.75	● 186132	● 187366
8	32	3.25	51	11.9	6	2.14	4	3.4	● 186133	● 187367
10	24	3.6	51	14	8	2.12	4	3.8	● 186134	● 187368
12	24	4.27	51	15.7	8	2.79	4	4.4	● 186135	● 187369
1/4	20	4.89	51	18.2	8	3.11	4	5.1	● 186136	● 187370
5/16	18	5.95	75	23	6	3.97	5	6.5	● 186137	● 187371
3/8	16	7.1	83	27	8	4.87	5	8	● 186138	● 187372
7/16	14	7.95	83	32	8	5.41	5	9.3	● 186139	● 187373
1/2	13	9.95	95	36	10	7.21	5	10.8	● 186140	● 187374

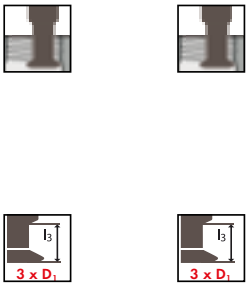
UNC ASME B1.1

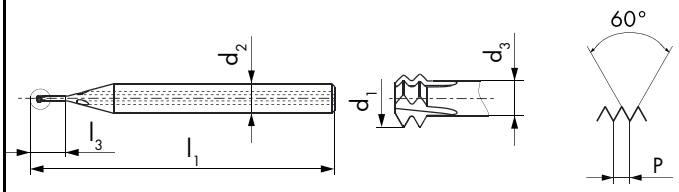
VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX





Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			GWi3067VS ID	GWi3067VX ID
4	40	2.11	51	9.4	5	1.22	3	2.25	186526	187486
5	40	2.44	51	10.7	5	1.55	4	2.55	186527	187487
6	32	2.59	51	12	6	1.48	4	2.75	186528	187488
8	32	3.25	51	14	6	2.14	4	3.4	186529	187489
10	24	3.6	51	16.4	8	2.12	4	3.8	186530	187490
12	24	4.27	51	18.4	8	2.79	4	4.4	186531	187491
1/4	20	4.89	51	21.4	8	3.11	4	5.1	186532	187492
5/16	18	5.95	75	27	6	3.97	5	6.5	186533	187493
3/8	16	7.1	83	32	8	4.87	5	8	186534	187494
7/16	14	7.95	83	37	8	5.41	5	9.3	186535	187495
1/2	13	9.95	95	42	10	7.21	5	10.8	186536	187496

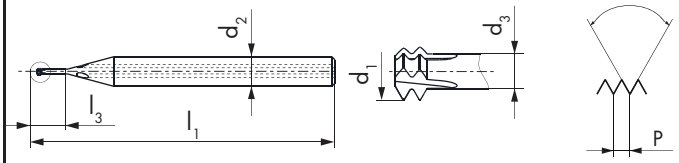
UNJC ISO 3161

VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX



GWi3067VS	GWi3067VX		
			
			
			

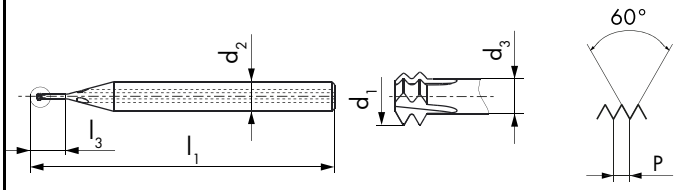
Ø" D_1 UNJC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID	ID
6	32	2.59	51	12	6	1.48	4	2.8	● 188831	● 188854
10	24	3.6	51	16.4	8	2.12	4	3.9	● 188832	● 188855
1/4	20	4.89	51	21.4	8	3.11	4	5.2	● 188833	● 188856
5/16	18	5.95	75	27	6	3.97	5	6.7	● 188834	● 188857
3/8	16	7.1	83	32	8	4.87	5	8.1	● 188835	● 188858
1/2	13	9.95	95	42	10	7.21	5	10.9	● 188836	● 188859

UNC ASME B1.1

VHM CAR | < 3µm | DC | h6

GWi

GWi3069VS

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 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

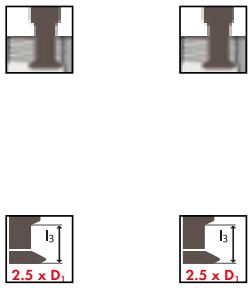
UNF ASME B1.1

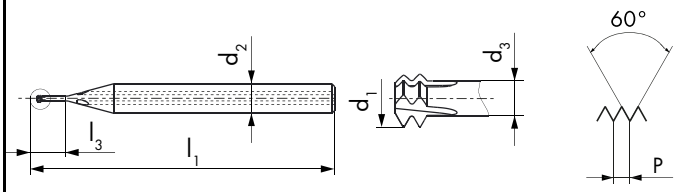
VHM CAR | < 3µm | DC | h6

GWi

GWi3066VS

GWi3066VX





Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			GWi3066VS ID	GWi3066VX 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

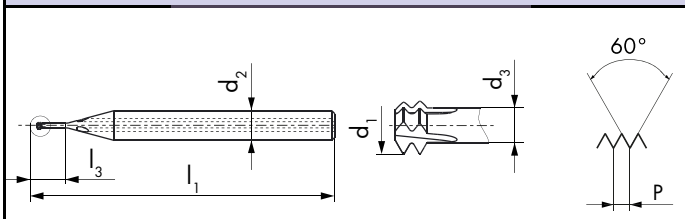
UNF ASME B1.1

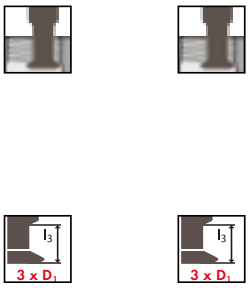
VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX





Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			GWi3067VS ID	GWi3067VX ID
4	48	2.23	51	9.3	5	1.49	3	2.35	186559	187497
5	44	2.51	51	10.6	5	1.7	4	2.6	186560	187498
6	40	2.77	51	11.7	6	1.88	4	2.9	186561	187499
8	36	3.35	51	13.8	6	2.36	4	3.5	186562	187500
10	32	3.91	51	16	8	2.8	4	4.05	186563	187501
12	28	4.44	51	18.1	8	3.17	4	4.6	186564	187502
1/4	28	4.95	51	20.7	8	3.68	4	5.5	186565	187503
5/16	24	5.95	75	26	6	4.47	5	6.9	186566	187504
3/8	24	7.1	83	31	8	5.62	5	8.5	186567	187505
7/16	20	7.95	83	36	8	6.17	5	9.8	186568	187506
1/2	20	9.95	95	41	10	8.17	5	11.4	186569	187507

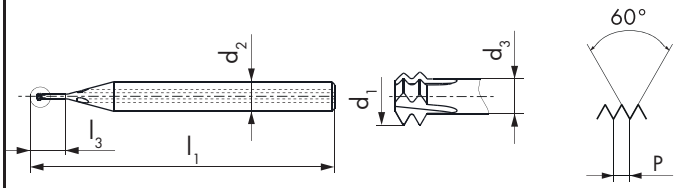
UNJF ISO 3161

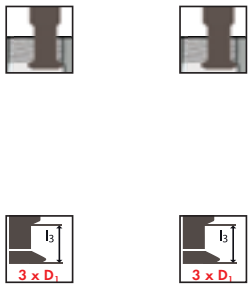
VHM CAR | < 3µm | DC | h6

GWi

GWi3067VS

GWi3067VX



GWi3067VS	GWi3067VX		
			
			

Ø" D_1 UNJF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID	ID
8	36	2.99	51	13.8	6	2	4	3.55	● 188837	● 188860
10	32	3.51	51	16	8	2.4	4	4.1	● 188838	● 188861
1/4	28	4.84	51	20.7	8	3.57	4	5.55	● 188839	● 188862
5/16	24	5.95	75	26	6	4.47	5	7	● 188840	● 188863
3/8	24	7.1	83	31	8	5.62	5	8.6	● 188841	● 188864
1/2	20	9.95	95	41	10	8.17	5	11.55	● 188842	● 188865

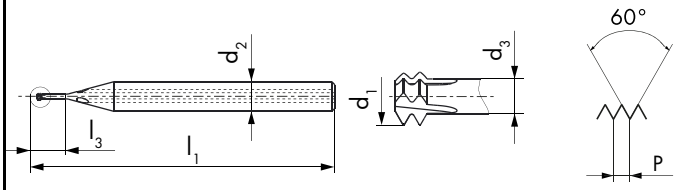
UNF ASME B1.1

VHM CAR | < 3µm | DC | h6

GWi

GWi3069VS


GWi3069VS



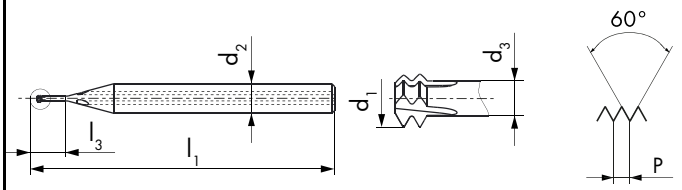
Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID
6	40	2.77	51	15.2	6	1.88	4	2.9	186639
8	36	3.35	51	18	6	2.36	4	3.5	186640
10	32	3.91	51	20.8	8	2.8	4	4.05	186641
12	28	4.44	51	23.6	8	3.17	4	4.6	186642
1/4	28	4.95	51	27.1	8	3.68	4	5.5	186643
5/16	24	5.95	75	34	6	4.47	5	6.9	186644
3/8	24	7.1	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

S NIHS 06-10

VHM CAR | < 3µm | DC | h6

GWi

GWi3066VS	R10	VS	
GWi3066VX	R10	VX	
GWi3067VS	R10	VS	
GWi3067VX	R10	VX	



GWi3066VS	GWi3066VX	GWi3067VS	GWi3067VX
			
			
			

Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			GWi3066VS ID	GWi3066VX ID	GWi3067VS ID	GWi3067VX ID
0.8	**0.2**	0.57	40	2.3	3	0.29	3	0.66[1]	● **194319**	● **194329**		
0.9	**0.225**	0.64	40	2.6	3	0.33	3	0.74[1]	● **194320**	● **194330**		
1	**0.25**	0.71	40	2.9	3	0.36	3	0.82[1]	● **194321**	● **194331**		
1.2	**0.25**	0.91	40	3.4	3	0.56	3	1.02[1]	● **194322**	● **194332**		
1.4	**0.3**	1.06	40	3.9	4	0.64	3	1.18[1]	● **194323**	● **194333**		

[1] 4H5H → 4H6H = +0.02mm

Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			GWi3067VS ID	GWi3067VX ID
1.4	**0.3**	1.06	40	4.6	4	0.64	3	1.18[1]	● **194326**	● **194336**

[1] 4H5H → 4H6H = +0.02mm

M ISO DIN 14 ISO DIN 13

VHM CAR | < 3µm | DC | h6

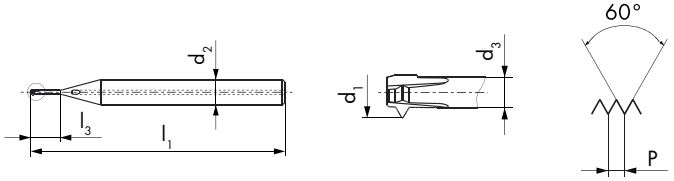
GWi

GWi5066VS	GWi5067VS		

GWi5066VS

GWi5067VS

LH-rot. LH-rot.



Ø D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h6 mm	d3 mm			ID
0.8	0.2	0.55	40	2.3	3	0.27	1	0.58 [1]	189165
0.9	0.225	0.62	40	2.6	3	0.31	1	0.65 [1]	189166
1	0.25	0.66	40	2.9	3	0.31	1	0.7 [1]	189167
1.2	0.25	0.86	40	3.4	3	0.51	1	0.9 [1]	189168
1.4	0.3	1.03	40	4	4	0.61	1	1.05 [1]	189169
1.6	0.35	1.16	40	4.6	4	0.67	1	1.19 [1]	189170
1.8	0.35	1.36	40	5.1	4	0.87	1	1.39 [1]	189171
2	0.4	1.5	40	5.6	4	0.94	1	1.54 [1]	189172
2.5	0.45	1.94	40	7	4	1.31	1	1.98 [1]	189173
3	0.5	2.38	51	8.3	5	1.68	2	2.45 [2]	193422
3.5	0.6	2.75	51	9.7	6	1.91	2	2.85 [2]	193423
4	0.7	3.13	51	11.1	6	2.15	2	3.25 [2]	193424
5	0.8	4	51	13.7	8	2.88	2	4.1 [2]	193425
6	1	4.75	51	16.5	8	3.35	2	4.9 [2]	193426

Ø D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h6 mm	d3 mm			ID
1.4	0.3	1.03	40	4.7	4	0.61	1	1.05 [1]	189174
1.6	0.35	1.16	40	5.4	4	0.67	1	1.19 [1]	189175
1.8	0.35	1.36	40	6	4	0.87	1	1.39 [1]	189176
2	0.4	1.5	40	6.6	4	0.94	1	1.54 [1]	189177
2.5	0.45	1.94	40	8.2	4	1.31	1	1.98 [1]	189178
3	0.5	2.38	51	9.8	5	1.68	2	2.45 [2]	193432
3.5	0.6	2.75	51	11.4	6	1.91	2	2.85 [2]	193433
4	0.7	3.13	51	13.1	6	2.15	2	3.25 [2]	193434
5	0.8	4	51	16.2	8	2.88	2	4.1 [2]	193435
6	1	4.75	51	19.5	8	3.35	2	4.9 [2]	193436

[1] Tol. = +0/0.02mm / [2] Tol. = +0/0.03mm

UNC ASME B1.1

VHM CAR | < 3µm | DC | h6

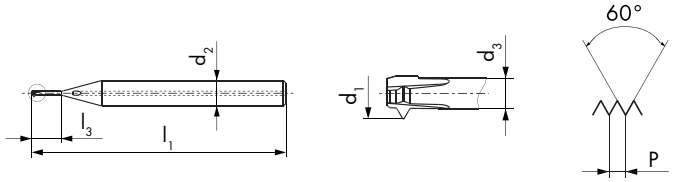
GWi

	GWi5066VS	GWi5067VS		
				

GWi5066VS 

GWi5067VS 





Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID
4	40	2.05	51	8.1	5	1.16	2	2.15 [1]	● 193427
6	32	2.51	51	10	6	1.4	2	2.65 [1]	● 193428
1/4	20	4.76	51	17.8	8	2.98	2	5 [1]	● 193429

[1] Tol. = +0/0.03mm

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID
4	40	2.05	51	9.5	5	1.16	2	2.15 [1]	● 193437
6	32	2.51	51	11.8	6	1.4	2	2.65 [1]	● 193438
1/4	20	4.76	51	21	8	2.98	2	5 [1]	● 193439

[1] Tol. = +0/0.03mm

UNF ASME B1.1

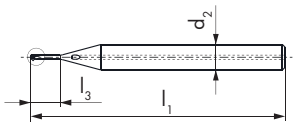
VHM CAR | < 3µm | DC | h6

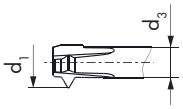
GWi

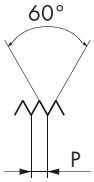
	GWi5066VS	GWi5067VS		
				
	LH-rot.	LH-rot.		
				
	2.5 x D_1	3 x D_1		

GWi5066VS — VS, RO

GWi5067VS — VS, RO







Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID
10	32	3.83	51	13.3	8	2.72	2	3.95 [1]	● 193430
1/4	28	5.22	51	17.3	8	3.95	2	5.4 [1]	● 193431

[1] Tol. = +0/0.03mm

Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID
10	32	3.83	51	15.7	8	2.72	2	3.95 [1]	● 193440
1/4	28	5.22	51	20.5	8	3.95	2	5.4 [1]	● 193441

[1] Tol. = +0/0.03mm

S NIHS 06-10

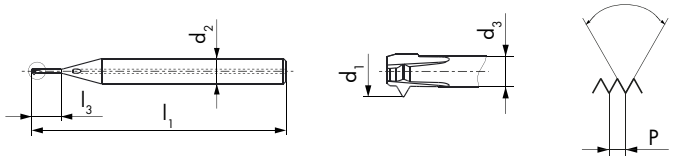
VHM CAR | < 3µm | DC | h6

GWi

GWi5066VS

GWi5066VS

LH-rot.

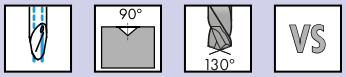


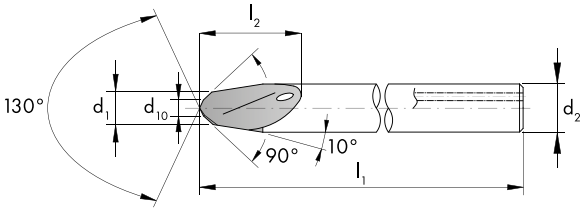
Ø D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h6 mm	d_3 mm			ID
0.8	**0.2**	0.55	40	2.3	3	0.27	1	0.59 [1]	● **189204**
0.9	**0.225**	0.62	40	2.6	3	0.31	1	0.67 [1]	● **189205**
1	**0.25**	0.66	40	2.9	3	0.31	1	0.74 [1]	● **189206**
1.2	**0.25**	0.86	40	3.4	3	0.51	1	0.94 [1]	● **189207**
1.4	**0.3**	1.03	40	4	4	0.61	1	1.09 [1]	● **189208**

[1] **Tol. =** +0/0.01mm

C

C315VS





C315VS			

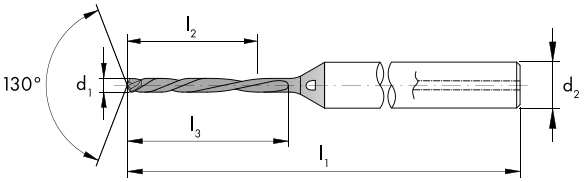
Ø d_1	l_1 mm	l_2 mm	d_2 h6 mm	d_{10} mm		ID
1.4	40	6	3	0.5	2	● 182872
2	40	6.2	3	1	2	● 182873
3	40	6.3	3	1.5	2	● 182874
4	50	8	4	2	2	● 190331
6	60	12	6	3	2	● 190332
8	70	16	8	4	2	● 190333

FZ

FZ315VS	FZ315VS		

FZ315VS

FZ315VS

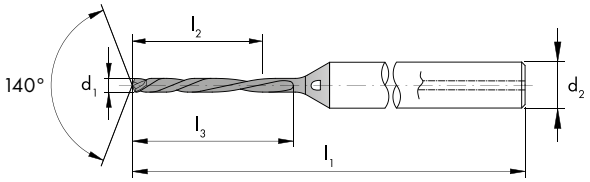


Ø d_1	D_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm		ID
0.58	M0.8	42	4.6	5.7	3	2	● 182863
0.59	S0.8	42	4.7	5.8	3	2	● 188023
0.65	M0.9	45	5.2	6.4	3	2	● 182864
0.67	S0.9	45	5.4	6.6	3	2	● 188024
0.7	M1	45	5.6	6.9	3	2	● 182865
0.74	S1	45	5.9	7.3	3	2	● 188025
0.9	M1.2	45	7.2	8.8	3	2	● 182866
0.94	S1.2	48	7.5	9.2	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

Ø 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



Ø 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

M ISO DIN 13

VHM CAR | < 3µm | DC | h5/h6

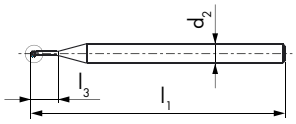
GWH

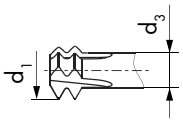
GWH3015VH | GWH3017VH

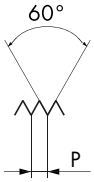
GWH3015VH — RO — VH

GWH3017VH — RO — VH


LH-rot. | LH-rot.





