KATALOG DC SWISS SA

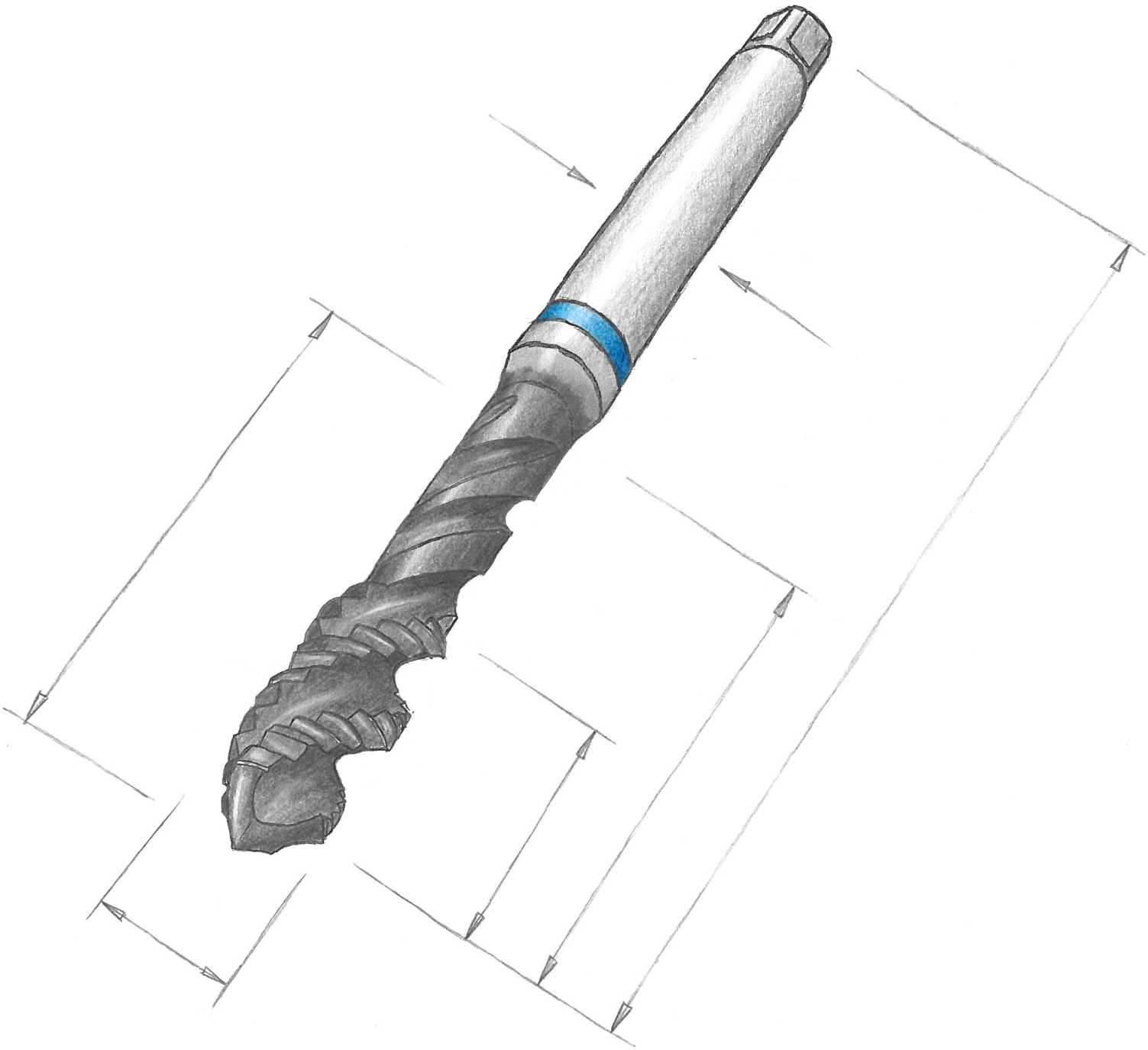
CATALOGUE DC SWISS SA

DE-EN-ID TC.1

Katalog
Catalogue

DE-EN-ID TC.1

TAP
190741 C11815
190760 C11830
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 17025:2017 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 17025:2017 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.

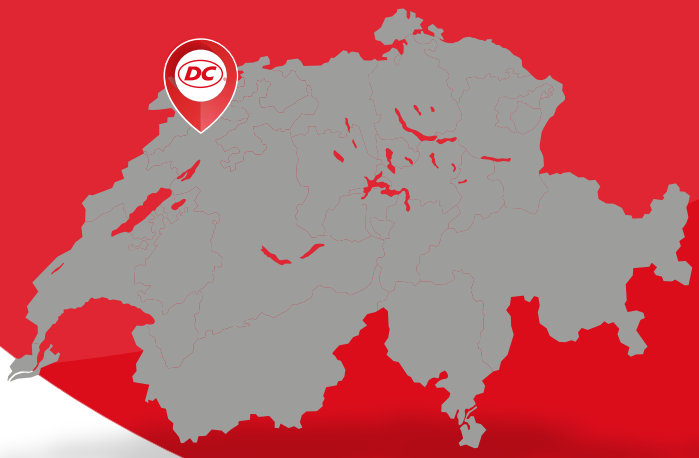
For questions, to which you cannot find an answer in our catalogue, we are of course gladly at your entire disposal.