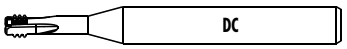
Ø D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h5 mm	d3 mm			ID
3	0.5	2.4	51	6.8	5	1.7	4	2.5	196558
3.5	0.6	2.8	51	7.9	5	1.96	4	2.9	196559
4	0.7	3.2	51	9.1	5	2.22	4	3.3	196560
5	0.8	4	51	11.2	5	2.88	4	4.2	196561
6	1	4.8	51	13.5	5	3.4	4	5	196562
8	1.25	6.4	67	18	8[1]	4.65	5	6.8	196563
10	1.5	7.95	67	23	8[1]	5.85	5	8.5	196564
12	1.75	9.6	76	27	10[1]	7.15	5	10.25	196565

[1] Tol. h6

Ø D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h5 mm	d3 mm			ID
3	0.5	2.4	51	9.8	5	1.7	4	2.5	196582
3.5	0.6	2.8	51	11.4	5	1.96	4	2.9	196583
4	0.7	3.2	51	13.1	5	2.22	4	3.3	196584
5	0.8	4	51	16.2	5	2.88	4	4.2	196585
6	1	4.8	51	19.5	5	3.4	4	5	196586
8	1.25	6.4	83	26	8[1]	4.65	5	6.8	196587
10	1.5	7.95	83	33	8[1]	5.85	5	8.5	196588
12	1.75	9.6	95	39	10[1]	7.15	5	10.25	196589

[1] Tol. h6

VHM CAR



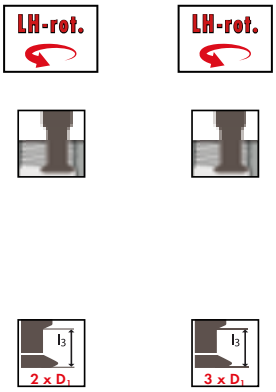
h6

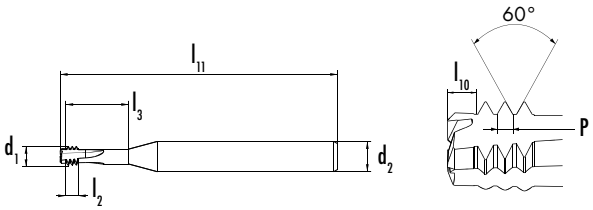
ZBGF

ZBGF6065VS	ZBGF6067VS		

ZBGF6065VS

ZBGF6067VS



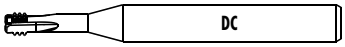


Ø D1 M	P mm	d1 mm	l11 mm	l2 mm	l3 mm	d2 h6 mm	l10 mm		ID
3	0.5	2.43	55	1.5	7.5	4	0.75	3	● 181605
4	0.7	3.05	55	2.1	10.1	6	1.05	3	● 181606
5	0.8	4.08	55	2.4	12.4	6	1.2	3	● 181607
6	1	4.5	64	3	15	6	1.5	4	● 181608
8	1.25	5.95	64	3.75	19.8	6	1.88	4	● 181609
10	1.5	7.95	74	4.5	24.5	8	2.25	4	● 181610
12	1.75	9.95	80	5.25	29.3	10	2.63	4	● 181611
16	2	11.95	92	6	38	12	3	4	● 181612

Ø D1 M	P mm	d1 mm	l11 mm	l2 mm	l3 mm	d2 h6 mm	l10 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

UNC ASME B1.1

VHM CAR



h6

ZBGF

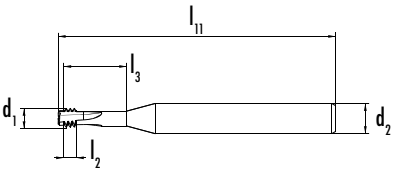
ZBGF6065VS

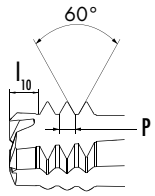


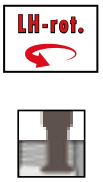
ZBGF6067VS



ZBGF6065VS	ZBGF6067VS		







Ø" D_1 UNC	P TPI	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10} mm		ID
4	40	2.11	55	1.9	7.6	4	0.95	3	● 183509
6	32	2.59	55	2.4	9.4	4	1.19	3	● 183510
8	32	3.1	55	2.4	10.8	6	1.19	3	● 183511
10	24	3.6	55	3.2	12.9	6	1.59	3	● 183512
1/4	20	4.8	64	3.8	16.6	6	1.91	4	● 183513
5/16	18	5.95	64	4.2	20.2	6	2.12	4	● 183514
3/8	16	7.1	74	4.8	23.9	8	2.38	4	● 183515
1/2	13	9.95	80	5.9	31.3	10	2.93	4	● 183516
5/8	11	11.95	92	6.9	38.7	12	3.46	4	● 183517

Ø" D_1 UNC	P TPI	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10} mm		ID
8	32	3.1	55	2.4	14.9	6	1.19	3	● 183520
1/4	20	4.8	72	3.8	22.9	6	1.91	4	● 183522
5/16	18	5.95	72	4.2	28.1	6	2.12	4	● 183523
3/8	16	7.1	90	4.8	33.4	8	2.38	4	● 183524
1/2	13	9.95	102	5.9	44	10	2.93	4	● 183525
5/8	11	11.95	115	6.9	54.6	12	3.46	4	● 183526

UNF ASME B1.1

VHM CAR | DC | h6

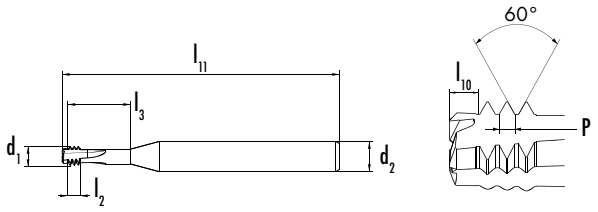
ZBGF

ZBGF6065VS	ZBGF6067VS		

ZBGF6065VS — > 20 bar — L3 — VS

ZBGF6067VS — > 20 bar — L3 — VS

LH-rot. LH-rot.



Ø" D1 UNF	P TPI	d1 mm	l11 mm	l2 mm	l3 mm	d2 h6 mm	l10 mm		ID
4	48	2.23	55	1.6	7.3	4	0.79	3	● 183527
8	36	3.1	55	2.1	10.5	6	1.06	3	● 183528
10	32	3.91	55	2.4	12.1	6	1.19	3	● 183529
1/4	28	4.8	64	2.7	15.5	6	1.36	4	● 183530
5/16	24	5.95	64	3.2	19.1	6	1.59	4	● 183531
3/8	24	7.1	74	3.2	22.3	8	1.59	4	● 183532
7/16	20	7.95	74	3.8	26.1	8	1.91	4	● 183533
1/2	20	9.95	80	3.8	29.3	10	1.91	4	● 183534
5/8	18	11.95	92	4.2	36	12	2.12	4	● 183535

Ø" D1 UNF	P TPI	d1 mm	l11 mm	l2 mm	l3 mm	d2 h6 mm	l10 mm		ID
4	48	2.23	55	1.6	10.2	4	0.79	3	● 183536
8	36	3.1	55	2.1	14.7	6	1.06	3	● 183537
10	32	3.91	55	2.4	16.9	6	1.19	3	● 183538
1/4	28	4.8	72	2.7	21.8	6	1.36	4	● 183539
5/16	24	5.95	72	3.2	27	6	1.59	4	● 183540
3/8	24	7.1	90	3.2	31.8	8	1.59	4	● 183541
7/16	20	7.95	90	3.8	37.2	8	1.91	4	● 183542
1/2	20	9.95	102	3.8	42	10	1.91	4	● 183543
5/8	18	11.95	115	4.2	51.9	12	2.12	4	● 183544

QTAP

DER KOMPLETTESTE ALLROUNDER

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SPEZIALAUSFÜHRUNGEN

Wir bieten Ihnen ein breites Standardprogramm an, basierend auf den heutigen technischen Standards und den allgemeinen Bedürfnissen unserer Kunden. Sollten Sie in unserem Standardprogramm nicht das für das von Ihnen zu bearbeitende Werkstück geeignete Gewindewerkzeug finden, unterbreiten wir Ihnen gerne ein Angebot für das für Ihren Anwendungsfall passende Werkzeug.

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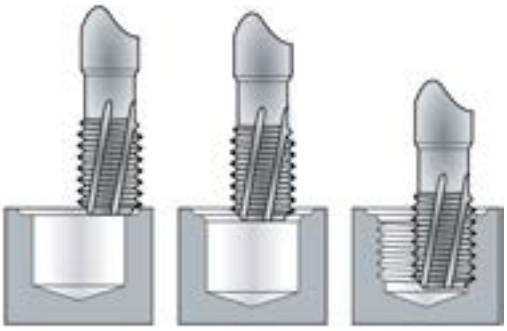
We offer you a wide range of standard products, based on today's technical standards and the general needs of our customers. If you should not find in our standard programme the right tool for your workpiece to be machined, we will gladly make you an offer for the custom-made threading tool in special execution, adapted to your application.

GFMS

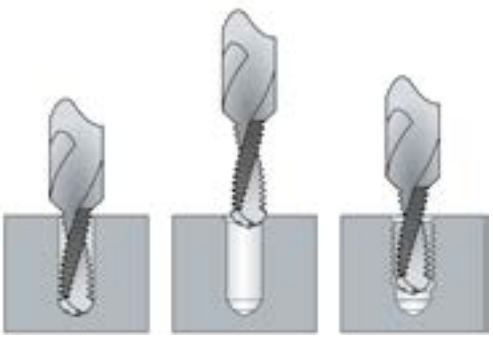
Stirnschneider
Spot facing cutter

GFMS



Stirnschneider + Zirkularschneider mit 45° Fase
Spot facing cutter + circular cutter with 45° bevel

BGFS

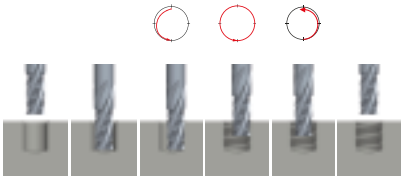


Zirkularschneider mit 45°-Senkfase
With 45° circular chamfer for countersinking

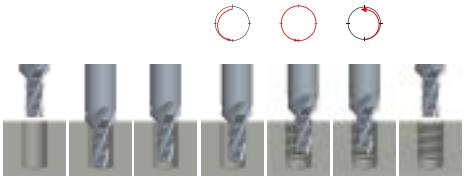
ANWENDUNGSTABELLE GF - GFH - GFS - GFM
APPLICATION CHART GF - GFH - GFS - GFM

Programmierzyklus für Gewindefräser GF - GFH - GFS - GFM
Programming cycle for thread milling cutters GF - GFH - GFS - GFM

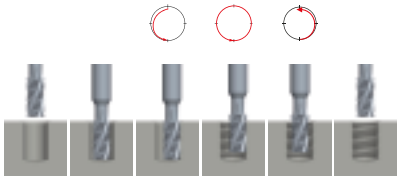
GF - GFH



GFS



GFM



Anwendungstabelle für Gewindefräser — Application chart for thread milling cutters

	Werkstoff-Gruppen Material groups		*Werkstoffbezeichnung*	Material designation	*Härte* Hardness (HB)	*Festigkeit* Tensile strength Rm (N/mm²)	*Kühlung* Lubricant: Standard	Standard	Beschichtet Coated
10	*Stahl* Steels	11	*Automatenstahl*	Free-cutting steels	< 200	< 700		O D	
		12	*Baustahl, Einsatzstahl*	Structural, cementation steels	< 200	< 700		O D	
		13	*Kohlenstoffstahl*	Carbon steels	< 300	< 1000		O D	
		14	*Stahl legiert < 850 N/mm²*	Alloy steels < 850 N/mm²	< 250	< 850		O D	
		15	*Stahl legiert / vergütet > 850 - < 1150 N/mm²*	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		O D	
		16	*Hochfester Stahl ≤ 44 HRC*	High tensile alloy steels ≤ 44 HRC	> 250	> 850		O D	
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		O D	
		18	*Stahl gehärtet > 54 - ≤ 63 HRC*	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980			A
20	*Rostfreier Stahl* Stainless steels	21	*Rostfreier Stahl, geschwefelt*	Free machining stainless steels	< 250	< 850		O D	
		22	*Austenitisch*	Austenitic stainless steels	< 250	< 850		O D	
		23	*Ferritisch, martensitisch < 850 N/mm²*	Ferritic and martensitic < 850 N/mm²	< 250	< 850		O D	
		24	*Ferritisch, martensitisch > 850 - < 1150 N/mm²*	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		O D	
30	*Guss* Cast iron	31	*Grauguss*	Cast iron	< 250	< 850		O D	A
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850		O D	
40	*Titan* Titanium	41	*Reintitan*	Pure titanium	< 250	< 850	O E	O D	
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	O E	O D	
50	*Nickel* Nickel	51	*Nickellegierung 1 ≤ 850 N/mm²*	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		O D	
		52	*Nickellegierung 2 > 850 - ≤ 1150 N/mm²*	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		O D	
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		O D	
60	*Kupfer* Copper	61	*Reinkupfer (Elektrolytkupfer)*	Pure copper (electrolytic copper)	< 120	< 400		O D	
		62	*Messing, Bronze, Rotguss (kurzspanend)*	Short chip brass, phosphor bronze, gun metal	< 200	< 700	O E A	O D	A
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	O E	O D	
70	*Aluminium Magnesium* Aluminium Magnesium	71	*Al unlegiert*	Al unalloyed	< 100	< 350	O E	O D	
		72	*Al legiert Si < 1.5 %*	Al alloyed Si < 1.5 %	< 150	< 500	O E	O D	
		73	*Al legiert Si > 1.5 % - < 10 %*	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400		O D	
		74	*Al legiert Si > 10 %, Mg-Legierungen*	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400		O D	
80	*Kunststoff* Plastic compounds	81	*Thermoplaste*	Thermoplastics	-	-	E	D	
		82	*Duroplaste*	Duroplastics	-	-	E	D	
		83	*Faserverstärkte Kunststoffe*	Glass fibre reinforced plastics	-	-		D	A
90	*Edelmetalle* Precious metals	91	*Gelbgold*	Yellow gold	-	-	O E	O D	
		92	*Rotgold*	Red gold	-	-	O E	O D	
		93	*Weissgold*	White gold	-	-		O D	
		94	*Silber*	Silver	-	-		O D	

Optimal mit Schneidöl Optimal with cutting oil

Geeignet mit Schneidöl Suitable with cutting oil

Optimal mit Emulsion Optimal with emulsion

Geeignet mit Emulsion Suitable with emulsion

GF - GFH - GFS - GFM

Vc (m/min)		GF611x		GF616x		GF621x GF626x	GFH611x	GFS661x		GFS666x		GFM626x		
			VS		VS	VS	VH		VS		VS		VS	
Standard Standard	Beschichtet Coated	Vorschub fz (mm/Zahn)								Milling fz (mm/tooth)				
	80-150		0.04-0.15		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		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		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		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		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		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		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		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		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		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		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		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		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	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	42
	30-60		0.02-0.08		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		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		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		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	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	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	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	72
	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	73
	100-250		0.05-0.15		0.05-0.15	0.05-0.15			0.05-0.15		0.05-0.15		0.05-0.15	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	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	82
	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		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	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	92
	30-50		0.05-0.15		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		0.05-0.15	94

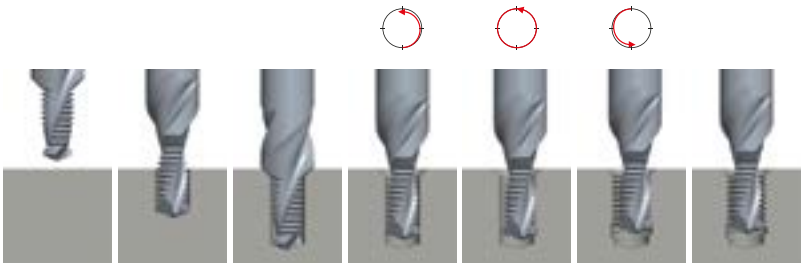
A ***Optimal mit Luft***
Optimal with air

A ***Geeignet mit Luft***
Suitable with air

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

ANWENDUNGSTABELLE BGF— APPLICATION CHART BGF

Programmierzyklus für Bohrgewindefräser BGF
Programming cycle for thrillers BGF



Anwendungstabelle für Bohrgewindefräser Application chart for thrillers

	Werkstoff-Gruppen Material groups		*Werkstoffbezeichnung*	Material designation	*Härte* Hardness (HB)	*Festigkeit* Tensile strength Rm (N/mm²)	*Kühlung* Lubricant	
							Standard Standard	*Beschichtet* Coated
10	*Stahl* Steels	11	*Automatenstahl*	Free-cutting steels	< 200	< 700		
		12	*Baustahl, Einsatzstahl*	Structural, cementation steels	< 200	< 700		
		13	*Kohlenstoffstahl*	Carbon steels	< 300	< 1000		
		14	*Stahl legiert < 850 N/mm²*	Alloy steels < 850 N/mm²	< 250	< 850		
		15	*Stahl legiert / vergütet > 850 - < 1150 N/mm²*	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850		
		16	*Hochfester Stahl ≤ 44 HRC*	High tensile alloy steels ≤ 44 HRC	> 250	> 850		
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400		
		18	*Stahl gehärtet > 54 - ≤ 63 HRC*	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980		
20	*Rostfreier Stahl* Stainless steels	21	*Rostfreier Stahl, geschwefelt*	Free machining stainless steels	< 250	< 850		
		22	*Austenitisch*	Austenitic stainless steels	< 250	< 850		
		23	*Ferritisch, martensitisch < 850 N/mm²*	Ferritic and martensitic < 850 N/mm²	< 250	< 850		
		24	*Ferritisch, martensitisch > 850 - < 1150 N/mm²*	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850		
30	*Guss* Cast iron	31	*Grauguss*	Cast iron	< 250	< 850		O E
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850		O E
40	*Titan* Titanium	41	*Reintitan*	Pure titanium	< 250	< 850		
		42	*Titanlegierung*	Titanium alloys	> 250	> 850		
50	*Nickel* Nickel	51	*Nickellegierung 1 ≤ 850 N/mm²*	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850		
		52	*Nickellegierung 2 > 850 - ≤ 1150 N/mm²*	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850		
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150		
60	*Kupfer* Copper	61	*Reinkupfer (Elektrolytkupfer)*	Pure copper (electrolytic copper)	< 120	< 400		
		62	*Messing, Bronze, Rotguss (kurzspanend)*	Short chip brass, phosphor bronze, gun metal	< 200	< 700	O E	O E
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	O E	O E
70	*Aluminium Magnesium* Aluminium Magnesium	71	*Al unlegiert*	Al unalloyed	< 100	< 350	O E	O E
		72	*Al legiert Si < 1.5 %*	Al alloyed Si < 1.5 %	< 150	< 500	O E	O E
		73	*Al legiert Si > 1.5 % - < 10 %*	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	O E	O E
		74	*Al legiert Si > 10 %, Mg-Legierungen*	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	O E	O E
80	*Kunststoff* Plastic compounds	81	*Thermoplaste*	Thermoplastics	-	-		
		82	*Duroplaste*	Duroplastics	-	-		
		83	*Faserverstärkte Kunststoffe*	Glass fibre reinforced plastics	-	-		E
90	*Edelmetalle* Precious metals	91	*Gelbgold*	Yellow gold	-	-	O E	O E
		92	*Rotgold*	Red gold	-	-		
		93	*Weissgold*	White gold	-	-		
		94	*Silber*	Silver	-	-		

O *Optimal mit Schneidöl* Optimal with cutting oil

O *Geeignet mit Schneidöl* Suitable with cutting oil

E *Optimal mit Emulsion* Optimal with emulsion

E *Geeignet mit Emulsion* Suitable with emulsion

BGF

Vc (m/min)			VS		VS	
Standard Standard	Beschichtet Coated	Bohrvorschub f (mm/U)	Drilling f (mm/rev.)	Fräsvorschub fz (mm/Zahn)	Milling fz (mm/tooth)	
						11
						12
						13
						14
						15
						16
						17
						18
						21
						22
						23
						24
	80-150		0.10-0.30		0.05-0.15	31
	80-120		0.10-0.20		0.02-0.10	32
						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	62
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20	63
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20	71
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20	72
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20	73
100-200	150-250	0.10-0.30	0.10-0.30	0.05-0.15	0.05-0.15	74
						81
						82
	80-120		0.10-0.20		0.02-0.10	83
100-200	150-300	0.10-0.40	0.10-0.40	0.05-0.20	0.05-0.20	91
						92
						93
						94

A *Optimal mit Luft*
Optimal with air

A *Geeignet mit Luft*
Suitable with air

Bei den aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

Technische Hinweise

Δ *Die Bearbeitung von langspanenden Werkstoffen verlangt ein mehrmaliges Unterbrechen des Bohrzyklus zum Entfernen der Späne.*

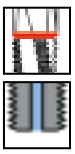
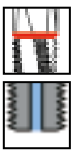
Δ *Bitte wenden Sie sich an DC SWISS SA wenn Sie die Bohrgewindefräser in andere Werkstoffe einsetzen möchten.*

Technical notes

Δ When machining long chipping materials, they may require deburring operations.

Δ Please ask DC SWISS SA before using BGF type thrillers in materials where no cutting data is given.

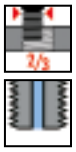
Inhaltsverzeichnis - VHM-Gewindefräser Typ GF
Directory - Solid carbide thread milling cutters type GF

	GF											
Typ **Type**	GF6110	GF6110VS	GF6160	GF6160VS	GF6115	GF6115VS	GF6165	GF6165VS	GF6116	GF6116VS	GF6166	GF6166VS
Beschichtung **Coating**		VS		VS		VS		VS		VS		VS
												
Gewindelänge **Thread length**	 1.5 x D_1		 1.5 x D_1		 2 x D_1		 2 x D_1		 2.5 x D_1		 2.5 x D_1	
Merkmale **Characteristics**												
M ISO DIN 13	104				105		105		106		106	
MF ISO DIN 13	107						108				108	
UNC ASME B1.1	109						110				110	
UNF ASME B1.1	111						112				112	
UN ASME B1.1												
UNEF ASME B1.1												
UNS ASME B1.1												
G (BSP) DIN EN ISO 228							113				113	
NPT ASME B1.20.1			114									
NPTF ANSI B1.20.3			114									

Inhaltsverzeichnis - VHM-Gewindefräser Typ GF - GFH und GFS
Directory - Solid carbide thread milling cutters type GF - GFH and GFS

	GF		GFH	GFS							
Typ **Type**	GF6215VS	GF6265VS	GFH6110VH	GFS6610	GFS6610VS	GFS6660	GFS6660VS	GFS6615	GFS6615VS	GFS6665	GFS6665VS
Beschichtung **Coating**	VS	VS	VH		VS		VS		VS		VS
											
Gewindelänge **Thread length**	2 x D_1	2 x D_1	1.5 x D_1	1.5 x D_1		1.5 x D_1		2 x D_1		2 x D_1	
Merkmale **Characteristics**			 HRC ≤ 63								
M ISO DIN 13	115	115	104	117		117		118		118	
MF ISO DIN 13	115	115		120		120		121		121	
UNC ASME B1.1	116	116		122		122		123		123	
UNF ASME B1.1	116	116		124		124		125		125	
UN ASME B1.1											
UNEF ASME B1.1											
UNS ASME B1.1											
G (BSP) DIN EN ISO 228						126				126	
NPT ASME B1.20.1						127					
NPTF ANSI B1.20.3						127					

Inhaltsverzeichnis - VHM-Gewindefräser Typ GFS und GFM
Directory - Solid carbide thread milling cutters type GFS and GFM

	GFS				GFM	
Typ Type	GFS6616	GFS6616VS	GFS6666	GFS6666VS	GFM6260	GFM6260VS
Beschichtung Coating		VS		VS		VS
						
Gewindelänge Thread length						
Merkmale Characteristics						
M ISO DIN 13	119		119		128	
MF ISO DIN 13					128	
UNC ASME B1.1					129	
UNF ASME B1.1					129	
UN ASME B1.1					129	
UNEF ASME B1.1					129	
UNS ASME B1.1					129	
G (BSP) DIN EN ISO 228					130	
NPT ASME B1.20.1					131	
NPTF ANSI B1.20.3					131	

Inhaltsverzeichnis - VHM-Bohrgewindefräser Typ BGF
Directory - Solid carbide thrillers type BGF

	BGF				
Typ **Type**	BGF6760 / BGF6760VS	BGF6765 / BGF6765VS	BGF6766 / BGF6766VS	BGF6865 / BGF6865VS	BGF6866 / BGF6866VS
Beschichtung **Coating**	VS	VS	VS	VS	VS
					
Gewindelänge **Thread length**	1.5 x D_1	2 x D_1	2.5 x D_1	2 x D_1	2.5 x D_1
Merkmale **Characteristics**					
M ISO DIN 13	132	133	133	134	134
MF ISO DIN 13	135	135			

Formel zur Berechnung des "Fräsvorschubes"

Vorschub $V_{fK} = f_z \times Z \times n$

Vorschub der Werkzeugmitte $V_{fM} = \dfrac{V_{fK} \times (\text{Nenndurchmesser des Gewindes} - \text{Fräserdurchmesser})}{\text{Nenndurchmesser des Gewindes}}$

Auf CNC-Maschinen, die den Vorschub der Werkzeugmitte nicht automatisch berechnen, muss der Wert "Vorschub Werkzeugmitte V_{fM}" berücksichtigt werden.

Thread milling feed rates

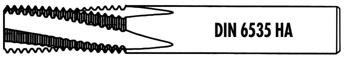
Feed rate $V_{fK} = f_z \times Z \times n$

Feed rate of the tool middle $V_{fM} = \dfrac{V_{fK} \times (\text{nominal thread } \varnothing - \varnothing \text{ of the thread milling cutter})}{\text{nominal thread } \varnothing}$

On CNC machines, which do not calculate for themselves the feed rate at the tool-centre, the value "centre of the tool V_{fM}" must be considered.

M ISO DIN 13

VHM CAR



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

GF - GFH

	GF6110	GF6110VS		GFH6110VH

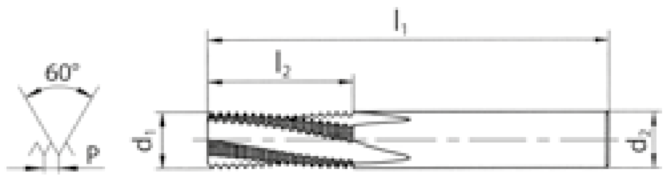
GF6110 R27

GF6110VS R27 VS

GFH6110VH R10 VH

HRC ≤ 63

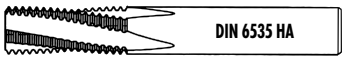
1.5 x D_1



Ø D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm	GF	GFH		GF6110 ID	GF6110VS ID		GFH6110VH 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

M ISO DIN 13

VHM CAR



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

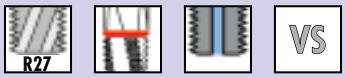
GF

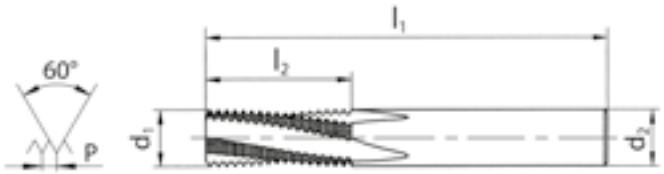
GF6115

GF6115VS

GF6165

GF6165VS



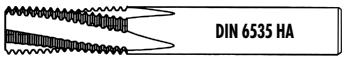


GF6115	GF6115VS	GF6165	GF6165VS
			
			
			

Ø 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	8.8	6	3	3.3	● 146298	● 146969		
5	0.8	3.8	48	10.8	6	3	4.2	● 146299	● 146970		
6	1	4.5	54	13.5	6	3	5	● 146300	● 146971	● 126350	● 116398
8	1.25	5.95	54	18.1	6	3	6.8	● 146321	● 146972	● 126586	● 116399
10	1.5	7.95	64	21.8	8	4	8.5	● 146322	● 146973	● 124836	● 116400
12	1.75	9.95	72	25.4	10	4	10.2			● 116342	● 116401
14	2	9.95	74	31	10	4	12			● 125066	● 116402
16	2	11.95	80	35	12	4	14			● 125114	● 115990
18	2.5	13.95	90	41.3	14	4	15.5			● 125229	● 116403
20							17.5				

M ISO DIN 13

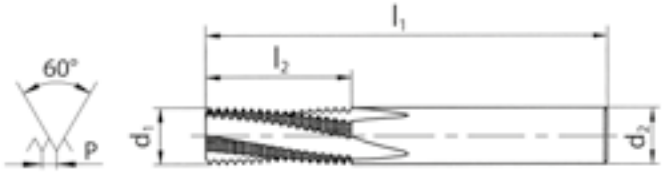
VHM CAR



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

GF

GF6116	R27			
GF6116VS	R27		VS	
GF6166	R27			
GF6166VS	R27			VS

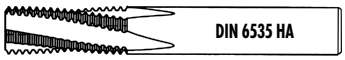


GF6116	GF6116VS	GF6166	GF6166VS
			
			
			

Ø 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				

MF ISO DIN 13

VHM CAR



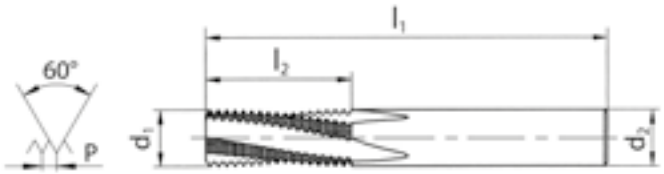
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6110

GF6110VS

VS

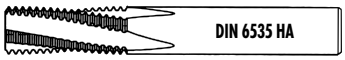


	GF6110	GF6110VS		
				
				
				

Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
4	0.5	3	48	7.3	6	3	3.5	● 135218	● 135219
5	0.5	3.8	48	8.8	6	3	4.5	● 135069	● 135220

MF ISO DIN 13

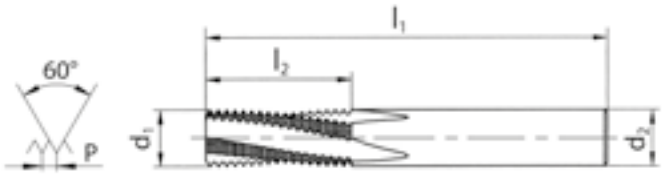
VHM CAR

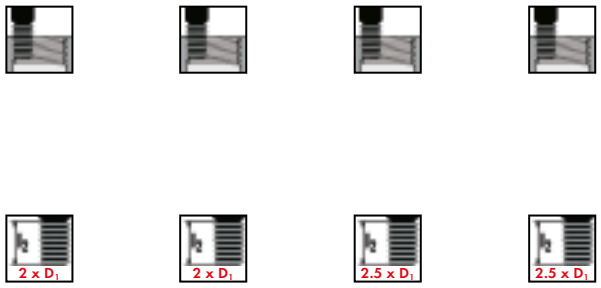


HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

	GF6165	GF6165VS	GF6166	GF6166VS
	R27	R27	R27	R27
		VS		VS



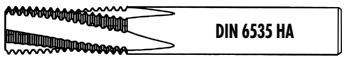


Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
6	0.5	4.5	54	12.8	6	3	5.5	● 135221	● 135222
6	0.75	4.5	54	13.1	6	3	5.25	● 123664	● 123665
8	0.5	5.95	54	17.8	6	3	7.5	● 135002	● 135223
8	0.75	5.95	54	16.9	6	3	7.25	● 143110	● 135224
8	1	5.95	54	17.5	6	3	7	● 124239	● 116404
10	1	7.95	64	21.5	8	4	9	● 119986	● 116405
10	1.25	7.95	64	21.9	8	4	8.8	● 120102	● 116406
12	1	9.95	72	25.5	10	4	11	● 120303	● 116407
12	1.5	9.95	72	26.3	10	4	10.5	● 120392	● 120393

Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
6	0.5	4.5	54	15.8	6	3	5.5	● 155389	● 155398
6	0.75	4.5	54	16.1	6	3	5.25	● 155390	● 155399
8	0.5	5.95	54	20.8	6	3	7.5	* 155391	* 155400
8	0.75	5.95	54	20.6	6	3	7.25	● 155392	● 155401
8	1	5.95	54	21.5	6	3	7	* 155393	* 155402
10	1	7.95	64	26.5	8	4	9	● 155394	● 155403
10	1.25	7.95	64	26.9	8	4	8.8	* 155395	* 155404
12	1	9.95	74	31.5	10	4	11	● 155396	● 155405
12	1.5	9.95	74	32.3	10	4	10.5	● 155397	● 155406

UNC ASME B1.1

VHM CAR



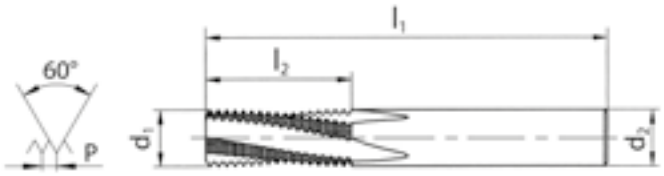
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6110

GF6110VS

VS

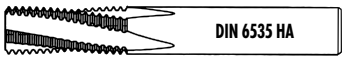


GF6110	GF6110VS		
			
			
 1.5 x D1	 1.5 x D1		

Ø" D1 UNC	P TPI	d1 mm	l1 mm	l2 mm	d2 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

UNC ASME B1.1

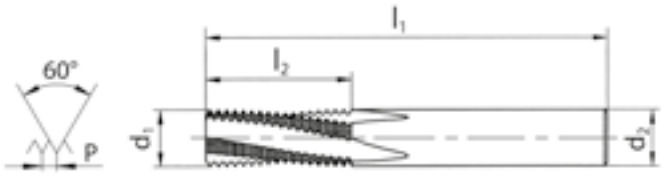
VHM CAR

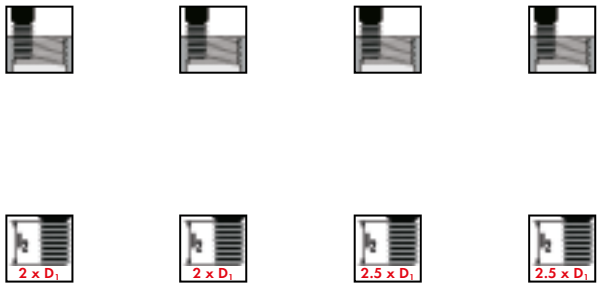


HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6165	R27
GF6165VS	R27, VS
GF6166	R27
GF6166VS	R27, VS



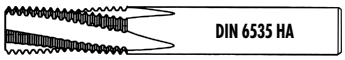


Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID	GF6166 ID	GF6166VS ID
1/4	20	4.8	54	14.6	6	3	5.1	★ 155407	★ 155408		
5/16	18	5.95	54	17.6	6	3	6.5	● 116047	● 135231		
3/8	16	7.1	64	21.5	8	4	8	● 135232	● 135233		
7/16	14	7.95	64	24.5	8	4	9.3	★ 116049	★ 135234		
1/2	13	9.95	72	28.4	10	4	10.8	★ 135235	★ 135236		

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6166 ID	GF6166VS ID
1/4	20	4.8	54	17.1	6	3	5.1	● 155409	● 155414
5/16	18	5.95	54	21.9	6	3	6.5	● 155410	● 155415
3/8	16	7.1	64	26.2	8	4	8	● 155411	● 155416
7/16	14	7.95	64	29.9	8	4	9.3	● 155412	● 155417
1/2	13	9.95	74	34.2	10	4	10.8	● 155413	● 155418

UNF ASME B1.1

VHM CAR



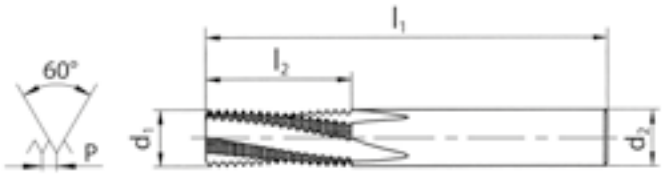
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6110

GF6110VS

VS

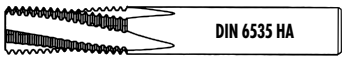


GF6110	GF6110VS		
			
			
 1.5 x D1	 1.5 x D1		

Ø" D1 UNF	P TPI	d1 mm	l1 mm	l2 mm	d2 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

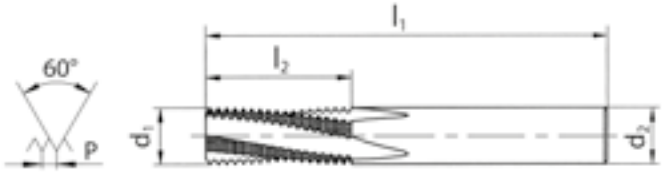
VHM CAR



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

GF

GF6165	R27			
GF6165VS	R27			VS
GF6166	R27			
GF6166VS	R27			VS



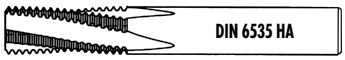
GF6165	GF6165VS	GF6166	GF6166VS
			
			
			

Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
1/4	28	4.8	54	14.1	6	3	5.5	● 155419	● 155420
5/16	24	5.95	54	17.5	6	3	6.9	● 135242	● 135243
3/8	24	7.1	64	20.6	8	4	8.5	● 135182	● 135245
7/16	20	7.95	64	24.8	8	4	9.8	● 135246	● 135247
1/2	20	9.95	72	27.3	10	4	11.4	● 135183	● 135249

Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
1/4	28	4.8	54	16.8	6	3	5.5	● 155421	● 155426
5/16	24	5.95	54	20.6	6	3	6.9	● 155422	● 155427
3/8	24	7.1	64	24.9	8	4	8.5	● 155423	● 155428
7/16	20	7.95	64	28.6	8	4	9.8	● 155424	● 155429
1/2	20	9.95	74	33.7	10	4	11.4	● 155425	● 155430

G DIN EN ISO 228 (BSP)

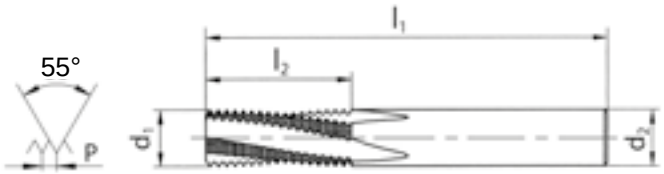
VHM CAR

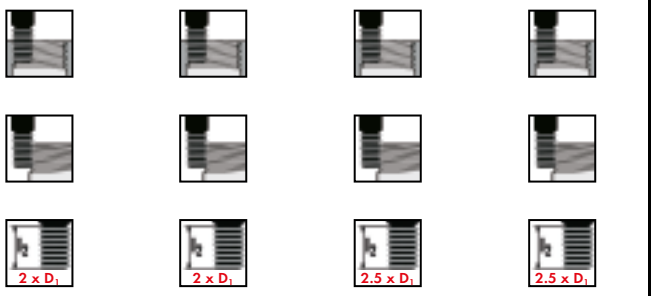


HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

	GF6165	GF6165VS	GF6166	GF6166VS
	R27	R27	R27	R27
		VS		VS





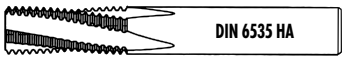
Ø" D_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID
1/8	28	7.95	64	21.3	8	4	8.75	● 119347	● 116409
1/4	19	9.95	72	28.7	10	4	11.6	● 119292	● 116410
3/8	19	13.6	80	35.4	14	4	15.2	● 119678	● 116411

Ø" D_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6166 ID	GF6166VS ID
1/8	28	7.95	64	24.9	8	4	8.75	● 155431	● 155434
1/4	19	9.95	74	34.1	10	4	11.6	● 155432	● 155435
3/8	19	13.6	90	43.4	14	4	15.2	● 155433	● 155436

NPT, NPTF

ASME B1.20.1
ANSI B1.20.3

VHM CAR



HB HE

sur demande
auf Anfrage
on request
su richiesta
sobre pedido

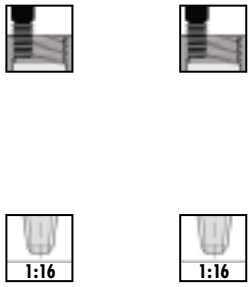
GF

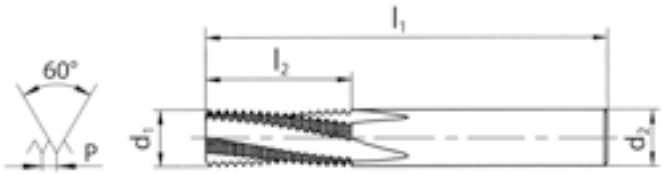
GF6160


GF6160VS



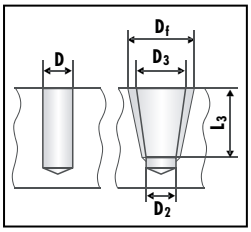
GF6160	GF6160VS		





Ø" D_1 NPT	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm		ID	ID
1/8	27	7.3	64	9.9	8	4	● 116371	● 116435
1/4	18	9.95	72	14.8	12	4	● 135250	● 135251
3/8	18	12.5	80	14.8	14	4	● 135252	● 135253
1/2	14	14.7	90	19.1	16	4	● 155437	● 155438

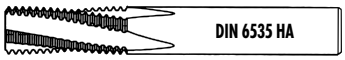
Ø" D_1 NPTF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm		ID	ID
1/8	27	7.3	64	9.9	8	4	* 135254	
3/8	18	12.5	80	14.8	12	4	* 135258	* 135259
1/2	14	14.7	90	19.1	14	4	* 155439	* 155440



	Vorbohrung *Core hole*				*Fräsen* *Milling*	
			NPT NPTF			
Ø" D_1	D	D_2	D_3 (+0.05)		D_f	L_3
1/8	8.5	8.3	8.74	8.76	9.81	6.92
1/4	11.0	10.8	11.36	11.40	12.99	10.02
3/8	14.5	14.2	14.80	14.84	16.41	10.33
1/2	17.9	17.5	18.32	18.33	20.37	13.57

M, MF ISO DIN 13

VHM CAR



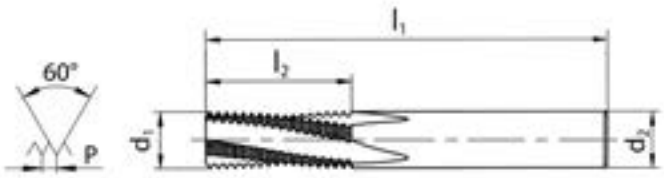
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