"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

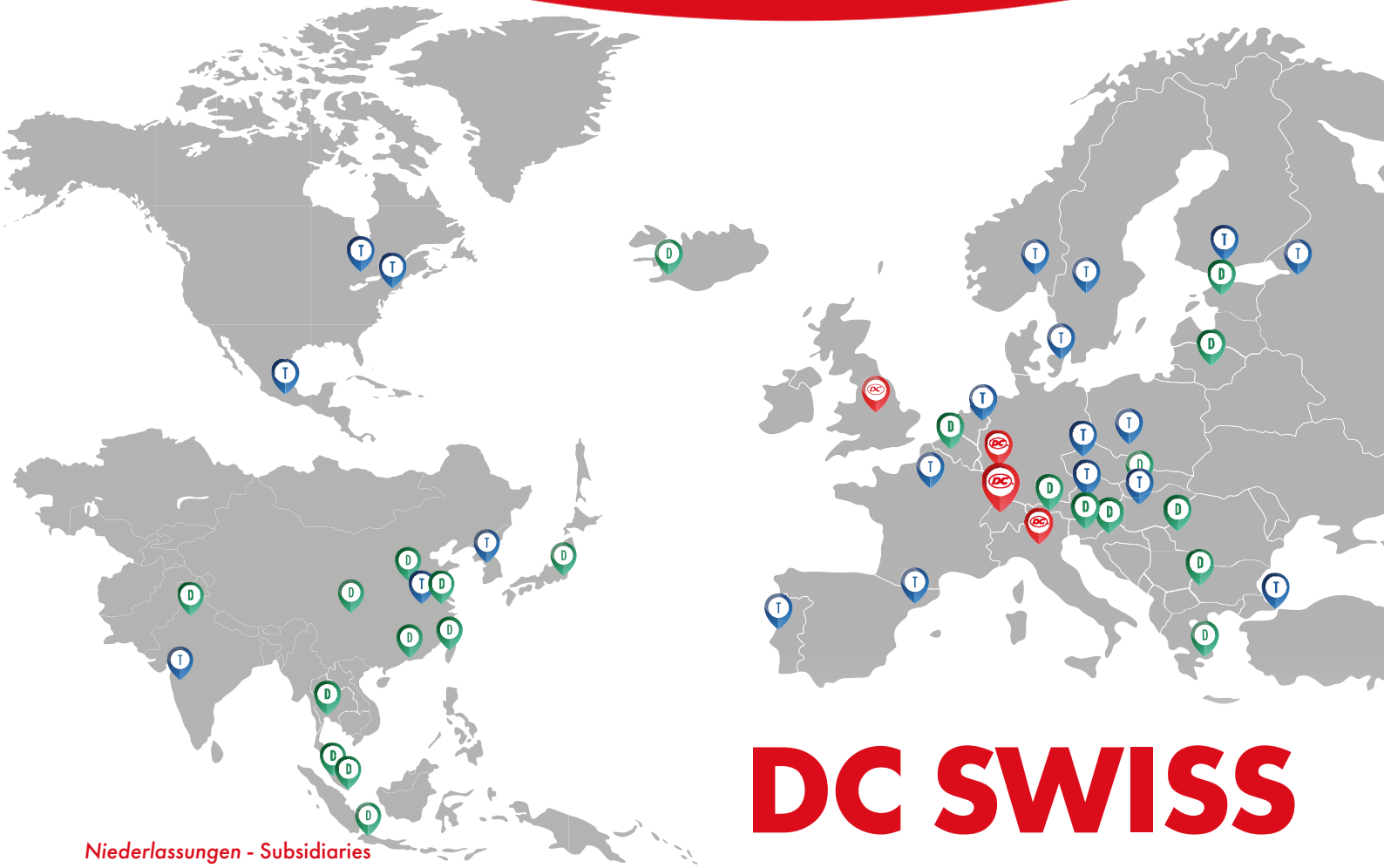


KUNDENNÄHE

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 resellers worldwide.



Niederlassungen - Subsidiaries
Technologiepartner - Technology Partners
Vertretungen - Distributors

DC SWISS WORLDWIDE

AND ALWAYS CLOSE TO YOU

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

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.

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.

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.

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.

FIRMENPROFIL

AUSBILDUNGSBETRIEB

*Die DC SWISS SA engagiert sich aktiv in der Ausbildung von Jugendlichen und der Weiterbildung bereits erfahrener Fachkräfte. Als Inhaber des Labels "**Ausbildungsbetrieb**" ist es für uns eine Ehrensache, jedes Jahr neue Lehrlinge auszubilden.*

Es ist uns wichtig, die nächste Generation von Fachkräften zu sichern und ihr die Möglichkeiten zur Entwicklung und Weiterbildung in einem Bereich mit hohem Potenzial zu bieten.

COMPANY PROFILE

TRAINING COMPANY

DC SWISS SA is actively involved in the training of young people and the further education of already experienced professionals. As holder of the "**Training company**" label, it is a matter of honour for us to train new apprentices every year.

It is important to us to ensure the next generation of professionals and to offer them opportunities for development and further training in a field with high potential.

Filière de formation POLYMÉCANICIEN

Wir sind auch Mitglied des Polymechaniker-Lehrprogramms; einem Netzwerk bestehend aus 6 Unternehmen, dessen Ziel es ist, Polymechaniker-Lehrlinge auszubilden.

We are also a member of the polymechanic apprenticeship programme; a network of 6 companies whose aim is to train polymechanic apprentices.

NOUS FORMONS DES PROS. ENTREPRISE FORMATRICE

Polymechaniker(in) EFZ - Polymechanic FCC
Produktionsmechaniker(in) EFZ - Production mechanic FCC
Disponent(in) EFZ - Logistics specialist FCC
Kaufmännische(r) Angestellte(r) EFZ - Commercial employee FCC

EFZ = Eidgenössisches Fähigkeitszeugnis
FCC = Federal Certificate of Competence

Reduzierung unserer CO2-Emissionen
und Verbesserung unserer Energieeffizienz
Reducing our CO2 emissions
and improving our energy efficiency

Wir bevorzugen die Verwendung von ***recycelten oder wiederverwertbaren Materialien***
We favour the use of **recycled or recyclable materials**

Unseren Abfall sortieren
Sorting our waste

UMWELTSCHUTZ

Wir setzen uns aktiv für den Schutz der Umwelt und des Klimas ein, reduzieren unseren Wasser- und Stromverbrauch und begrenzen die Geschäftsreisen unserer Mitarbeiter auf das Nötigste. Dabei gehen wir höchst verantwortungsvoll mit den Ressourcen um.

PROTECTION OF THE ENVIRONMENT

We are actively committed to protecting the environment and the climate, to reducing our consumption of water and electricity and to limiting the business travel of our employees to the bare essentials. In doing so, we use resources in a highly responsible manner.

Zertifikat Energie-Agentur der Wirtschaft
Freiwilliger Klimaschutz und Energieeffizienz
CO_2 &kWh reduziert
2021
ENERGIE-AGENTUR
DC Swiss SA
ENERGIE-AGENTUR

Wussten Sie, dass *die DC SWISS SA ein Abkommen mit der Energieagentur der Wirtschaft und der Schweizerischen Eidgenossenschaft abgeschlossen hat?*

Did you know that DC SWISS SA has concluded an agreement with the Energy Agency for the Economy and the Swiss Confederation?

GEWINDESCHNEIDEN
THREAD CUTTING

GEWINDEFORMEN
THREAD FORMING

LUFT- UND RAUMFAHRT
AEROSPACE

GEWINDEFRÄSEN
THREAD MILLING

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

FIRMENPROFIL

ISO 9001-ZERTIFIZIERUNG

Alle Bereiche des Unternehmens sind seit 2006 nach ISO 9001 zertifiziert.

COMPANY PROFILE

ISO 9001 CERTIFICATION

All areas of the company have been ISO 9001 certified since 2006.

- *Kontinuierliche Verbesserung der Kundenzufriedenheit und Kundenbindung.*
  Continuous improvement of customer satisfaction and loyalty.
- *Erfüllung von Produktstandards in unseren Prozessen und Verfahren und deren Optimierung.*
  Adherence to product standards in our processes and procedures and their optimisation.
- *Reduzierung der qualitätsbedingten Kosten (Ausschuss, Korrektur, ...).*
  Reduction of quality-related costs (rejects, retouching, etc.).
- *Verbesserung der organisatorischen und strukturellen Effizienz.*
  Improvement of organisational and structural efficiency.
- *Erhöhte Fähigkeit zur Anpassung an Veränderungen.*
  Increased ability to adapt to change.
- *Einbeziehung des Personals in den kontinuierlichen Verbesserungsprozess.*
  Involving staff in the continuous improvement process.