	GF6215VS	GF6265VS		
				
				
				

GF6215VS — R15 — VS

GF6265VS — R15 — VS

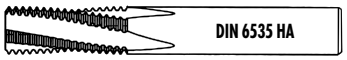


Ø D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
4	0.7	3	48	8.8	6	3	3.3	● 196068	
5	0.8	3.8	48	10.8	6	3	4.2	● 196069	
6	1	4.5	54	13.5	6	3	5	● 196070	● 196080
8	1.25	5.95	54	18.1	6	3	6.8	● 196071	● 196081
10	1.5	7.95	64	21.8	8	4	8.5	● 196072	● 196082
12	1.75	9.95	72	25.4	10	4	10.2	● 196073	● 196083
14	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

Ø 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

VHM CAR



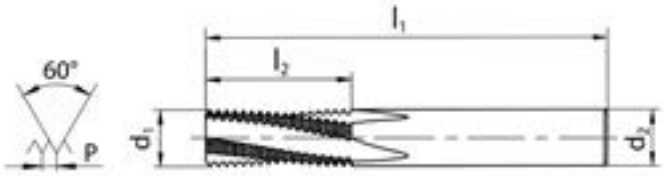
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6215VS R15 VS

GF6265VS R15 VS

	GF6215VS	GF6265VS		
				
				
	 2 x D_1	 2 x D_1		



Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
8	32	3.1	48	9.1	6	3	3.4	● 196109	
10	24	3.6	48	10.1	6	3	3.8	● 196110	
1/4	20	4.8	54	14.6	6	3	5.1	● 196111	● 196118
5/16	18	5.95	54	17.6	6	3	6.5	● 196112	● 196119
3/8	16	7.1	64	21.5	8	4	8	● 196113	● 196120
7/16	14	7.95	64	24.5	8	4	9.3	● 196114	● 196121
1/2	13	9.95	72	28.4	10	4	10.8	● 196115	● 196122
5/8	11	11.95	80	35.8	12	4	13.6		● 196123
3/4	10	13.95	90	41.9	14	4	16.6		● 196124

Ø" 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	● 196125	
1/4	28	4.8	54	14.1	6	3	5.5	● 196126	● 196133
5/16	24	5.95	54	17.5	6	3	6.9	● 196127	● 196134
3/8	24	7.1	64	20.6	8	4	8.5	● 196128	● 196135
7/16	20	7.95	64	24.8	8	4	9.8	● 196129	● 196136
1/2	20	9.95	72	27.3	10	4	11.4	● 196130	● 196137
5/8	18	11.95	80	34.6	12	4	14.5		● 196138
3/4	16	13.95	90	40.5	14	4	17.5		● 196139

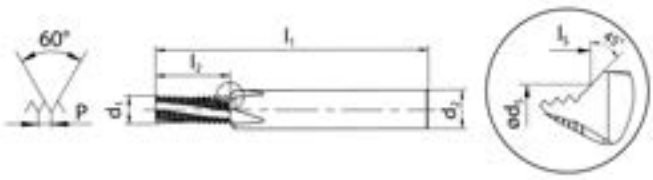
M ISO DIN 13

VHM CAR

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

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS



	GFS6610	GFS6610VS	GFS6660	GFS6660VS
				
				
				

Ø D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm			GFS6610 ID	GFS6610VS ID	GFS6660 ID	GFS6660VS 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				

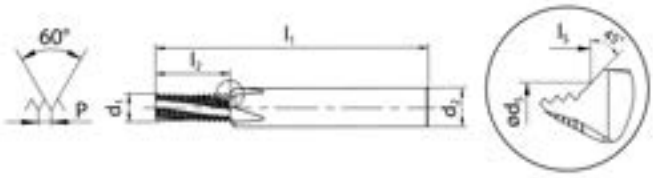
M ISO DIN 13

VHM CAR

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

GFS

GFS6615	R27	45°		
GFS6615VS	R27	45°	VS	
GFS6665	R27	45°		
GFS6665VS	R27	45°		VS



	GFS6615	GFS6615VS	GFS6665	GFS6665VS
				
				
				

Ø D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 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				

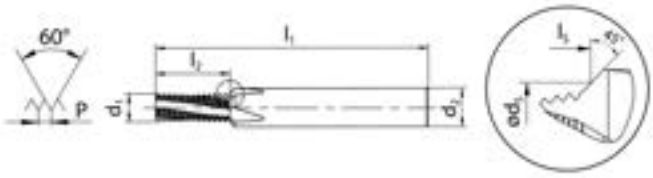
M ISO DIN 13

VHM CAR

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

GFS

GFS6616	R27	45°		
GFS6616VS	R27	45°	VS	
GFS6666	R27	45°		
GFS6666VS	R27	45°		VS



	GFS6616	GFS6616VS	GFS6666	GFS6666VS
				
				
				

Ø D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 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

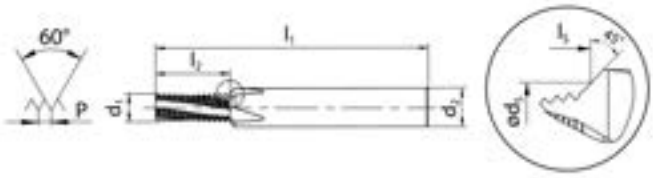
MF ISO DIN 13

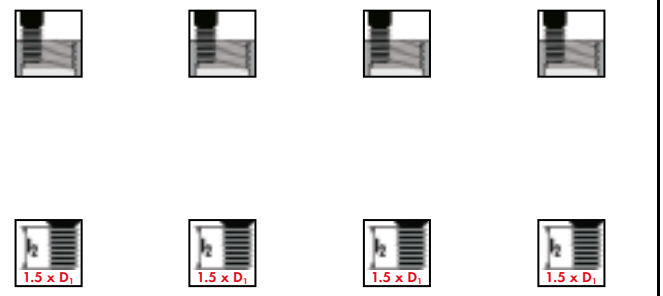
VHM CAR

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

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS





Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm			GFS6610 ID	GFS6610VS ID	GFS6660 ID	GFS6660VS 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

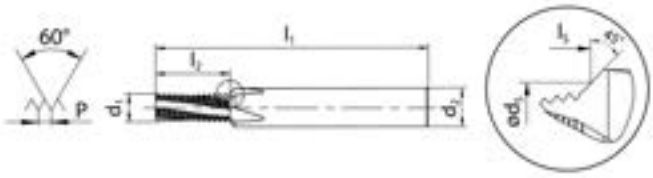
MF ISO DIN 13

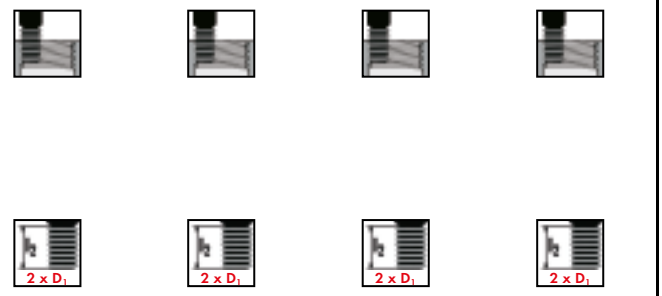
VHM CAR

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

GFS

GFS6615	R27	45°		
GFS6615VS	R27	45°	VS	
GFS6665	R27	45°		
GFS6665VS	R27	45°		VS





Ø D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm			GFS6615 ID	GFS6615VS ID	GFS6665 ID	GFS6665VS 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

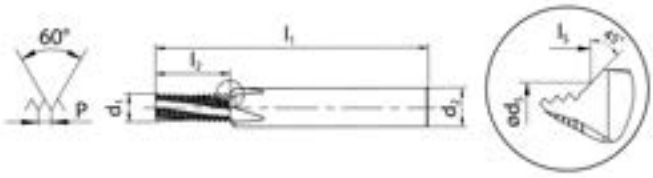
UNC ASME B1.1

VHM CAR

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

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS



	GFS6610	GFS6610VS	GFS6660	GFS6660VS
				
				
				
	1.5 x D_1	1.5 x D_1	1.5 x D_1	1.5 x D_1

Ø" D_1 UNC	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	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

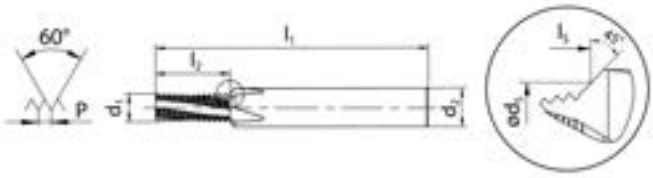
UNC ASME B1.1

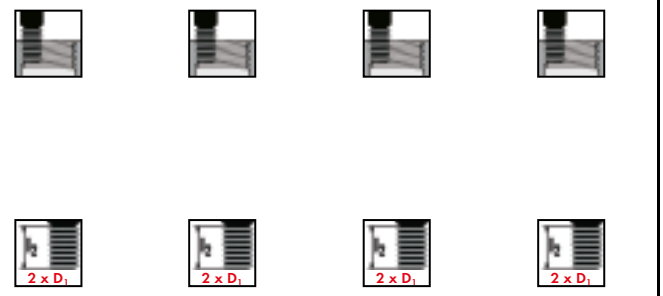
VHM CAR

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

GFS

GFS6615	R27	45°		
GFS6615VS	R27	45°	VS	
GFS6665	R27	45°		
GFS6665VS	R27	45°		VS





Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm			GFS6615 ID	GFS6615VS ID	GFS6665 ID	GFS6665VS 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

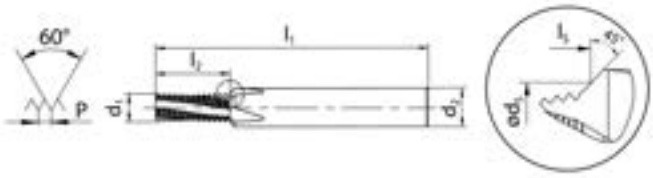
UNF ASME B1.1

VHM CAR

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

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS



GFS6610	GFS6610VS	GFS6660	GFS6660VS
			
			
			

Ø" 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

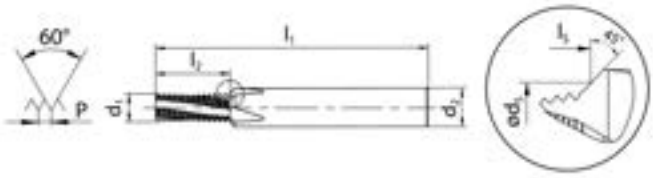
UNF ASME B1.1

VHM CAR

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

GFS

GFS6615	R27	45°		
GFS6615VS	R27	45°	VS	
GFS6665	R27	45°		
GFS6665VS	R27	45°		VS



	GFS6615	GFS6615VS	GFS6665	GFS6665VS
				
				
				

Ø" 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
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

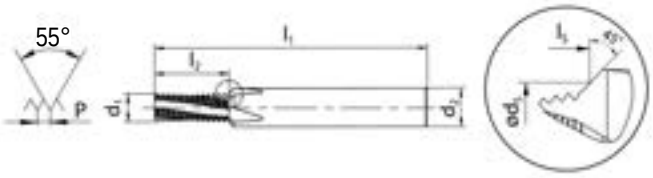
G DIN EN ISO 228 (BSP)

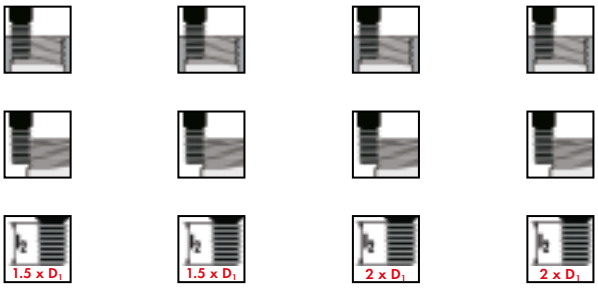
VHM CAR

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

GFS

GFS6660	R27	45°		
GFS6660VS	R27	45°		VS
GFS6665	R27	45°		
GFS6665VS	R27	45°		VS



	GFS6660	GFS6660VS	GFS6665	GFS6665VS
				
				
	1.5 x D_1	1.5 x D_1	2 x D_1	2 x D_1

Ø" D_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm			ID	ID
1/4	19	9.95	90	22.1	23.8	13.5	14	4	11.6		* 135414
3/8	19	12.8	102	27.4	29.6	17.1	18	4	15.2	* 135415	* 135416

Ø" D_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm			ID	ID
1/8	28	7.95	80	21.3	22.3	10	12	4	8.75	* 119349	* 135417
1/4	19	9.95	90	28.7	30.5	13.5	14	4	11.6	* 119298	* 135418
3/8	19	12.8	102	35.4	37.6	17.1	18	4	15.2	* 119680	* 135419

NPT, NPTF

ASME B1.20.1
ANSI B1.20.3

VHM CAR

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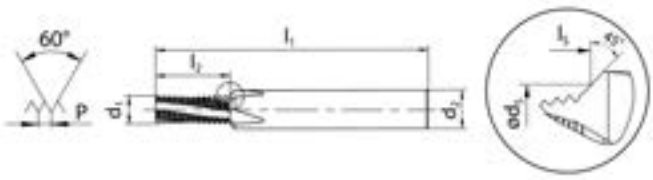
GFS

	GFS6660	GFS6660VS
		
		
	 1:16	 1:16

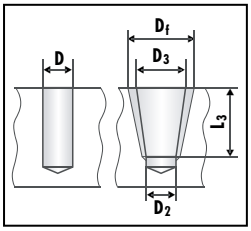
GFS6660 — R27 · 45° · 

GFS6660VS — R27 · 45° ·  · VS



Ø" D_1 NPT	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm		ID	ID
1/4	18	9.95	80	14.8	16.4	14	16	4	* 126899	* 135491
3/8	18	12.5	80	14.8	16.9	17.6	18	4	* 126928	

Ø" D_1 NPTF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm		ID	ID
1/8	27	7.3	70	9.9	11.2	10.6	12	4	* 135493	* 135494
1/4	18	9.95	80	14.8	16.4	14	16	4	* 135495	* 135496
3/8	18	12.5	80	14.8	16.9	17.6	18	4	* 135497	* 135498



	Vorbohrung / Core hole				Fräsen / Milling	
			NPT NPTF			
Ø" D_1	D	D_2	D_3 (+0.05)		D_f	L_3
1/8	8.5	8.3	8.74	8.76	9.81	6.92
1/4	11.0	10.8	11.36	11.40	12.99	10.02
3/8	14.5	14.2	14.80	14.84	16.41	10.33

M, MF ISO DIN 13

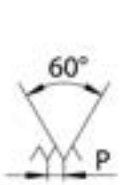
VHM CAR

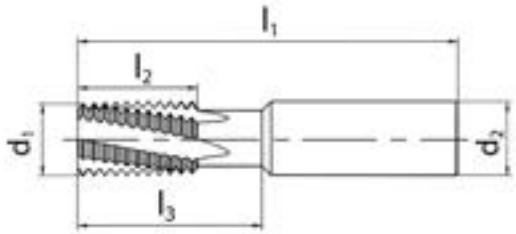
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GFM

GFM6260 R15

GFM6260VS R15 VS





GFM6260	GFM6260VS		
			
			

d_1 mm	P mm	Ø D_1 ≥ M, MF	l_1 mm	l_2 mm	l_3 mm	d_2 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

UN

UNC, UNF
UNEF, UNS ASME B1.1

VHM
CAR

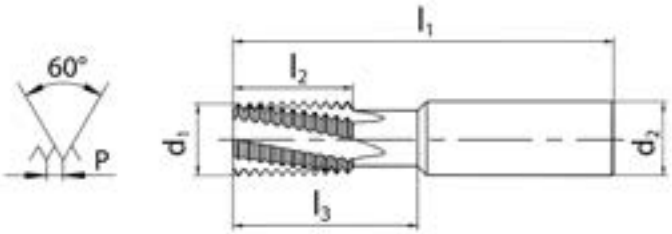
HB
HE

sur demande
auf Anfrage
on request
su richiesta
sobre pedido

GFM

GFM6260 

GFM6260VS 



GFM6260	GFM6260VS		
			
			
			

d_1 mm	P TPI	Ø" D_1 ≥ UN	l_1 mm	l_2 mm	l_3 mm	d_2 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)

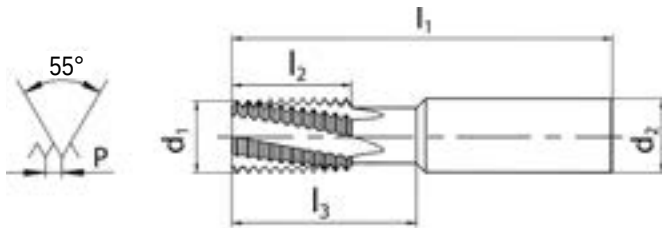
VHM CAR

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

GFM

GFM6260 R15

GFM6260VS R15 VS



	GFM6260	GFM6260VS		
				
				
				
				

d_1 mm	P TPI	Ø" D_1 G	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**	≥ 1	105	32.3	52	20	5	● **118691**	● **135282**

NPT, NPTF

ASME B1.20.1
ANSI B1.20.3

VHM
CAR

HB
HE

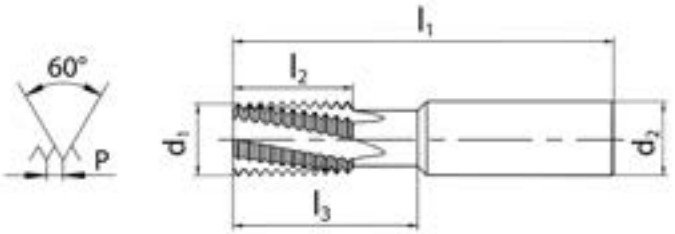
sur demande
auf Anfrage
on request
su richiesta
sobre pedido

GFM

	GFM6260	GFM6260VS		
				
				
				
				

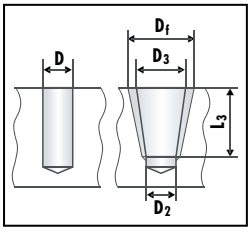
GFM6260 

GFM6260VS 



d_1 mm	P TPI	Ø" D_1 ≥ NPT	l_1 mm	l_2 mm	d_2 mm		GFM6260 ID	GFM6260VS ID
14.5	14	1/2	90	19.1	16	4	● 135323	● 135324
18.5	11.5	1	90	23.2	20	5	● 135325	● 135326

d_1 mm	P TPI	Ø" D_1 ≥ NPTF	l_1 mm	l_2 mm	d_2 mm		GFM6260 ID	GFM6260VS ID
14.5	14	1/2	90	19.1	16	4	* 135327	* 135328
18.5	11.5	1	90	23.2	20	5	* 135329	* 135330



	Vorbohrung Core hole				Fräsen Milling	
			NPT NPTF			
Ø" D_1	D	D_2	D_3 (+0.05)		D_f	L_3
1/2	17.9	17.5	18.32	18.33	20.37	13.57
3/4	23.2	22.8	23.67	23.68	25.69	14.05
1	29.0	28.6	29.69	29.72	32.18	16.79
1 1/4	37.7	37.3	38.45	38.48	40.90	17.30
1 1/2	44.0	43.5	44.52	44.55	49.67	17.30
2	56.0	55.5	56.56	56.59	58.99	17.70

M ISO DIN 13

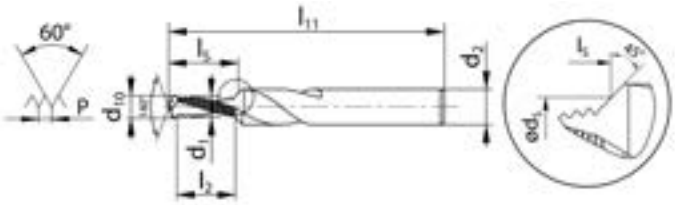
VHM CAR

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

BGF

BGF6760

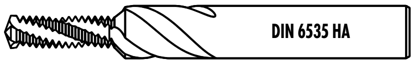
BGF6760VS

BGF6760	BGF6760VS		
			
			
			
			
			

Ø D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_5 mm	d_5 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

VHM CAR



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

BGF

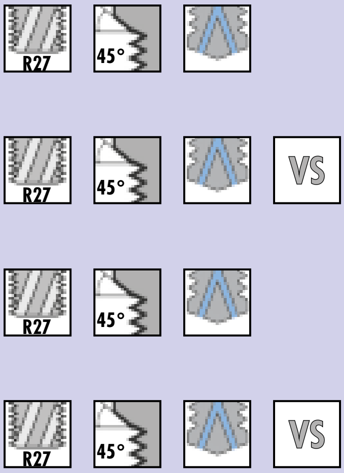
BGF6765	BGF6765VS	BGF6766	BGF6766VS

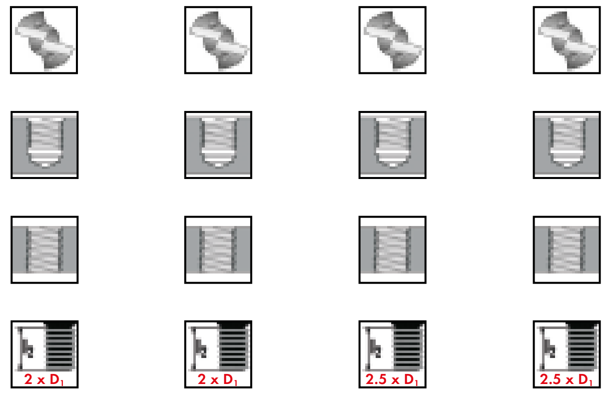
BGF6765

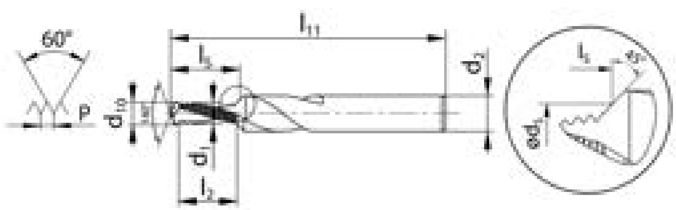
BGF6765VS

BGF6766

BGF6766VS







Ø D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm	Z	ID BGF6765	ID BGF6765VS	ID BGF6766	ID BGF6766VS
4	0.7	3.1	3.3	48	7.7	9.5	4.1	6	2	★ 153430	★ 153442		
5	0.8	4	4.2	54	9.6	11.8	5.1	6	2	★ 151305	★ 151306		
6	1	4.75	5	62	12	14.7	6.2	8	2	★ 150933	★ 151776		
8	1.25	6.5	6.75	74	15	18.4	8.2	10	2	★ 153431	★ 150588		
10	1.5	8.25	8.5	80	19.4	23.6	10.3	12	2	★ 153432	★ 150589		
12	1.75	9.95	10.25	90	22.7	27.3	12.3	14	2	★ 153433	★ 150927		
14	2	11.6	12	102	27.9	33.1	14.4	16	2	★ 153434	★ 153443		
16	2	13.6	14	102	31.9	37.5	16.4	18	2	★ 153435	★ 151324		

Ø D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm	Z	ID BGF6765	ID BGF6765VS	ID BGF6766	ID BGF6766VS
6	1	4.75	5	62	15	17.7	6.2	8	2			● 153451	● 153467
8	1.25	6.5	6.75	74	20	23.4	8.2	10	2			● 153452	● 153468
10	1.5	8.25	8.5	80	23.9	28.1	10.3	12	2			★ 153453	★ 153469
12	1.75	9.95	10.25	90	29.7	34.3	12.3	14	2			★ 153454	★ 153470
14	2	11.6	12	102	35.9	41.1	14.4	16	2			★ 153455	★ 153471
16	2	13.6	14	102	39.9	45.5	16.4	18	2			★ 153456	★ 153472

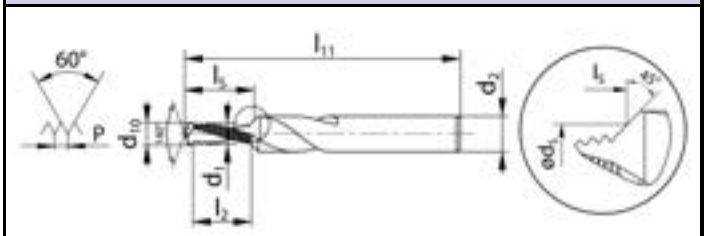
M ISO DIN 13

VHM CAR

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

BGF

BGF6865	R27	45°		
BGF6865VS	R27	45°		VS
BGF6866	R27	45°		
BGF6866VS	R27	45°		VS



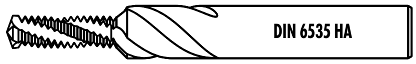
	BGF6865	BGF6865VS	BGF6866	BGF6866VS
				
				
				
				
	2 x D_1	2 x D_1	2.5 x D_1	2.5 x D_1

Ø D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		ID	ID
6	1	4.75	5	62	12	14.7	6.2	8	3	* 153577	* 153589
8	1.25	6.5	6.75	74	15	18.4	8.2	10	3	* 153578	* 153590
10	1.5	8.25	8.5	80	19.4	23.6	10.3	12	3	* 153579	* 153591
12	1.75	9.95	10.25	90	22.7	27.3	12.3	14	3	* 153580	* 153592
14	2	11.6	12	102	27.9	33.1	14.4	16	3	* 153581	* 153593
16	2	13.6	14	102	31.9	37.5	16.4	18	3	* 153582	* 153594

Ø D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		ID	ID
6	1	4.75	5	62	15	17.7	6.2	8	3	* 153601	* 153613
8	1.25	6.5	6.75	74	20	23.4	8.2	10	3	* 153602	* 153614
10	1.5	8.25	8.5	80	23.9	28.1	10.3	12	3	* 153603	* 153615
12	1.75	9.95	10.25	90	29.7	34.3	12.3	14	3	* 153604	* 153616
14	2	11.6	12	102	35.9	41.1	14.4	16	3	* 153605	* 153617
16	2	13.6	14	102	39.9	45.5	16.4	18	3	* 153606	* 153618

MF ISO DIN 13

VHM CAR

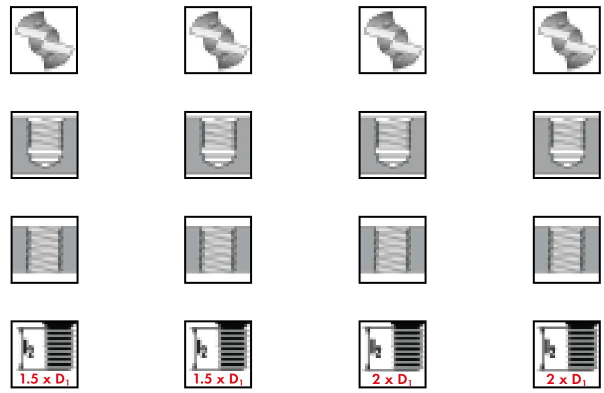


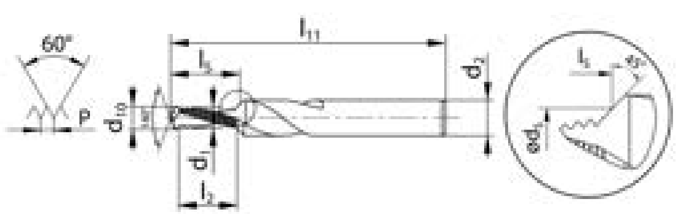
HB HE sur demande / auf Anfrage / on request / su richiesta / sobre pedido

BGF

Type	Features
BGF6760	R27, 45°
BGF6760VS	R27, 45°, VS
BGF6765	R27, 45°
BGF6765VS	R27, 45°, VS

BGF6760	BGF6760VS	BGF6765	BGF6765VS





Ø D1 MF	P mm	d1 mm	d10 mm	l11 mm	l2 mm	ls mm	ds mm	d2 mm	Flutes	ID BGF6760	ID BGF6760VS
6	0.75	5	5.25	62	9	11.4	6.2	8	2	⋆ 153759	⋆ 153780
8	1	6.75	7	74	12	15	8.2	10	2	⋆ 153761	⋆ 153782
10	1	8.75	9	80	15	18.5	10.3	12	2	⋆ 153762	⋆ 153783
12	1	10.7	11	90	18	21.9	12.3	14	2	⋆ 153764	⋆ 153785
12	1.5	10.2	10.5	90	17.9	22.5	12.3	14	2	⋆ 153765	⋆ 153786
14	1.5	12.1	12.5	102	20.9	26	14.4	16	2	⋆ 153766	⋆ 153787
16	1.5	14.1	14.5	102	23.9	29.4	16.4	18	2	⋆ 153767	⋆ 153788

Ø D1 MF	P mm	d1 mm	d10 mm	l11 mm	l2 mm	ls mm	ds mm	d2 mm	Flutes	ID BGF6765	ID BGF6765VS
6	0.75	5	5.25	62	12	14.4	6.2	8	2	⋆ 153802	⋆ 153824
8	1	6.75	7	74	16	19	8.2	10	2	⋆ 153804	⋆ 153826
10	1	8.75	9	80	20	23.5	10.3	12	2	⋆ 153805	⋆ 153827
12	1	10.7	11	90	24	27.9	12.3	14	2	⋆ 153807	⋆ 153829
12	1.5	10.2	10.5	90	23.9	28.5	12.3	14	2	⋆ 153808	⋆ 153830
14	1.5	12.1	12.5	102	26.9	32	14.4	16	2	⋆ 153809	⋆ 153831

Inhaltsverzeichnis - Gewindelehrdorne und Gewindelehrringe
Directory - Screw thread plug and ring gauges

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

Piktogramme - Pictographs

"Gut"
"Go"

"Ausschuss"
"No-Go"

"Gut" / "Ausschuss"
"Go" / "No-Go"

Toleranz 6H, "Gut"
Tolerance 6H, "Go"

Toleranz 6G, "Gut" / "Ausschuss"
Tolerance 6G, "Go" / "No-Go"

Toleranz 6g, "Ausschuss"
Tolerance 6g, "No-Go"

Linksgewinde
Left-hand thread

Gewindelehren ab Lager lieferbar ohne Prüfzertifikat.

Auf Wunsch können diese Gewindelehren kurzfristig mit Prüfzertifikat geliefert werden, Preis für Prüfzertifikat auf Anfrage.

Für neue Gewindelehren (Neulieferung) / Messunsicherheit U95.

Alle zertifizierten Gewindelehren werden mit der auf dem entsprechenden Prüfzertifikat aufgeführten Ident-Nummer beschriftet.

Thread gauges available from stock without test certificate.

However, all gauges can be delivered in short time with test certificate on request, price for the certificate on request.

For new ordered thread gauges / Measuring uncertainty U95.

All "certified" thread gauges will be marked with the identity number of the corresponding test certificate.

M ISO DIN 13
DIN ISO 1502

D5701-1 M1 - M1.4 = 5H

D5703 M1 - M1.4 = 5H

Ø d_1 M	P mm	D5701-1 6H ID	D5701-2 6H ID	D5703 6H ID	D5703 LH 6H ID	D5703 6G 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	● 100119	● 142843			
45	4.5	● 100122	● 142844			
48	5	● 100125	● 142845			
52	5	● 100132	● 142846			
56	5.5	● 100137	● 142847			

M ISO DIN 13
DIN ISO 1502

D5704 M1 - M1.4 = 6h

D5714 M1 - M1.4 = 6h

Ø d_1 M	P mm	D5704 6g ID	D5704 LH 6g LH ID	D5704 6e ID	D5714 6g ID	D5714 6e 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	

MF ISO DIN 13 DIN ISO 1502

		D5701-1	D5703	D5703 LH	D5703		
							
		6H	6H	6H LH	6G		
Ø 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				

MF ISO DIN 13 DIN ISO 1502

		D5701-1	D5701-2	D5703			
							
		6H	6H	6H			
Ø 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				

MF ISO DIN 13
DIN ISO 1502

	D5704	D5704 LH	D5714			
						
	6g	6g LH	6g			
Ø 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					

MF ISO DIN 13
DIN ISO 1502

	D5704	D5714				
						
	6g	6g				
Ø 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		
							
		2B	2B	2A	2A		
Ø" d_1 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		
							
		2B	2B	2A	2A		
Ø" d_1 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_1 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
							
							
Ø" d_1 G	P TPI	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	
Ø d_1 PG	P TPI				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				
							
							
Ø" 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				
Ø" 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			
							
		6H$_{mod}$	3B	3B			
Ø 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					
Ø" 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				
Ø" 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			

VIEL MEHR ZU ENTDECKEN

IN UNSEREM NEUEN KATALOG FÜR GEWINDESCHNEIDWERKZEUGE, VERFÜGBAR AB ENDE 2020

MUCH MORE TO DISCOVER

IN OUR NEW THREADING TOOL CATALOGUE AVAILABLE AT THE END OF 2020

GEWINDELEHREN NANO — NANO THREAD GAUGES

GEWINDELEHRDORNE — THREAD PLUG GAUGES

MESSTECHNIK — METROLOGY

< 2.74 mm

GO

NO-GO

PRODUKTION — PRODUCTION

GO

EINSATZ

Der erste unvollständige Gewindegang und die Frontfläche der Lehre sind hochpräzise und passgenau geschliffen – eine entscheidende Voraussetzung für korrekte Messergebnisse und die Überprüfung der Gewinde auf einer grösstmöglichen Länge.

PROFILKONTROLLE

Dank unserer Kompetenz auf dem Gebiet des Schleifens können wir die perfekte Einhaltung der Toleranzen des Gewindeprofils und eine einwandfreie Oberflächenqualität gewährleisten.

NO-GO-GEWINDELEHRRING

Unsere NO-GO-Lehrringe gewährleisten eine exakte Kontrolle der Gewindeflanken von Schrauben: ihr freigestochener Aussendurchmesser verhindert Fehlmessungen durch blockierende Schrauben am Aussendurchmesser während des Prüfvorgangs.

MODULARES SYSTEM

Bei Bedarf kann die GO-Gewindelehre mit einem Verbindungsstück mit der NO-GO-Lehre zusammengeschraubt werden. In ihrer stabilen Verpackung lassen sich die Lehren sicher transportieren. Der mit Aussparungen versehene Schaumstoffeinsatz schützt die Werkzeuge vor Beschädigungen und Schmutz.

PRÜF-GEWINDELEHRDORNE — PLUG CHECK GAUGES

Der NO-GO-Prüf-Gewindelehrdorn dient zur Kontrolle des neuwertigen Lehrrings.

The NO-GO plug check gauge is the foolproofing device for the new ring gauge.

Mit dem GO-Prüf-Gewindelehrdorn überprüfen Sie die Qualität Ihres Lehrrings.

The GO plug check gauge is used to check the quality of your ring gauge.

Der Verschleisslehrdorn WEAR verlängert die Lebensdauer Ihres Lehrrings bis zu einem festgelegten Schwellenwert.

The master plug gauge WEAR will extend the service life of your ring gauge up to a certain tolerance limit.

UTILISATION

The fact that the initial turn of the screw thread and also the tip of the gauge have been ground flat ensures that the tool engages optimally in the thread, which is essential for ensuring a correct measurement.
This enables the gauge to check the thread at its maximum depth.

PROFILE CONTROL

Our expertise in the field of rectification ensures we have perfect control of tolerances for the shape of the profile and for surface textures.

NO-GO RING GAUGE

The cut-away on the exterior diameter of our NO-GO ring gauges ensures the sides of the screw can be optimally checked, eliminating the risk of any incorrect inspection caused by a blockage on the exterior diameter of the gauge.

MODULAR SYSTEM

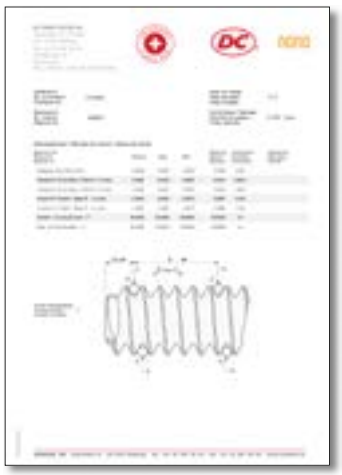
A coupling screw enables the GO gauge to be connected to the NO-GO section as required. The rigid box protects the gauges during transportation. Its moulded interior keeps the product clean and protects it from impacts.

DAS SCS-ZERTIFIKAT

Ein Zertifikat ist ein schriftlicher Nachweis über die Qualität der im Unternehmen eingesetzten Messinstrumente. DC NANO TOOLS SA (Akkreditierung SCS 0143), ein Mitglied der DC SWISS Holding, bietet Ihnen die Prüfung und Kalibrierung Ihrer Gewindelehren nach der internationalen Norm ISO 17025 an.
Diese kostenpflichtige Dienstleistung wird für Flankendurchmesser von 0.1 bis 3.0 mm und für Aussendurchmesser von 0.1 bis 3.5 mm angeboten.

Alle Lehrdorne sind SCS-zertifiziert.

ISO 17025/2005 akkreditiert © DC Nano Tools SA



SCS MEASUREMENT CERTIFICATE

A certificate is written confirmation of the quality of a company's metrological equipment. DC NANO TOOLS SA (SCS accreditation 0143), a member of the DC SWISS Group, can inspect and calibrate thread gauges for you in accordance with the ISO 17025 international standard.
This chargeable service is available for pitch diameters of 0.1 to 3.0 mm and external diameters of 0.1 to 3.5 mm.

All plug thread gauges are SCS certified.

ISO 17025/2005 accredited © DC NANO TOOLS SA

SO ERHALTEN SIE IHR KONFORMITÄTSZERTIFIKAT ONLINE

Ab sofort können Sie Ihr Konformitätszertifikat von überall direkt per Smartphone anfordern. Dazu scannen Sie einfach den QR-Code auf der Karte, die der Box beiliegt und laden die PDF-Datei im Anhang herunter.

Der mit jeder Box gelieferte Konformitätsnachweis bestätigt, dass am Ende der Fertigung eine sorgfältige Kontrolle durchgeführt wurde.

Qualitätskontrolle DC SWISS SA

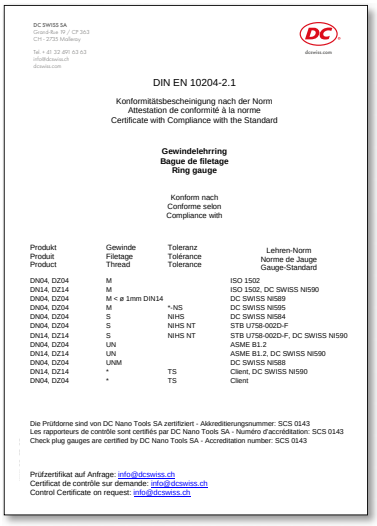
DOWNLOAD YOUR DC ATTESTATION

DOWNLOAD YOUR CONFIRMATION OF COMPLIANCE

You can now access your confirmation of compliance any time, at any place on your phone. Simply scan the QR code on the card inside the box and download the associated pdf file.

The confirmation of compliance accompanying each box confirms that the factory has scrupulously followed the post-production monitoring process.