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

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ALLGEMEINE BAUMASSE NACH ISO / DIN
GENERAL DIMENSIONS ACCORDING TO ISO / DIN

N1120-4 ISO 529

Kurzer, verstärkter ISO-Schaft — Short, reinforced ISO shank

N1220-4 ISO 529

Kurzer, durchfallender ISO-Schaft — Short, reduced ISO shank

N320-4 DIN 371

Verstärkter DIN-Schaft — Reinforced DIN shank

N420-4 DIN 376 / DIN 374

Durchfallender DIN-Schaft — Reduced DIN shank

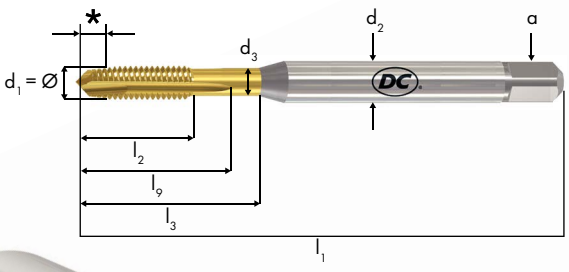
N520-4 NORM DC

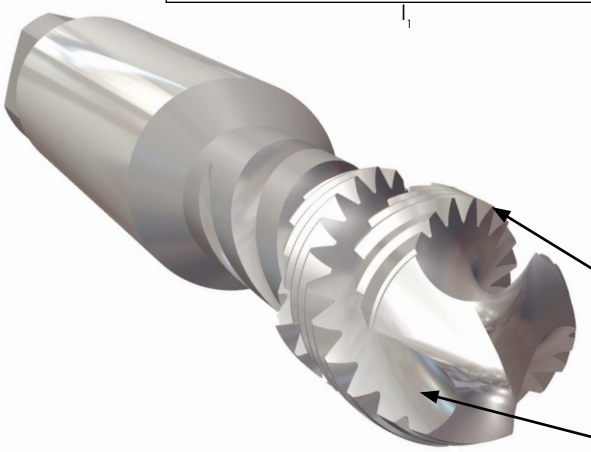
Extra-langer Maschinengewinde-bohrer mit verstärktem DIN-Schaft; Totallänge gemäss DC-Werksnorm — Extra long machine tap with reinforced DIN shank; total length as per DC standards

N620-4 NORM DC

Extra-langer Maschinengewinde-bohrer mit durchfallendem DIN-Schaft; Totallänge gemäss DC-Werksnorm — Extra long machine tap with reduced DIN shank; total length as per DC standards

BAUMASSE DES GEWINDEBOHRERS — MEASUREMENTS OF THE TAP





*	*Anschnittlänge*	Chamfer lead length
d_1	*Gewindenenndurchmesser*	Nominal thread diameter
d_2	*Schaftdurchmesser*	Shank diameter
d_3	*Halsdurchmesser*	Neck diameter
l_1	*Totallänge*	Overall length
l_2	*Gewindelänge*	Thread length
l_3	*Nutzlänge*	Usable length
l_9	*Nutenlänge*	Flute length
a	*Vierkant*	Square
z	*Nutenzahl*	Number of flutes

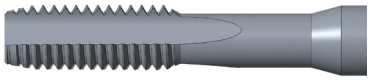
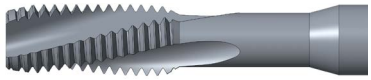
ZENTRIERSPITZEN — CENTER POINTS

	Gewinde	**Thread**
	Volle Zentrierspitze	Full external center point
	Abgesetzte Spitze	Reduced center point
	Zentrierbohrung	Internal center point
	Schaft	**Shank**
	Vollspitze	Full external center point
	Zentrierfase	Centering bevel
	Zentrierbohrung	Internal center point

Die Spitzenform ist abhängig vom Gewindedurchmesser, dem Werkzeugtypen und der Maschine, auf welcher die Werkzeuge hergestellt werden.

The center shape depends on the thread diameter, the type of tool and the machine on which the tools are manufactured.

NUTENFORMEN FÜR DC-GEWINDEBOHRER
FLUTE FORMS FOR DC TAPS

		Beispiele für Rechtsgewinde	**Examples for right-hand threads**
	**.10**	***Gerade Nuten*** *für Durchgangs- und Sacklöcher in kurzspanende Werkstoffe*	**Straight flutes** for through and blind holes in short-chipping materials
	.20	***Gerade Nuten mit Schälanschnitt*** *für Durchgangslöcher in langspanende Werkstoffe*	**Straight flutes with spiral point** for through holes in long-chipping materials
	.30	***Nur Schälanschnitt*** *für Durchgangslöcher in langspanende Werkstoffe, für Gewindetiefen ≤ 1.5 x D; Blechbearbeitung*	**Spiral point only** for through holes in long-chipping materials, for threading depth ≤ 1.5 x D; sheet metal working
	**.40**	***Spiralnuten mit leichtem Linksdrall*** *für Durchgangslöcher*	**Slow left-hand spiral flutes** for through holes
	.50	***Spiralnuten mit leichtem Rechtsdrall ≤ 27°*** *für Durchgangs- und Sacklöcher in kurzspanende Werkstoffe ≤ 2.5 x D bzw. für Sacklöcher in mittel-lang- und langspanende Werkstoffe ≤ 1.5 x D*	**≤ 27° slow right-hand spiral flutes** for through and blind holes in short-chipping materials ≤ 2.5 x D respectively for blind holes in middle-long and long-chipping materials ≤ 1.5 x D
	.60	***Spiralnuten mit starkem Rechtsdrall > 27° - ≤ 40°*** *für Sacklöcher in langspanende Werkstoffe ≤ 2.5 x D*	**> 27° - ≤ 40° fast right-hand spiral flutes** for blind holes in long-chipping materials ≤ 2.5 x D
	.70	***Spiralnuten mit starkem Rechtsdrall > 40 ° (R45)*** *für Sacklöcher in zähe Werkstoffe bis 3 x D*	**> 40° fast right-hand spiral flutes (R45)** for blind holes up to 3 x D in tough materials

SCHMIERNUTENFORMEN FÜR DC-GEWINDEFORMER
LUBRICATION GROOVE FORMS FOR DC THREAD FORMERS

.80

Ohne Schmiernuten

Without lubrication grooves

.81

Mit Schmiernuten

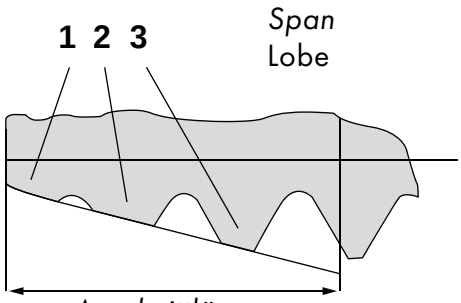
With lubrication grooves

.84

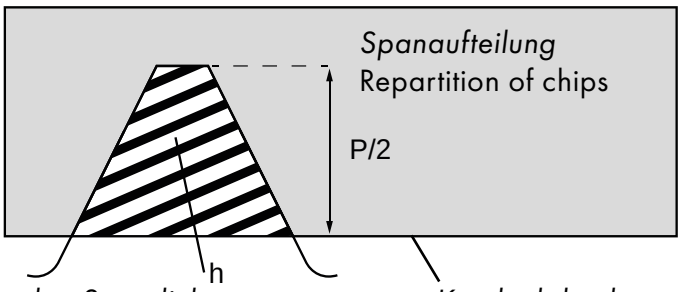
Mit Schmiernuten und Innenkühlung mit seitlich eingelenktem 45° Schmiermittelaustritt
(Umstellung auf diese neue Ausführung im Gange)

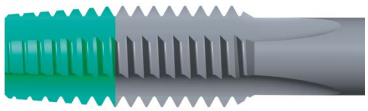
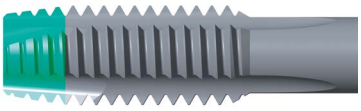
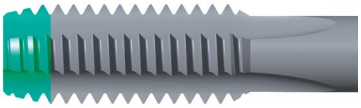
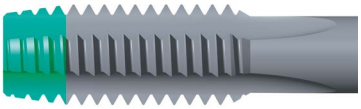
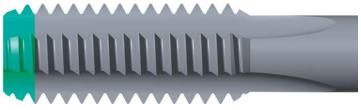
With lubrication grooves and internal cooling channel with lateral 45° lubricant outflow
(conversion to this new version in progress)

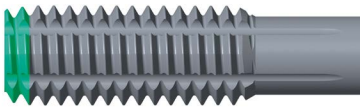
ANSCHNITTFORMEN FÜR DC-GEWINDEBOHRER UND GEWINDEFORMER
CHAMFER FORMS FOR DC TAPS AND THREAD FORMERS



Spanbildung im Anschnitt
Chip formation in the chamfer



Anschnittformen und Anschnittlängen für Gewindebohrer nach DIN 2197			**Chamfer forms and chamfer lead lengths for taps as per DIN 2197**	
-8		A 8 x P	*Anschnittlänge 6 - 8 Gewindegänge; für gerade Nuten*	Chamfer lead length 6 - 8 threads; for straight flutes
.20 - 4		B 4 x P	*Anschnittlänge 3.5 - 5.5 Gewindegänge; für gerade Nuten mit Schälanschnitt*	Chamfer lead length 3.5 - 5.5 threads; for straight flutes with spiral point
-3		C 2.5 x P	*Anschnittlänge 2 - 3 Gewindegänge; für gerade Nuten und Spiralnuten*	Chamfer lead length 2 - 3 threads; for straight and spiral flutes
-4		D 4 x P	*Anschnittlänge 3.5 - 5 Gewindegänge; für gerade Nuten und Spiralnuten*	Chamfer lead length 3.5 - 5 threads; for straight and spiral flutes
-5		E 1.5 x P	*Anschnittlänge 1.5 - 2 Gewindegänge für gerade Nuten und Spiralnuten*	Chamfer lead length 1.5 - 2 threads; for straight and spiral flutes

Anformkegelformen und Anformkegellängen für Gewindeformer nach DIN 2175			**Lead taper forms and lead taper lengths for thread forming taps as per DIN 2175**	
-3		C 2.5 x P	*Anformkegellänge 2 - 3 Gewindegänge*	Lead taper length 2 - 3 threads
-5		E 1.5 x P	*Anformkegellänge 1.5 - 2 Gewindegänge*	Lead taper length 1.5 - 2 threads