DC SWISS SA quality control



DIN EN 10204-2.1

Konformitätsbescheinigung nach der Norm
Attestation de conformité à la norme
Certificate with Compliance with the Standard

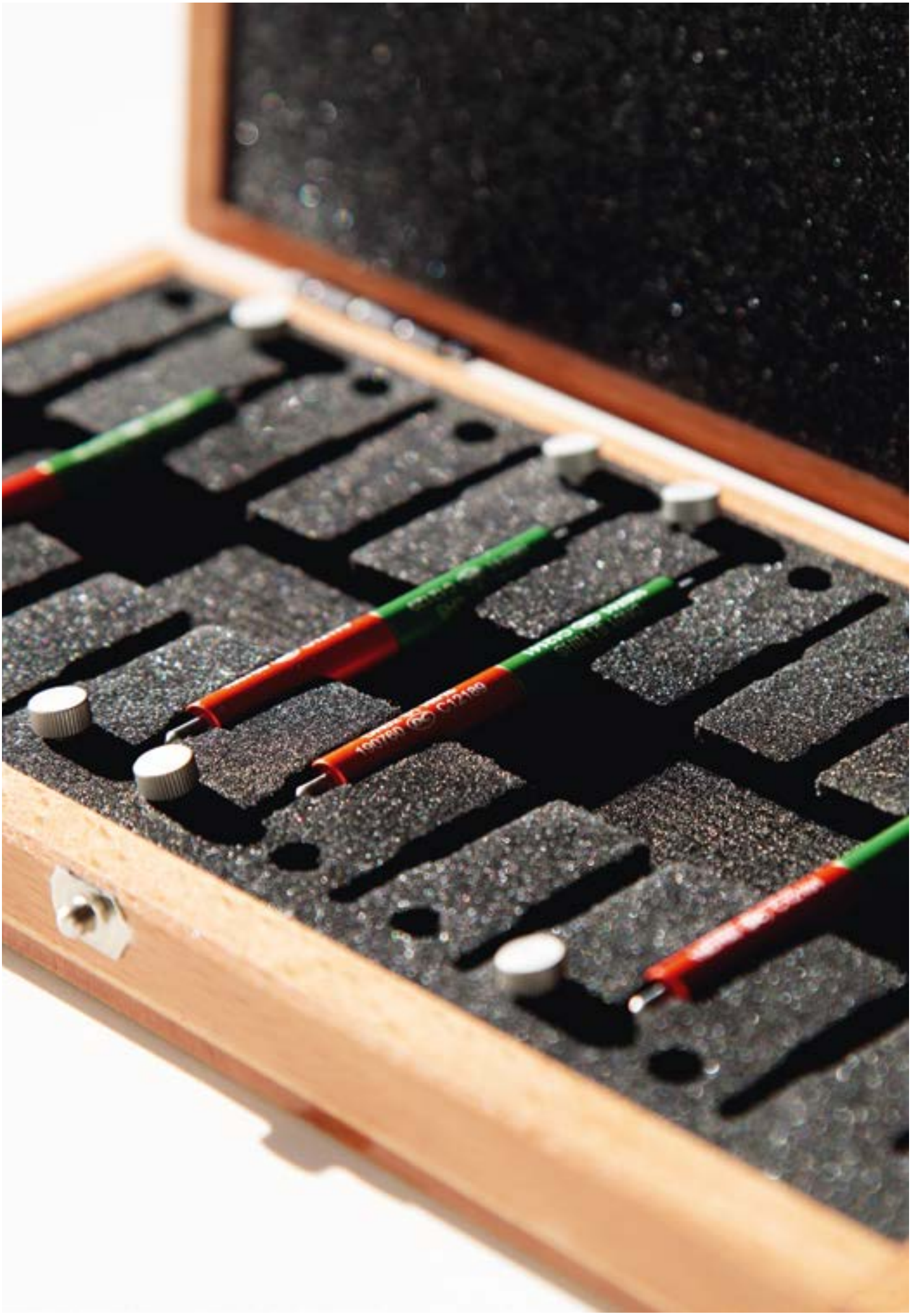
Gewindelehrring
Bague de filetage
Ring gauge

Konform nach
Conforme selon
Compliance with

Produkt Produit Product	Gewinde Filetage Thread	Toleranz Tolérance Tolerance	Lehren-Norm Norme de Jauge Gauge-Standard
DN04, DZ04	M		ISO 1502
DN14, DZ14	M		ISO 1502, DC SWISS NI590
DN04, DZ04	M < ø 1mm DIN14		DC SWISS NI589
DN04, DZ04	M	*-NS	DC SWISS NI595
DN04, DZ04	S	NIHS	DC SWISS NI584
DN04, DZ04	S	NIHS NT	STB U758-002D-F
DN14, DZ14	S	NIHS NT	STB U758-002D-F, DC SWISS NI590
DN04, DZ04	UN		ASME B1.2
DN14, DZ14	UN		ASME B1.2, DC SWISS NI590
DN04, DZ04	UNM		DC SWISS NI588
DN14, DZ14	*	TS	Client, DC SWISS NI590
DN04, DZ04	*	TS	Client

Die Prüfdorne sind von DC Nano Tools SA zertifiziert - Akkreditierungsnummer: SCS 0143
Les rapporteurs de contrôle sont certifiés par DC Nano Tools SA - Numéro d'accréditation: SCS 0143
Check plug gauges are certified by DC Nano Tools SA - Accreditation number: SCS 0143

Prüfzertifikat auf Anfrage: info@dcswiss.ch
Certificat de contrôle sur demande: info@dcswiss.ch
Control Certificate on request: info@dcswiss.ch



VERFÜGBARE SETS — AVAILABLE SETS

GEWINDELEHRDORNE DN / GEWINDELEHRRINGE DN
THREAD PLUG GAUGES & RING GAUGES DN

EINHEITS-SET — SINGLE SET

GEWINDELEHRRINGE DZ
THREAD RING GAUGES DZ

EINHEITS-SET — SINGLE SET

GEWINDELEHRDORNE DN / GEWINDELEHRRINGE DN
PLUG GAUGES DN / RING GAUGES DN

10- ODER 20-TEILIGES SET
SET OF 10 OR 20 ITEMS

Für jedes Set können Sie die gewünschte Anzahl GO / NO-GO-Gewindelehren bestimmen.

Wenden Sie sich gerne an uns wenn Sie eine andere Zusammenstellung wünschen.

You can select the exact number of GO / NO-GO thread gauges for each set.

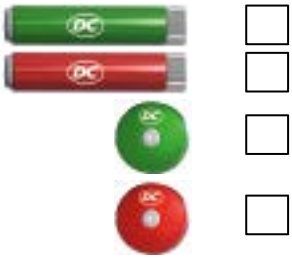
Contact us for any other set compositions.

dcswiss.com / sales@dcswiss.ch / +41 32 491 63 63

BESTELLUNG NANO-GEWINDELEHREN — NANO THREAD GAUGES ORDER

WERKZEUGTYP — TOOL TYPE

☐
☐
☐



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MERKMALE — CHARACTERISTICS

ABMESSUNG DIMENSION	*TOLERANZ* TOLERANCE	*NORM* NORM	*MENGE* QUANTITY	*SPEZIELLES* SPECIFICS

BEMERKUNGEN — REMARKS

LIEFERINFORMATIONEN — DELIVERY INFORMATION

Bitte visieren Sie Ihre Bestellung.
Thank you for initialing your order.

dcswiss.com / info@dcswiss.ch / +41 32 491 63 63

Inhaltsverzeichnis - Gewindelehren NANO für die Mikromechanik und die Uhrenindustrie
Directory - Thread gauges NANO for micromechanics and watchmaking

		Gewindelehrdorne Thread plug gauges			*Gewindelehrringe* Thread ring gauges				*Prüf-Gewindelehrdorne* Plug check gauges			
Typ Type		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
Merkmale Characteristics												
												
M 4H / 5h	ISO DIN 14 ISO DIN 13		158	158	164	164	169	169	174	174	179	179
M 6H / 6g	ISO DIN 13		158	158	164	164	169	169	174	174	179	179
M 5H / 6h	ISO DIN 13		158	158	164	164	169	169	174	174	179	179
MF 4H / 4h	ISO DIN 13		159	159	165	165	170	170				
MF 6H / 6g	ISO DIN 13		159	159	165	165	170	170	175	175	180	180
MF 6h	ISO DIN 13				165	165	170	170	175	175	180	180
UNC 2B / 2A	ASME B1.1		160	160	166	166	171	171	176	176	181	181
UNC 3B / 3A	ASME B1.1		160	160	166	166	171	171	176	176	181	181
UNF 2B / 2A	ASME B1.1		160	160	166	166	171	171	176	176	181	181
UNF 3B / 3A	ASME B1.1		160	160	166	166	171	171	176	176	181	181
S NIHS 3G	NIHS	161										
S NIHS 4H	NIHS		161									
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S NIHS	NIHS				167	167	172	172	177	177	182	182
S NIHS NT	NIHS		162	162	167	167	172	172	177	177	182	182
SF NIHS 3G	NIHS	163										
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		Abnutzungsprüfdorne Master plug gauges WEAR		*Kalibrier-Gewindelehrdorne* Calibration thread plug gauges
Typ Type		RN05-3 WEAR	RN15-3 WEAR	EN00
Merkmale Characteristics				
				
M 4H / 5h	ISO DIN 14 ISO DIN 13			
M 6H / 6g	ISO DIN 14 ISO DIN 13	184	184	
M 5H / 6h	ISO DIN 13	184	184	
MF 4H / 4h	ISO DIN 13			
MF 6H / 6g	ISO DIN 13	185	185	
MF 6h	ISO DIN 13	185	185	
S NIHS	NIHS			186

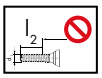
Piktogramme - Pictographs

"Gut"
"Go"

"Ausschuss"
"No-Go"

6H — *Toleranz 6H, "Gut"*
Tolerance 6H, "Go"

6g — *Toleranz 6g, "Ausschuss"*
Tolerance 6g, "No-Go"



Max. Messlänge l2 darf nicht überschritten werden
Max. measuring length l2 must not be exceeded

PHYN. KL — *Phynox KL*
Phynox KL

LH — *Alle Gewindelehren sind auf Anfrage auch für Linksgewinde lieferbar*
All gauges can be supplied with a left-hand thread upon request

Einsatz — Use

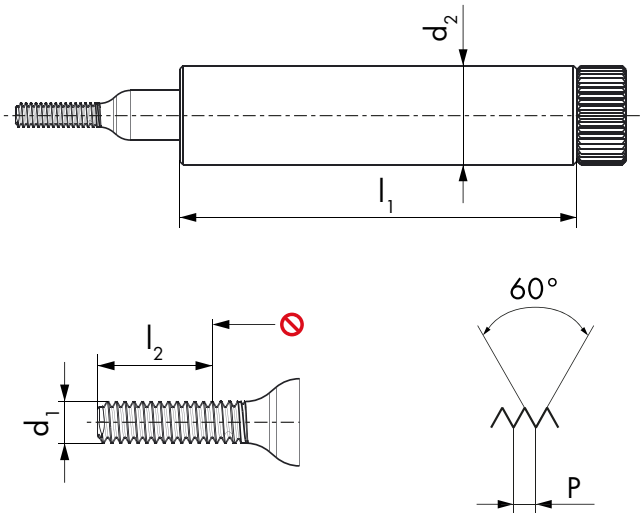
RN05-1
RN05-2

→ DN04/DZ04

RN15-1
RN15-2

→ DN14/DZ14

nano



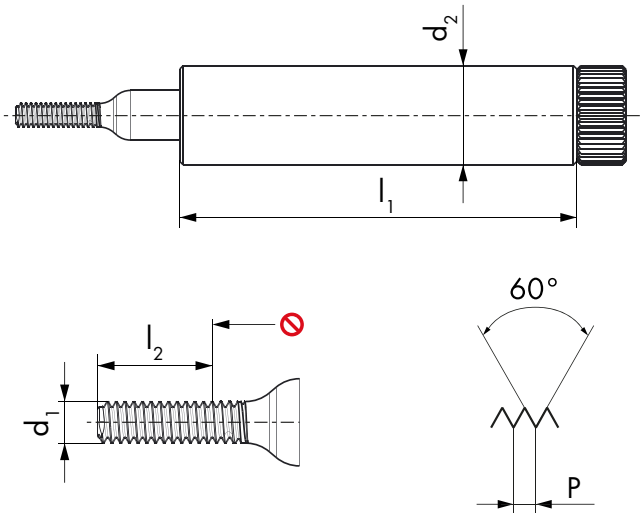
DN01 GO	DN02 NO-GO	DN01 GO	DN02 NO-GO
			
4H	4H	6H	6H

Ø 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 [1]	● 191424 [1]
1.2	0.25	24	3.6	6	● 191114	● 191128	● 191422 [1]	● 191425 [1]
1.4	0.3	24	4.2	6	● 191115	● 191129	● 191423 [1]	● 191426 [1]
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

[1] Tol. 5H

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

nano



Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2	DN01 GO 4H ID	DN02 NO-GO 4H ID	DN01 GO 6H ID	DN02 NO-GO 6H 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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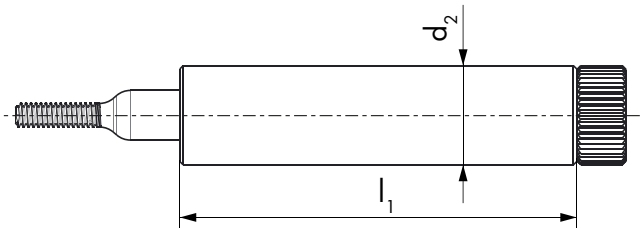
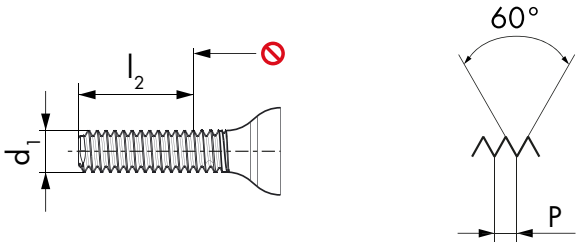
UNC, UNF ASME B1.1 ASME B1.2

VHM CAR

nano





Ø d_1 UNC	P TPI	Ø d_1 mm	l_1 mm	l_2 GO mm	d_2	DN01 GO 2B ID	DN02 NO-GO 2B ID	DN01 GO 3B ID	DN02 NO-GO 3B 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

Ø d_1 UNF	P TPI	Ø d_1 mm	l_1 mm	l_2 GO mm	d_2	DN01 GO 2B ID	DN02 NO-GO 2B ID	DN01 GO 3B ID	DN02 NO-GO 3B 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

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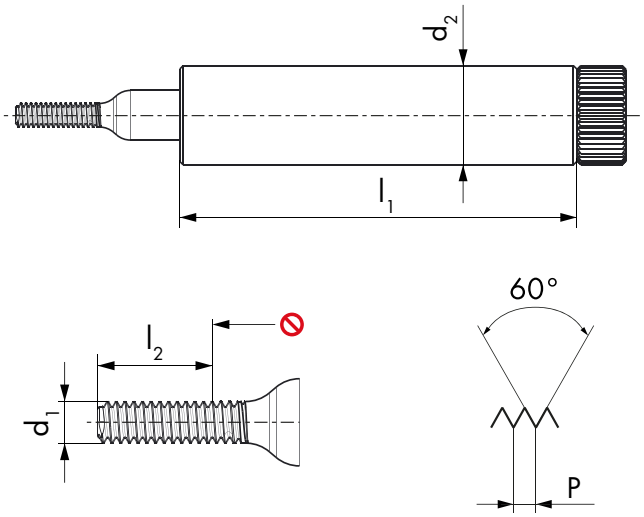
nano



NIHS 3G | NIHS 4H | NIHS 4H/3G

Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2	DN01 GO ID	DN01 GO ID	DN02 NO-GO ID
0.3	0.08	24	0.9	6	190733	193242	190752
0.35	0.09	24	1.05	6	190734	193243	190753
0.4	0.1	24	1.2	6	190735	193244	190754
0.5	0.125	24	1.5	6	190736	193245	190755
0.6	0.15	24	1.8	6	190737	193246	190756
0.7	0.175	24	2.1	6	190738	193247	190757
0.8	0.2	24	2.4	6	190739	193248	190758
0.9	0.225	24	2.7	6	190740	193249	190759
1	0.25	24	3	6	190741	193250	190760
1.2	0.25	24	3.6	6	190742	193251	190761
1.4	0.3	24	4.2	6	190743	193252	190762

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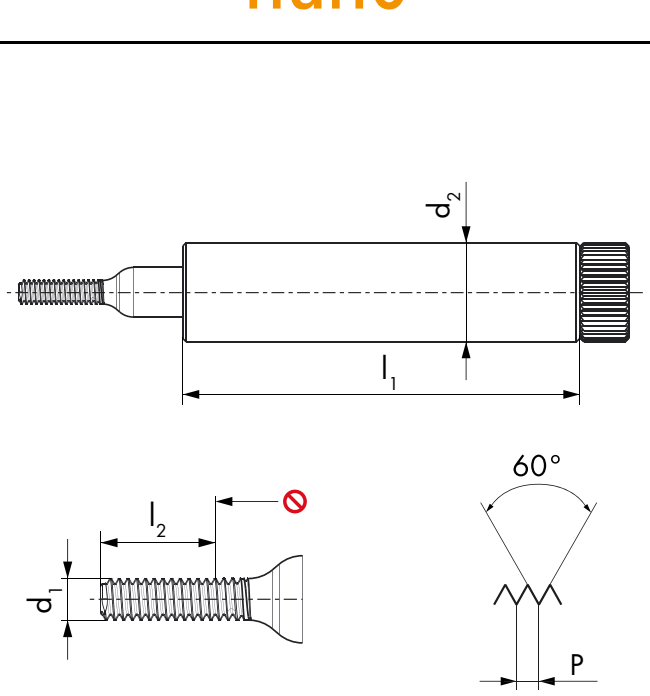
S NIHS NT
STB U758-002D-F

VHM CAR

nano

DN01 GO	DN02 NO-GO		



NIHS NT NIHS NT

Ø 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

[1] Tol. 5H

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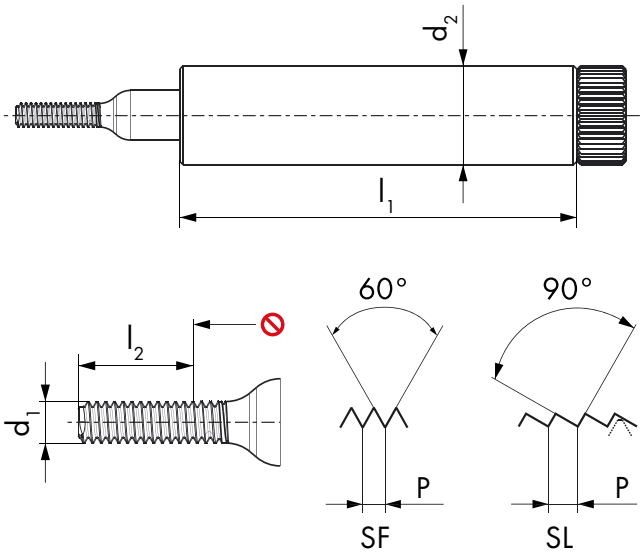
SF NIHS
DC SWISS NI584

SL SL 15-01
SAFELOCK NI586

VHM CAR

nano



DN01 GO	DN01 GO	DN02 NO-GO	
			

					NIHS 3G	NIHS 4H	NIHS 4H/3G
Ø 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

Ø 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

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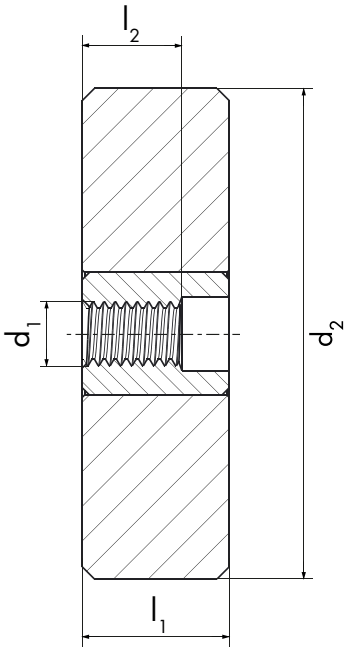
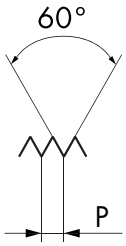
M ISO DIN 14 / ISO DIN 13
DC SWISS NI589 / ISO 1502

PHYN. KL

nano





DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO

5h	5h	6g	6g

Ø 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 [1]	● 191476 [1]
1.2	0.25	6	1.8	20			● 191474 [1]	● 191477 [1]
1.4	0.3	6	2.1	20			● 191475 [1]	● 191478 [1]
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

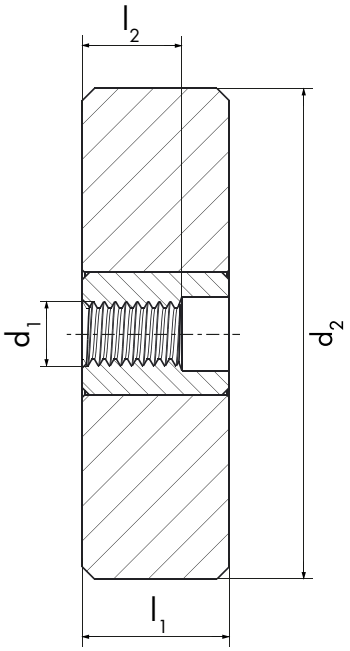
[1] Tol. 6h

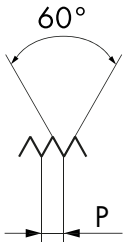
All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges. The paid certificate is available on request.