DC-SCHNEIDENGEOMETRIEN — DC CUTTING GEOMETRIES

N		***Für normale Werkstoffe*** *(Automatenstahl; Baustahl; Einsatzstahl; Kohlenstoffstahl; Stahl legiert < 850 N/mm2; rostfreier Stahl, geschwefelt; Kugelgraphitguss; Temperguss; Messing langspanend; Al legiert, Si < 10 %)*	**For normal materials** (free-cutting steels; structural, cementation steels; carbon steels; alloy steels < 850 N/mm2; free machining stainless steels; spheroidal graphite + malleable cast iron; long chip brass; Al alloyed Si < 10 %)
W		***Für weiche Werkstoffe*** *(Aluminium unlegiert; niedrig legiertes Aluminium; Thermoplaste)*	**For soft materials** (aluminium unalloyed; low-alloyed aluminium; thermoplastics)
Z		***Für zähe Werkstoffe*** *(rost- und säurebeständige Werkstoffe - austenitisch; ferritisch, martensitisch < 850 N/mm2; Reintitan; Nickellegierung 1 < 850 N/mm2; Reinkupfer)*	**For tough materials** (rust and acid resistant materials - austenitic stainless steels; ferritic and martensitic < 850 N/mm2; pure titanium; nickel alloys 1 < 850 N/mm2; pure copper)
ZX **NEW**		***Für ALU-BRONZE-Legierungen*** *(AMPCO® 21 / 22)*	**For ALU-BRONZE-Alloys** (AMPCO® 21 / 22)
H		***Für hochfeste Werkstoffe*** ***> 850 - < 1'400 N/mm2*** *((legierte Stähle, Vergütungsstähle - hochfester Stahl);* ***Messing, Bronze, Rotguss (kurzspanend); Messing bleifrei; Duroplaste; glasfaserverstärkte Kunststoffe)***	**For high tensile materials** **> 850 - < 1'400 N/mm2** ((alloyed steels, tempered steels - high tensile alloy steels); **short chip brass + phosphor bronze + gun metal; lead-free brass; duroplastics; glass fibre reinforced plastics)**
S		***Für sonderlegierte Werkstoffe*** ***> 850 - < 1'150 N/mm2*** *(Stahl legiert / vergütet; ferritisch, martensitische Stähle; Nickellegierung 2)*	**For special alloyed materials** **> 850 - < 1'150 N/mm2** (alloy steels hardened / tempered; ferritic, martensitic steels; nickel alloys 2)
SA AERO **SA.20 / SA.50**		***Für sonderlegierte Werkstoffe*** ***> 850 - < 1'150 N/mm2*** *(Nickellegierung 2; Messing bleifrei)*	**For special alloyed materials** **> 850 - < 1'150 N/mm2** (nickel alloys 2; lead-free brass)

DC-SCHNEIDENGEOMETRIEN — DC CUTTING GEOMETRIES

SA AERO **SA.90**		***Für sonderlegierte Werkstoffe > 1'150 - < 1'600 N/mm2*** *(Nickellegierung 3)*	**For special alloyed materials > 1'150 - < 1'600 N/mm2** (nickel alloys 3)
TL		***Für Titanlegierungen***	**For titanium alloys**
GG		***Für Grauguss; Alu-Gusse mit hohem Si-Gehalt; Magnesium-Legierungen***	**For grey cast iron; aluminium castings with high Si content; magnesium alloys**
K		***Mit spezieller "Spanbrecher-Schneidengeometrie"*** *(für normale, gut zerspanbare Werkstoffe bis 1'150 N/mm2; Messing bleifrei)*	**With special "chipbreaker cutting edge geometry"** (for normal, easily machinable materials up to 1'150 N/mm2; lead-free brass)
QTAP **NEW**		***Der DC-ALLROUNDER*** *(für die Bearbeitung von universellen Werkstoffen bis zu 1'150 N/mm2, für den Einsatz im Längenausgleichsfutter und das Synchron-Gewindeschneiden)*	**The DC ALLROUNDER** (for machining universal materials up to 1'150 N/mm2, for use in tapping chucks with axial compensation and for synchronous tapping)
RTS		***DC-Synchron-Gewindebohrer Typ RTS*** *(für die Bearbeitung von universellen Werkstoffen bis zu 1'150 N/mm2, für das Synchron-Gewindeschneiden "Rigid Tapping")*	**DC Synchro tap type RTS** (for machining universal materials up to 1'150 N/mm2, for synchronous tapping "Rigid Tapping")
FS **< Ø 3 mm**		***DC-Gewindeformer Typ FS*** *(Universalgewindeformer mit 4 Druckstollen für kleine Gewinde im Abmessungsbereich Ø ≥ 1 - < 3 mm in alle kaltverformbaren Werkstoffe)*	**DC Thread formers type FS** (universal thread former with 4 forming lobes for small thread sizes Ø ≥ 1 - < 3 mm, in all cold forming materials)

DC-SCHNEIDENGEOMETRIEN — DC CUTTING GEOMETRIES

FPS
≥ Ø 3 mm

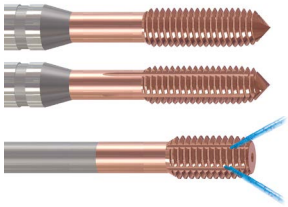
.80
.81
.84

DC-Gewindeformer Typ FPS
(für Ø ≥ 3 mm, mit breiten Druckstollen, für ein progressives Fliessen von Werkstoffen mit geringer Bruchdehnung (Baustähle, Kohlenstoffstähle, legierte Stähle, langspanendes Messing, Aluminium, usw.))

DC Thread formers type FPS
(for Ø ≥ 3 mm, with large forming lobes designed for a progressive flow of materials with low elongation coefficient (structural steels, carbon steels, alloy steels, long chipping brass, aluminium, etc.))

FAS
≥ Ø 3 mm

.80
.81
.84



DC-Gewindeformer Typ FAS
(für Ø ≥ 3 mm, mit spitzen Druckstollen, für ein schnelles Fliessen von zähen Werkstoffen mit hoher Bruchdehnung (rostfreie Stähle, Reinkupfer, usw.))

DC Thread formers type FAS
(for Ø ≥ 3 mm, with pointed forming lobes designed for a fast flow of tough materials with high elongation coefficient (stainless steels, pure copper, etc.))

.21 / .61

Ausgesetzte Zähne
(für weniger Wärmeentwicklung)

Interrupted thread
(for less heat generation)

.62

Verjüngtes Führungsgewinde
(zum Vermeiden von Spanverklemmungen und Zahnausbrüchen im Führungsgewinde)

Truncated thread
(to avoid chip jamming and tooth breakage in the guiding section of the tap)

.65

Verjüngtes Führungsgewinde und Innenkühlung mit stirnseitigem Schmiermittelaustritt

Truncated thread and internal coolant with frontal outflow

OBERFLÄCHENBEHANDLUNGEN UND BESCHICHTUNGEN
SURFACE TREATMENTS AND COATINGS

V

DC-"V"-Oberflächenbehandlung Dampfangelassen
Die DC-"V"-Oberflächenbehandlung verbessert die Gleitfähigkeiten der Gewindebohrer und verhindert Kaltschweissungen.

DC "V" surface treatment Steam tempered
The DC "V" surface treatment improves the sliding friction of the tap and prevents cold welding.

NV

Plasmanitrierung + "V"-Oberflächenbehandlung
Plasmanitrierte Gewindebohrer haben eine grössere Oberflächenhärte, ca. 1100 HV, und sind besonders geeignet für die Bearbeitung von abrasiven Werkstoffen (Grauguss, Aluguss mit hohem Si-Gehalt). Zudem haben sie eine verbesserte Gleitfähigkeit dank der zusätzlichen DC-"V"-Oberflächenbehandlung.

Plasma nitriding + "V" surface treatment
Plasma-nitrided taps have increased surface hardness, approx. 1100 HV, and are particularly suitable for machining abrasive materials (grey cast iron, cast aluminium with high Si content). They also have improved sliding properties thanks to the additional DC "V" surface treatment.

DLC

DLC-Beschichtung
DLC-beschichtete Gewindewerkzeuge haben eine Oberflächenhärte von ca. 2500 HV und eignen sich vor allem für die Bearbeitung von Buntmetallen und Aluminium mit geringem Silizium-Gehalt (< 9 % Si).

DLC-coating
DLC-coated threading tools have a surface hardness of approx. 2500 HV and are particularly suitable for machining non-ferrous metals and aluminium with a low silicon content (< 9 % Si).

TiN

Titannitrid-Beschichtung (TiN)
Die Titannitrid-Beschichtung ist eine Hartstoff-Beschichtung (PVD) mit ca. 2400 HV. TiN-beschichtete Gewindebohrer sind besonders geeignet für die Bearbeitung von abrasiven oder kaltschweissenden Werkstoffen; höhere Schnittgeschwindigkeiten und grössere Leistung.

Titanium-nitride coating (TiN)
The titanium nitride coating is of a hard metal material (PVD) with a hardness of approximately 2400 HV. TiN-coated taps are particularly suitable for working abrasive and cold-welding type materials; higher cutting speeds and improved performance.

TiCN

Titancarbonitrid-Beschichtung (TiCN)
Die TiCN-Beschichtung hat mit ca. 3000 HV eine noch grössere Härte als die TiN-Beschichtung; noch höhere Schnittgeschwindigkeit.

Titanium-carbonitride coating (TiCN)
The TiCN-coating with a hardness of approx. 3000 HV is even harder than the TiN-coating, for even higher cutting speeds.

OBERFLÄCHENBEHANDLUNGEN UND BESCHICHTUNGEN
SURFACE TREATMENTS AND COATINGS

VS

DC-"VS"-Verschleissschutzschicht für den allgemeinen Einsatz
Spezifische Oberflächen-Behandlung, speziell geeignet für Gewindebohrer der Leistungsklasse "Z", optimal abgestimmt für die Bearbeitung mit Emulsion in INOX; für Gewindebohrer der Leistungsklasse "S" für sonderlegierte Werkstoffe; für Gewindebohrer der Leistungsklasse "TL" für Titan-Legierungen.