MF ISO DIN 13 ISO 1502

PHYN. KL

nano





DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO

4h	4h	6g	6g

Ø 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 [1]	● 192871 [1]
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

[1] Tol. 6h

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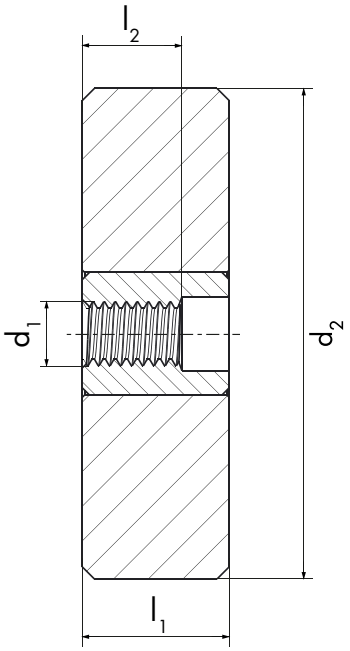
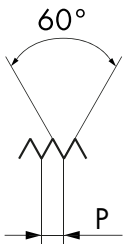
UNC, UNF ASME B1.1 ASME B1.2

PHYN. KL

nano





	DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO
				
	2A	2A	3A	3A

Ø d_1 UNC	P TPI	Ø 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

Ø d_1 UNF	P TPI	Ø 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

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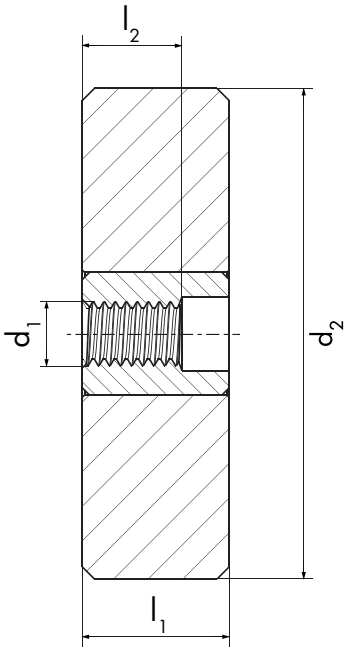
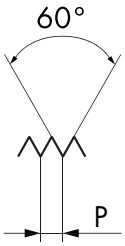
S NIHS / NIHS NT
DC SWISS NI584 / STB U758-002D-F

PHYN. KL

nano





DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO

NIHS	NIHS	NIHS NT	NIHS NT

Ø 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

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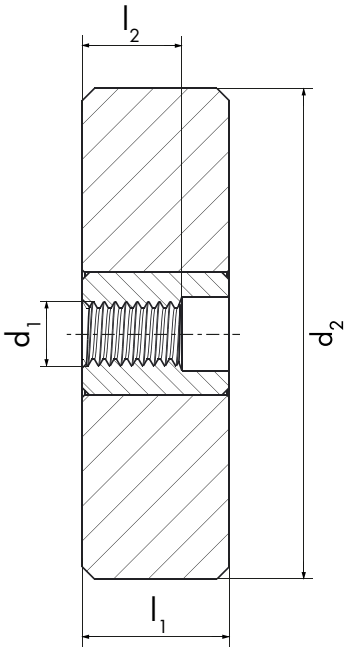
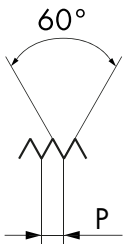
SF NIHS
DC SWISS NI584

PHYN. KL

nano

DZ04 GO	DZ14 NO-GO		



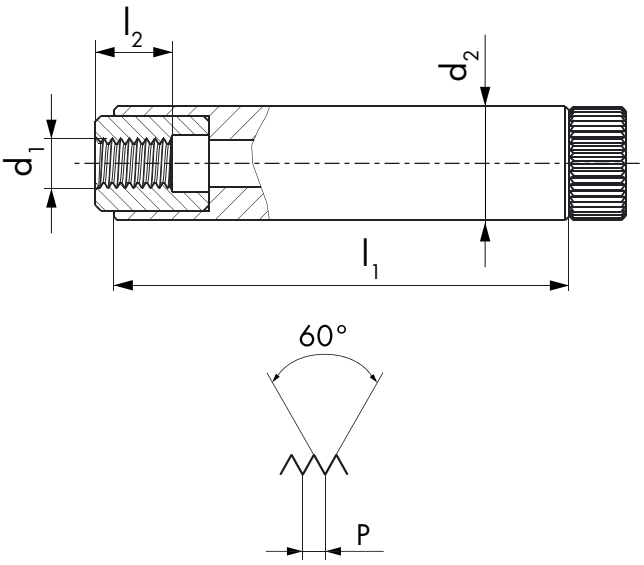


NIHS NIHS

Ø 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
			
5h	5h	6g	6g

Ø 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 [1]	● 191450 [1]
1.2	0.25	24	1.8	6			● 191448 [1]	● 191451 [1]
1.4	0.3	24	2.1	6			● 191449 [1]	● 191452 [1]
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

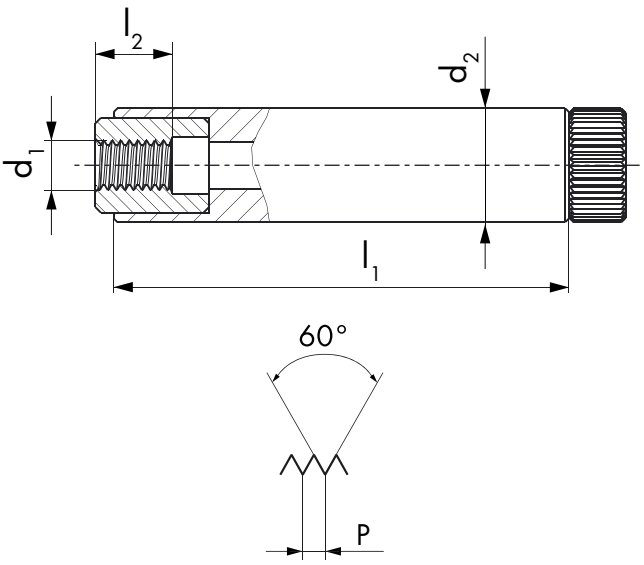
[1] Tol. 6h

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

MF ISO DIN 13 ISO 1502

PHYN. KL

nano



DN04 GO	DN14 NO-GO	DN04 GO	DN14 NO-GO
			
4h	4h	6g	6g

Ø 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 [1]	192829 [1]
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

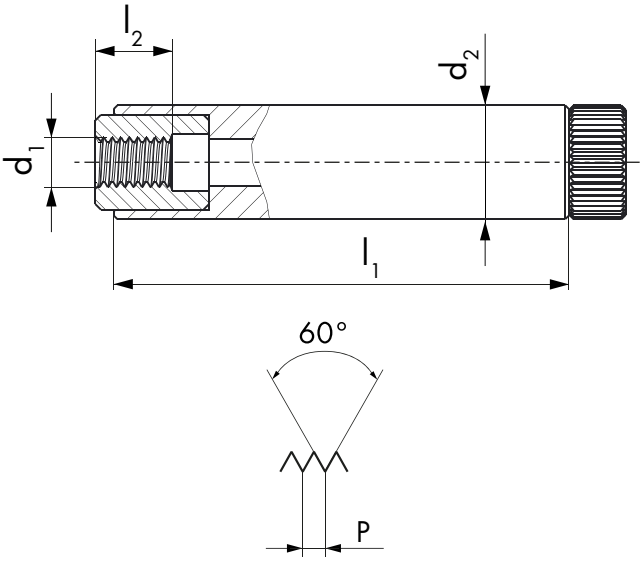
[1] Tol. 6h

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



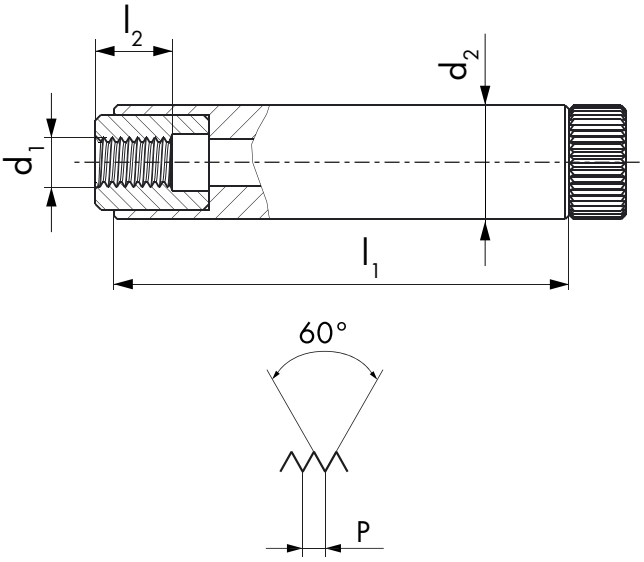
	DN04 GO	DN14 NO-GO	DN04 GO	DN14 NO-GO
				
	2A	2A	3A	3A

Ø d_1 UNC	P TPI	Ø 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

Ø d_1 UNF	P TPI	Ø 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.

nano



DN04 GO	DN14 NO-GO	DN04 GO	DN14 NO-GO
			
NIHS	NIHS	NIHS NT	NIHS NT

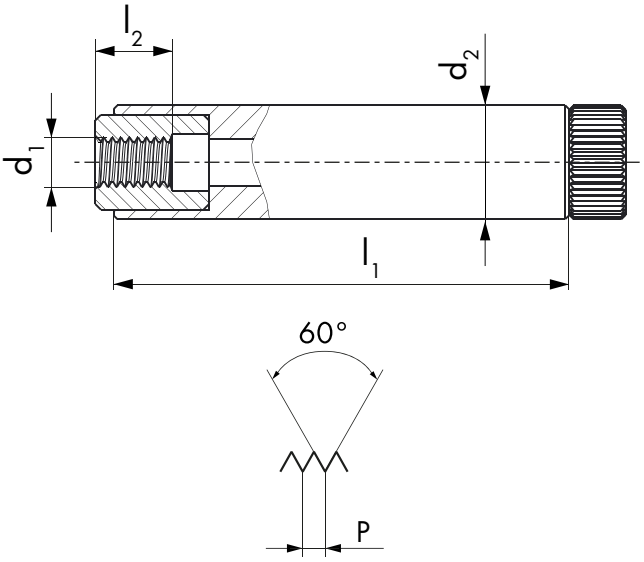
Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2	ID	ID	ID	ID
0.5	0.125	24	0.75	6	190888	190907	190926	190945
0.6	0.15	24	0.9	6	190889	190908	190927	190946
0.7	0.175	24	1.05	6	190890	190909	190928	190947
0.8	0.2	24	1.2	6	190891	190910	190929	190948
0.9	0.225	24	1.35	6	190892	190911	190930	190949
1	0.25	24	1.5	6	190893	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.

SF NIHS
DC SWISS NI584

PHYN. KL

nano

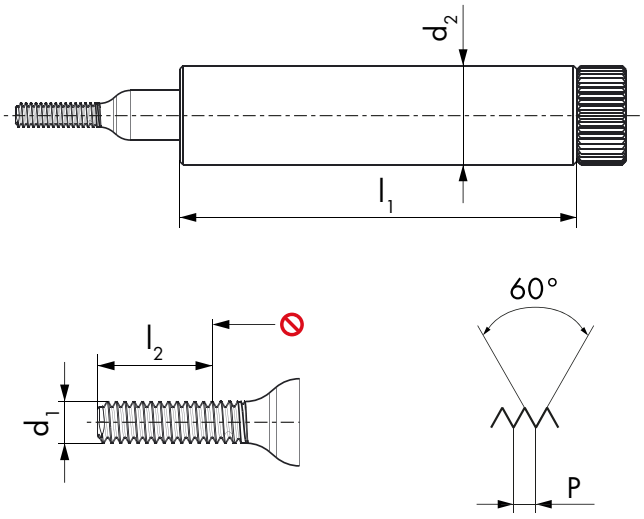


DN04 GO	DN14 NO-GO		
			

Ø d_1 SF	P mm	l_1 mm	l_2 GO mm	d_2	ID NIHS	ID NIHS
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.

nano



RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO

5h	5h	6g	6g

Ø 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 [1]	● 191508 [1]
1.2	0.25	24	2.3	6			● 191500 [1]	● 191509 [1]
1.4	0.3	24	2.7	6			● 191501 [1]	● 191510 [1]
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

[1] Tol. 6h

SCS certificate included.

MF ISO DIN 13 ISO 1502

VHM CAR

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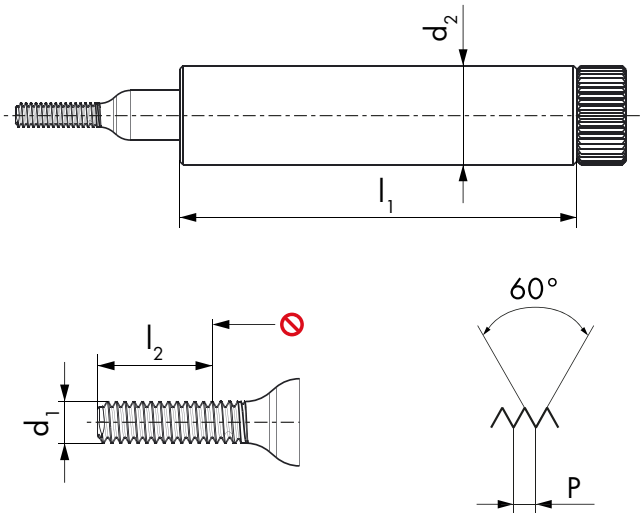

RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO
			
6h	6h	6g	6g

Ø 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

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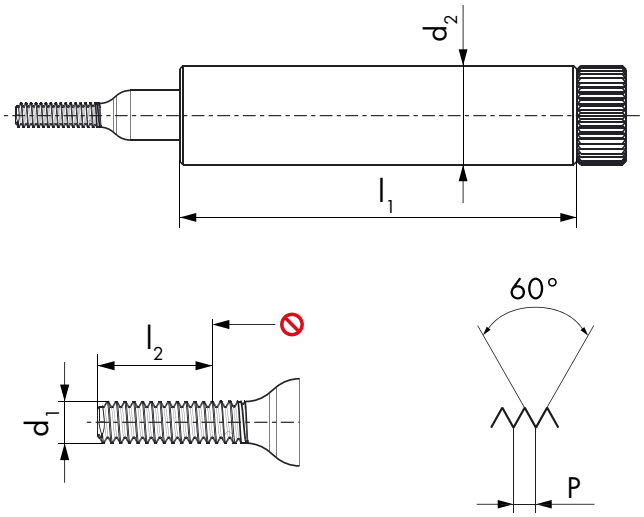


	RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO
				
	2A	2A	3A	3A

Ø d_1 UNC	P TPI	Ø″ 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

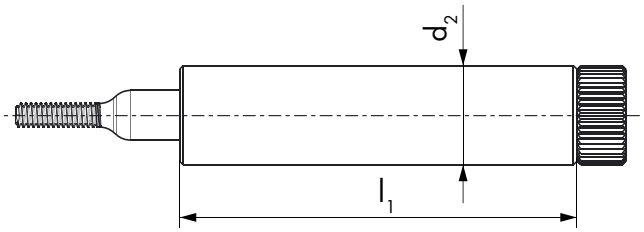
Ø d_1 UNF	P TPI	Ø″ d_1 mm	l_1 mm	l_2 GO mm	d_2	ID	ID	ID	ID
0	80	1.524	24	2.92	6	● 191685	● 191693	● 191701	● 191709
1	72	1.854	24	3.49	6	● 191686	● 191694	● 191702	● 191710
2	64	2.184	24	4.07	6	● 191687	● 191695	● 191703	● 191711
3	56	2.515	24	4.68	6	● 191688	● 191696	● 191704	● 191712

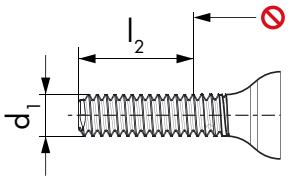
SCS certificate included.

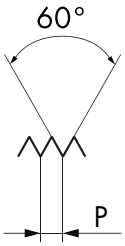
S NIHS / NIHS NT
DC SWISS NI584 / DC SWISS NI585

VHM CAR

nano







RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO
			
NIHS	NIHS	NIHS NT	NIHS NT

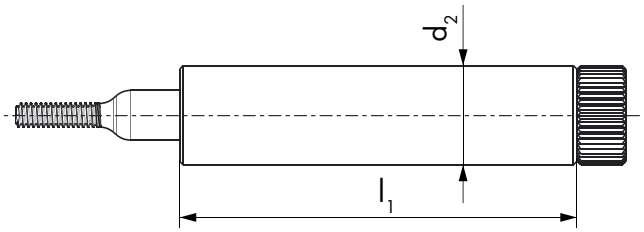
Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2	ID	ID	ID	ID
0.3	0.08	24	0.61	6	190961	190999	191037	191075
0.35	0.09	24	0.71	6	190962	191000	191038	191076
0.4	0.1	24	0.8	6	190963	191001	191039	191077
0.5	0.125	24	1	6	190964	191002	191040	191078
0.6	0.15	24	1.2	6	190965	191003	191041	191079
0.7	0.175	24	1.4	6	190966	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

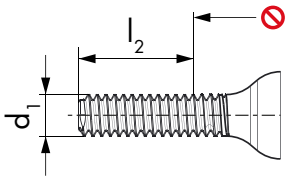
SCS certificate included.

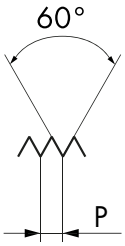
SF NIHS / NIHS NT
DC SWISS NI584 / DC SWISS NI585

VHM CAR

nano





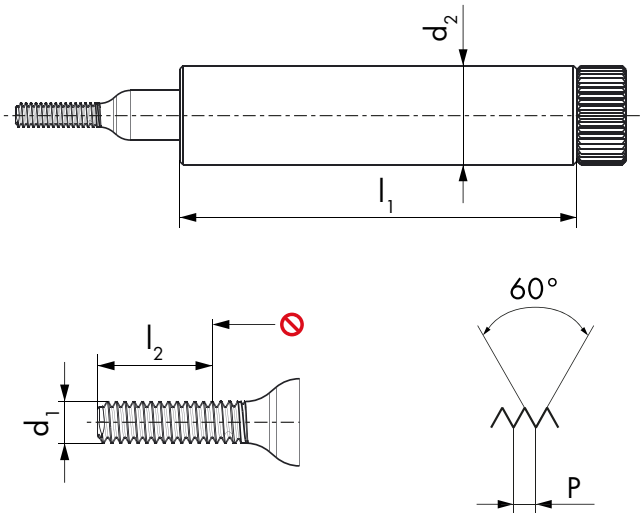


RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO
			
NIHS	NIHS	NIHS NT	NIHS NT

Ø 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.

nano



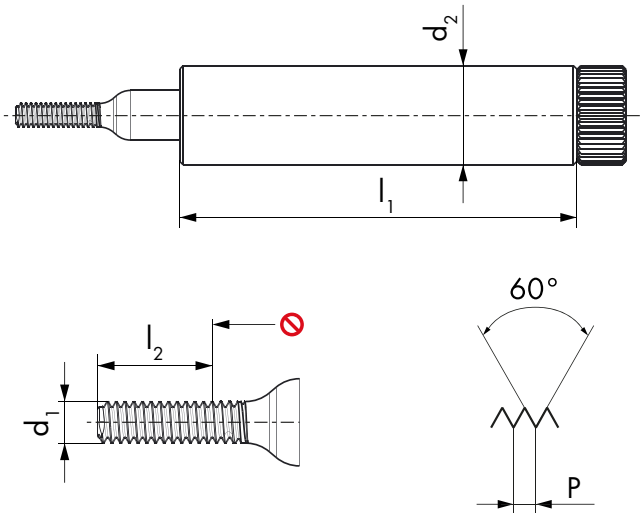
RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO
			
5h	5h	6g	6g

Ø 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 [1]	● 191511 [1]
1.2	0.25	24	2.3	6			● 191503 [1]	● 191512 [1]
1.4	0.3	24	2.7	6			● 191504 [1]	● 191513 [1]
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

[1] 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

Ø 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

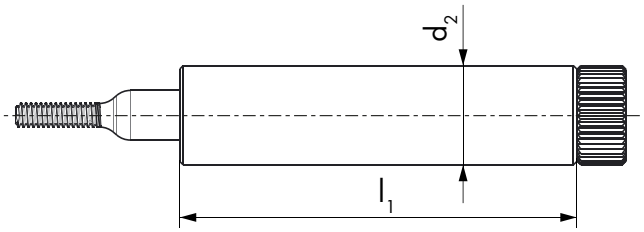
SCS certificate included.

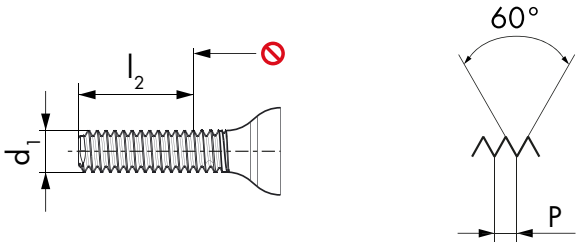
UNC, UNF

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

Ø d_1 UNC	P TPI	Ø 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

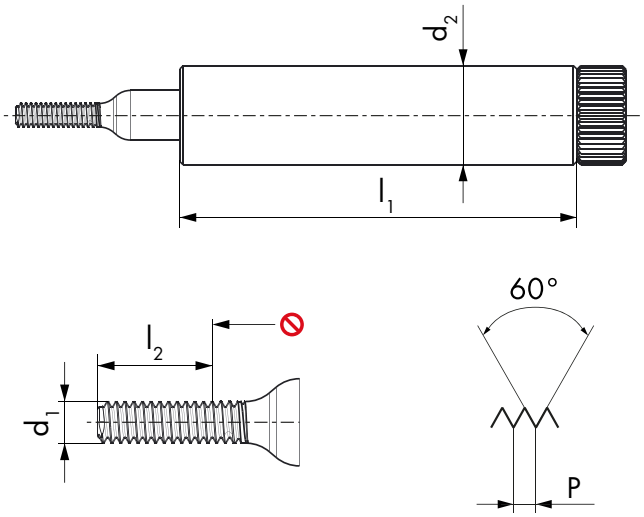
Ø d_1 UNF	P TPI	Ø d_1 mm	l_1 mm	l_2 GO mm	d_2	ID	ID	ID	ID
0	80	1.524	24	2.92	6	● 191689	● 191697	● 191705	● 191713
1	72	1.854	24	3.49	6	● 191690	● 191698	● 191706	● 191714
2	64	2.184	24	4.07	6	● 191691	● 191699	● 191707	● 191715
3	56	2.515	24	4.68	6	● 191692	● 191700	● 191708	● 191716

SCS certificate included.

S NIHS / NIHS NT
DC SWISS NI584 / DC SWISS NI585

VHM CAR

nano



RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO
			
NIHS	NIHS	NIHS NT	NIHS NT

Ø 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.

SF NIHS / NIHS NT
DC SWISS NI584 / DC SWISS NI585

VHM CAR

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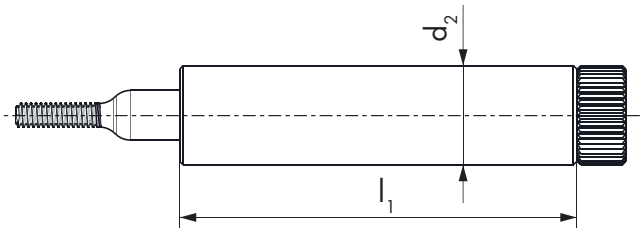

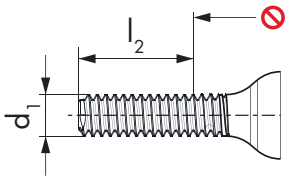

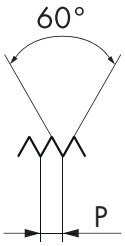

	RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO
				
	NIHS	NIHS	NIHS NT	NIHS NT

Ø 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.

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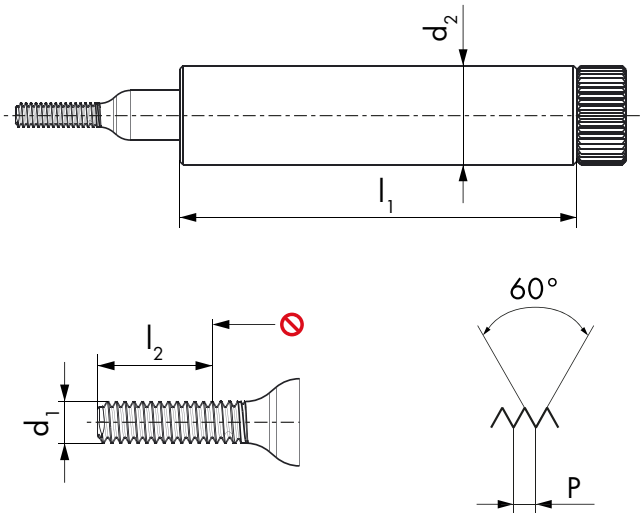
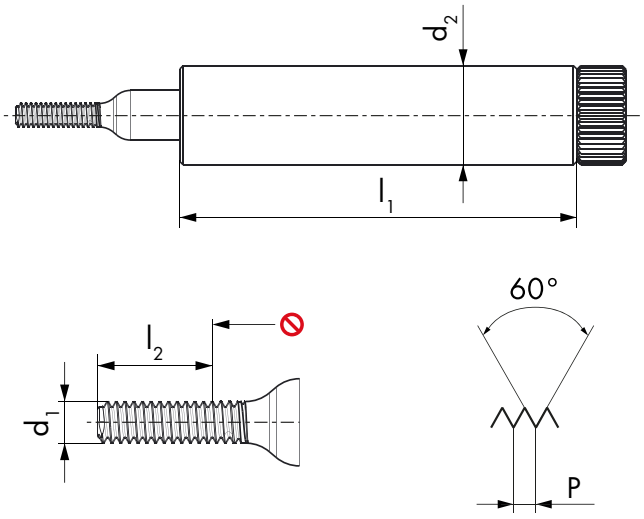


RN05-3 WEAR	RN15-3 WEAR	RN05-3 WEAR	RN15-3 WEAR
			
6h	6h	6g	6g

Ø 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

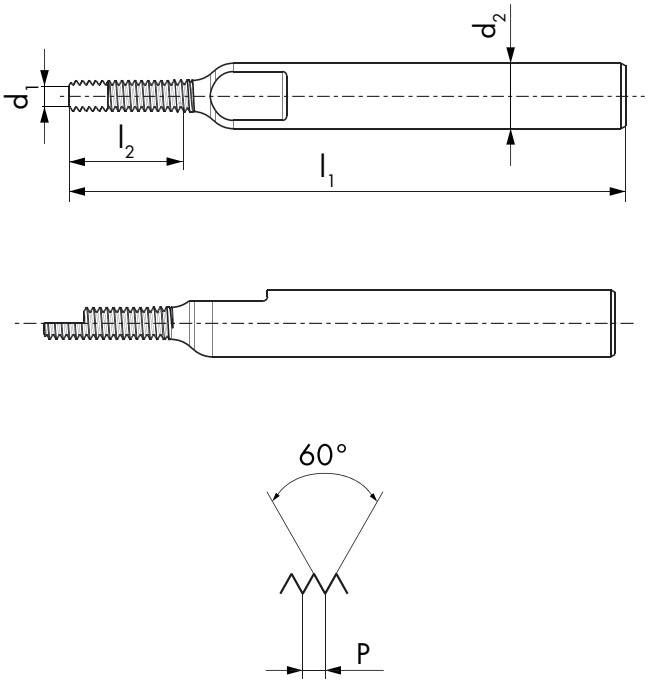


RN05-3 WEAR	RN15-3 WEAR	RN05-3 WEAR	RN15-3 WEAR
			
6h	6h	6g	6g

Ø 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	● 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

Ø 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

Der DC SWISS Kalibrier-Gewindelehrdorn wird zur Eichung von Messmaschinen verwendet. Die Kalibrierlehren aus unserem Katalog, oder nach Ihren spezifischen Anforderungen gefertigt, werden mit einem SCS-Messzertifikat geliefert. Dieses bestätigt, dass der Kontrollprozess während der Herstellung gewissenhaft gemäß ISO 17025 erfolgt ist. Es bescheinigt die Qualität der messtechnischen Ausrüstung der DC NANO TOOLS SA (SCS 0143), Kompetenzzentrum und Mitglied der DC-Gruppe.

The DC SWISS calibration thread plug gauge is used for the calibration of measuring machines. The calibration gauges from our catalogue, or made to your specific requirements, are delivered with a SCS measurement certificate. This confirms that the control process during production has been conscientiously followed to ISO 17025. It attests to the quality of the metrological equipment of DC NANO TOOLS SA (SCS 0143), centre of competence and member of the DC Group.

SCS certificate included.

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HÄRTEVERGLEICHSTABELLE — HARDNESS CHART

HRC *Rockwellhärte* Hardness Rockwell	HB *Brinellhärte* Hardness Brinell	HV *Vickershärte* Hardness Vickers	N/mm² Mpa *Zugfestigkeit* Tensile strength
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	

Umrechnungstabelle für Härtewerte, Auszug aus ISO EN 18265; 2003 / früher DIN 50150. Gerundete Werte.
Conversion chart for hardness values, extract from ISO EN 18265; 2003 / formerly DIN 50150. Rounded values.

ZOLL-MM — INCHES-MM

Ø" d_1	Ø mm	TPI UN UNC	UNF	UNEF	4	6	8	12	16	20	28	32	W(BSW)	BSF	G (BSP) Rp	Ø mm
0	1.52		80										48			
1/16"	1.59														28	7.72
1	1.85	64	72													
2	2.18	56	64													
3/32"	2.38															
3	2.51	48	56													
4	2.84	40	48													
5	3.17	40	44													
1/8"	3.17												40		28	9.72
6	3.50	32	40													
5/32"	3.96												32			
8	4.16	32	36													
3/16"	4.76												24	32		
10	4.82	24	32													
12	5.48	24	28	32												
7/32"	5.55												24	28		
1/4"	6.35	20	28	32									20	26	19	13.15
9/32"	7.14													26		
5/16"	7.93	18	24	32						20	28					
3/8"	9.52	16	24	32						20	28		16	20	19	16.66
7/16"	11.11	14	20	28					16			32	14	18		
1/2"	12.70	13	20	28					16			32	12	16	14	20.95
9/16"	14.28	12	18	24					16	20	28	32	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					16		28	32	8	10	11	33.24
1 1/16"	26.99			18			8	12	16	20	28					
1 1/8"	28.57	7	12	18			8		16	20	28		7	9	11	37.89
1 3/16"	30.16			18			8	12	16	20	28					
1 1/4"	31.75	7	12	18			8		16	20	28		7	9	11	41.91
1 5/16"	33.34			18			8	12	16	20	28					
1 3/8"	34.92	6	12	18			8		16	20	28		6	8	11	44.32
1 7/16"	36.51			18		6	8	12	16	20	28					
1 1/2"	38.10	6	12	18			8		16	20	28		6	8	11	47.80
1 9/16"	39.69			18		6	8	12	16	20						
1 5/8"	41.28			18		6	8	12	16	20			5	8		
1 11/16"	42.86			18		6	8	12	16	20						
1 3/4"	44.45	5				6	8	12	16	20			5	7	11	53.74
1 13/16"	46.04					6	8	12	16	20						
1 7/8"	47.63					6	8	12	16	20			4 1/2			
1 15/16"	49.21					6	8	12	16	20						
2"	50.80	4 1/2				6	8	12	16	20			4 1/2	7	11	59.61
2 1/8"	53.97					6	8	12	16	20						
2 1/4"	57.15	4 1/2				6	8	12	16	20			4	6	11	65.71
2 3/8"	60.32					6	8	12	16	20						
2 1/2"	63.50	4				6	8	12	16	20			4	6	11	75.18
2 5/8"	66.67				4	6	8	12	16	20						
2 3/4"	69.85	4				6	8	12	16	20			3 1/2	6	11	81.53
2 7/8"	73.02				4	6	8	12	16	20						
3"	76.20	4				6	8	12	16	20			3 1/2	5	11	87.88
3 1/8"	79.37				4	6	8	12	16							
3 1/4"	82.55	4				6	8	12	16				3 1/4	5	11	93.98
3 3/8"	85.72				4	6	8	12	16							
3 1/2"	88.90	4				6	8	12	16				3 1/4	4 1/2	11	100.33
3 5/8"	92.07				4	6	8	12	16							
3 3/4"	95.25	4				6	8	12	16				3	4 1/2	11	106.68
3 7/8"	98.42				4	6	8	12	16							
4"	101.60	4				6	8	12	16				3	4 1/2	11	113.03

UMRECHNUNGSTABELLE — CONVERSION TABLE

Ø d_1	Vc m/min															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
	min^{-1}															
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

KERNLOCHBOHRUNGEN — CORE HOLES

M ISO DIN 14 4H5H (*empfohlen* / recommended)

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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

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

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
***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

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

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
***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

KERNLOCHBOHRUNGEN — CORE HOLES

MF DIN 13, ISO 261, 6H

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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

KERNLOCHBOHRUNGEN — CORE HOLES

UNF ASME B1.1, 2B

ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	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	*Kern-Ø Mutter* - Core Ø nut		
d_1	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	*Kern-Ø Mutter* - Core Ø nut		
d_1	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	*Kern-Ø Mutter* - Core Ø nut		
d_1	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	*Kern-Ø Mutter* - Core Ø nut		
d_1	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

KERNLOCHBOHRUNGEN — CORE HOLES

G (BSP) DIN EN ISO 228

ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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, (DIN11 - 1970)

ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
(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	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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 (*Standardtoleranz* - standard tol.)

ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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 (*Standardtoleranz* - standard tol.)

ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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

AUSSENDURCHMESSER — TURNED DIAMETERS

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

Ø	P	Aussen-Ø Bolzen Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
*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	Aussen-Ø Bolzen Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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

MF DIN 13, ISO 261, 6g

Ø	P	Aussen-Ø Bolzen Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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

AUSSENDURCHMESSER — TURNED DIAMETERS

MF DIN 13, ISO 261, 6g

Ø	P	*Aussen-Ø Bolzen* Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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

UNC ASME B1.1, 2A

Ø"	P	P	*Aussen-Ø Bolzen* Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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

UNF ASME B1.1, 2A

Ø"	P	P	*Aussen-Ø Bolzen* Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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

UNEF ASME B1.1, 2A

Ø"	P	P	*Aussen-Ø Bolzen* Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	*Aussen-Ø Bolzen* Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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

AUSSENDURCHMESSER — TURNED DIAMETERS

UN ASME B1.1, 2A

ø"	P	P	Aussen-Ø Bolzen Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	Aussen-Ø Bolzen Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	Aussen-Ø Bolzen Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	Aussen-Ø Bolzen Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	Aussen-Ø Bolzen Thread outside Ø		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
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	Aussen-Ø Bolzen Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
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

TECHNISCHER FRAGEBOGEN

GEWINDEFRÄSEN UND GEWINDEWIRBELN

Angebotsanfrage ☐ Versuchsresultat ☐ Beanstandung ☐

Vertretung : _____ Kontaktperson : _____

Kunde : _____ E-Mail : _____

Tel.- /Fax-Nr : _____ Datum : _____

1. Werkzeug-Typ : _____

Nenn-Ø : _____ Steigung : _____

Serie : _____ Beschichtung : _____

2. Werkstoffgruppe : _____

Werkstoff-Nr : _____ Härte : _____ N/mm^2 /HB/HRC

Norm : _____ Bruchdehnung : _____ %

3. Gewinde : ☐Innen ☐Aussen **Lochart :** ☐Sackloch ☐Durchgangsloch

Gewindelänge : _____ mm

Kernloch-Ø : _____ Tiefe : _____ mm

Aufbohrungs-Ø : _____ Tiefe : _____ mm

4. Schnittgeschwindigkeit (V_c) : _____ m/min _____ 1/min

Vorschub (f) : _____ mm/U **Vorschub (f_z) :** _____ mm/Zahn

5. Maschine : _____ ☐Innenkühlung

Arbeitsrichtung : ☐horizontal ☐vertikal

Werkzeugaufnahme : ☐Spannzange ☐Weldon / Whistle Notch ☐Hydrodehnspannfutter ☐Schrumpffutter

6. Schmierung : ☐Emulsion ☐Schneidöl ☐Luft ☐MMS

Produkt : _____

7. Grund des Werkzeugwechsels ☐Werkzeugverschleiss ☐Werkzeugbruch ☐Gewinde nicht korrekt (kontrolliert mit Lehre) ☐Maschinenfehler

8. Standzeitvergleich

Vergleichswerkzeug : _____

Resultat und Befund : _____

Bemerkungen : _____

Kopie senden an : DC SWISS SA - CH-2735 Malleray info@dcswiss.ch

TECHNICAL QUESTIONNAIRE

THREAD MILLING AND THREAD WHIRLING

Enquiry ☐ Test result ☐ Complaint ☐

Agency : _____ Contact : _____

Customer : _____ E-mail : _____

Phone or fax : _____ Date : _____

1. Tool type : _____

Tool Ø : _____ Pitch : _____

Serie : _____ Coating : _____

2. Material group : _____

Material N° : _____ Hardness : _____ N/mm² /HB/HRC

Norm : _____ Elongation : _____ %

3. Thread : ☐internal ☐external **Hole :** ☐blind ☐through

Threaded length : _____ mm

Core hole Ø : _____ Depth : _____ mm

Counter-bore Ø : _____ Depth : _____ mm

4. Cutting speed (V_c) : _____ m/min _____ 1/min

Feed (f) : _____ mm/rev. **Feed (f_z) :** _____ mm/tooth

5. Machine : _____ ☐internal coolant

Working position : ☐horizontal ☐vertical

Tool attachment : ☐collet ☐hydraulic chuck ☐Weldon / Whistle Notch ☐hot / cold shrunk

6. Lubricant : ☐emulsion ☐oil ☐air ☐mist

Product : _____

7. Tool change reason : ☐tool wear ☐tool breakage

☐incorrect threading (inspected with gauge) ☐programme error

8. Efficiency comparison

Tool under test : _____

Performance and observations : _____

Remarks : _____

copy to be sent to DC SWISS SA - CH-2735 Malleray info@dcswiss.ch

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Spezialanfertigungen	*Bei allen Lieferungen von Spezialwerkzeugen behalten wir uns das Recht einer Über- oder Unterschreitung der Bestellmenge um bis zu 15 %, bei kleinen Mengen um 1 bis 2 Stück, vor.*
Garantie	*Werkzeuge, die wir als fehlerhaft anerkennen, werden gratis ersetzt.* *Dies jedoch ohne jegliche weitere Entschädigung.*
Beanstandungen	*Müssen spätestens innert 14 Tagen nach Erhalt der Ware schriftlich angebracht werden.*
Zeichnungen und Abbildungen	*Es ist untersagt, Zeichnungen und Abbildungen zu kopieren oder Dritten zugänglich zu machen.* *Angaben in unserem Katalog, auf Zeichnungen und in anderen Dokumenten können sich infolge technischer Weiterentwicklung und eventueller neuer Normen ändern. Sie sind deshalb nicht verbindlich.*
Notstandsbedingungen	*In Fällen von höherer Gewalt, teilweisem oder totalem Unterbruch unserer Fabrikation, behalten wir uns das Recht vor, von eingegangenen Lieferverpflichtungen ganz oder teilweise zurückzutreten.*
Erfüllungsort und Gerichtsstand	*Für alle sich aus dem Vertragsverhältnis ergebenden Streitigkeiten ist das Amtsgericht Moutier (Schweiz) zuständig.* *Streitigkeiten unterstehen ausschliesslich dem Schweizerischen Obligationenrecht.*

DELIVERY AND PAYMENT CONDITIONS

Orders	Orders, which cannot be delivered from stock, will be acknowledged. Items, which do not belong any more to our standard programme, although still featured in the catalogue, will be invoiced as «specials». Orders may only be cancelled by mutual written agreement.
Quotations and acknowledgements	For reasons of constant development in this field, all descriptions mentioned in our quotations, annexed documents, weight indications, measurements as well as illustrations and drawings are approximate indications. These technical data have binding value only if expressively specified.
Prices	Our prices are quoted for deliveries ex works Malleray, excluding VAT, packing, insurance, freight, customs' and legalisation duties. Should prices increase, we reserve the right to invoice tools already acknowledged at the new prices.
Payment	Payments must be made in advance or against irrevocable and confirmed documentary credit to be opened in our favour with a Swiss bank. All banking commissions and charges have to be borne by the buyer.
Right of ownership	We reserve the right of ownership of all goods supplied until the sales price, plus all incidental charges, have fully been paid.
Despatch	Deliveries take place at the purchaser's risk.
Delivery	Confirmed delivery dates are non-binding. We will do our utmost to maintain them. However, we cannot accept responsibility of direct or consequential losses due to delayed deliveries.
Special orders	For all special tools we reserve the right to over or under supply the ordered quantity by up to 15 %, or on small quantities by 1 or 2 pieces.
Guarantee	Tools recognised to be defective by DC will be replaced free of charge, but without prejudice.
Complaints	Complaints will be considered only within 15 days after receipt of the goods.
Drawings and sketches	The reproduction or transmission of drawings and other documents to a third party are prohibited. The information (drawings and prints) in our catalogue is for guidance only and is not binding.
Special conditions	In the case of partial or total disruption of our production; we reserve the right to partially or totally cancel our delivery commitments.
Tribunal	All disputes are subject to Swiss Law. The seat of court of law will be Moutier (Switzerland).

DC PROGRAMME OVERVIEW

THREAD CUTTING

THREAD FORMING

RIGID TAPPING

TAPPING CHUCKS

THREAD WHIRLING

THREAD MILLING

THREAD DIES

THREAD GAUGES

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SWISSQUALITY

WARNUNG

Gewindewerkzeuge können durch technisches Versagen oder durch Fahrlässigkeit brechen oder zersplittern und die Gesundheit des Mitarbeitenden gefährden. Befolgen Sie daher die gesetzlichen Sicherheits- und Gesundheitsvorschriften. Zudem ist das Tragen der Schutzbrille unerlässlich.
Das Schleifen von Gewindewerkzeugen verursacht gefährlichen Staub und darf nur unter gewissenhaftesten Sicherheitsrichtlinien verrichtet werden.

WARNING

Thread tools can break or shatter either through technical failure or negligence, and can endanger the health of the operator.
Always obey the safety and health regulations, also the wearing of safety glasses is compulsory.
The grinding of threading tools causes hazardous particles, and must be performed only under most rigorous safety standards.

Gewindewirbler — Gewindefräser — Gewindelehren

Thread whirl cutters — Thread milling cutters — Thread gauges

PELIZZARI
FAUSTINO
UTENSILI

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