DC "VS" wear-protective coating for general use
A special treatment for taps specifically intended for use in Inox with taps of the performance class "Z" with emulsion; in special alloys with taps of the performance class "S"; in titanium alloyed materials with taps of the performance class "TL".

VX

DC-"VX"-Verschleissschutzschicht für rostfreie Stähle und Nickellegierungen
Spezifische Oberflächen-Behandlung speziell geeignet für Gewindebohrer der Leistungsklasse "Z", optimal abgestimmt für die Bearbeitung mit Emulsion von rostfreien Stählen und Nickellegierungen.

DC "VX" wear-protective coating for stainless steels and Nickel alloys
Specific surface treatment, especially suitable for taps in performance class "Z", optimally adapted for machining with emulsion of stainless steels and Nickel alloys.

Hinweis
Unsere Standard-Beschichtungen erlauben die Bearbeitung einer breiten Werkstoffpalette. Für spezifische Anwendungsfälle in ganz bestimmte Werkstoffe bieten wir Ihnen gerne die dafür optimal geeignete Beschichtung an. Lieferfrist und Preis auf Anfrage.

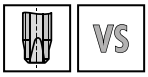
Notice
Our standard coatings allow a wide range of materials to be performed. For specific applications in very specific materials, we will be pleased to offer you the most suitable coating. Delivery time and price on request.

NEW

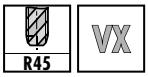
AERO

MJ
UNJC - UNJF

S320VS-4



S370VX-3



MJ
UNJC - UNJF

SA320-4

SA350-3

SA390-3

MJ
UNJC - UNJF

TL351VS-3

ZX

Für ALU-BRONZE-Legierungen *(AMPCO® 21/22)*
For ALU-BRONZE-Alloys (AMPCO® 21/22)

M

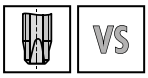
ZX320-4
ZX420-4

QTAP

DC-Allrounder
DC Allrounder

M - MF - UNC
UNF - G

Q320VS-4 Q420VS-4



Q323VS-4 Q423VS-4

Q360VS-3 Q460VS-3

Q363VS-3 Q463VS-3

ERWEITERTE DC-ANWENDUNGSTABELLE
ENLARGED DC APPLICATION CHART

* 17 *Stahl vergütet > 44 - ≤ 54 HRC* **Alloy steels tempered > 44 - ≤ 54 HRC**	* 18 *Stahl gehärtet > 54 - ≤ 63 HRC* **Alloy steels hardened > 54 - ≤ 63 HRC**	64 *Messing bleifrei (ECOBRASS®)* **Lead free brass (ECOBRASS®)**
> 44 - ≤ 54 HRC	> 54 - ≤ 63 HRC	CuZn21Si3P (ECOBRASS®) CuZn35 CuZn42

✱ *Siehe unser Programm DC-VHM-Gewindefräser und VHM-Gewindewirbler gemäss DC-Katalog TM.1.*
✱ See our programme DC solid carbide thread milling cutters and solid carbide thread whirl cutters as per DC catalogue TM.1.

NEW

RTS

M 7GX

RTS362VS-3
RTS462VS-3

R40 | VS

NP

M

NP110-1 NP210-1

NP110-2 -3 NP210-2 -3

H.TC

MF - UNC - UNF

H320TC-4 H420TC-4

TiCN

H350TC-3 H450TC-3

R25 | TiCN

AUF ANFRAGE

- ***Für den spezifischen Einsatz gemäss Kundenanforderungen:***
  DC-Maschinengewindebohrer Typ MEGA (Ø 42 - 164 mm)
- ***DC-VHM-Maschinen-Gewindebohrer für höhere Standzeiten und grössere Prozesssicherheit in spezifischen Anwendungsfällen.***

ON REQUEST

- **For specific applications according to customer requirements:**
  DC machine taps type MEGA (Ø 42 - 164 mm)
- **DC solid carbide machine taps for higher tool-life and improved process security in specific applications.**

TECHNISCHE VERBESSERUNGEN: UMSTELLUNG AUF NEUE AUSFÜHRUNG IM GANGE
TECHNICAL IMPROVEMENTS: CHANGE TO NEW VERSION IN PROGRESS

INNENKÜHLUNG MIT SEITLICHEM SCHMIERMITTELAUSTRITT, NEU 45°
INTERNAL COOLANT WITH RADIAL OUTFLOW, NEW 45°

M

RTS323VS-4 RTS423VS-4
RTS523VS-4 RTS623VS-4

FPS384VS-3 FPS484VS-3
FPS584VS-3 FPS684VS-3

FAS384VS-3 FAS484VS-3
FAS584VS-3 FAS684VS-3

MIT NEUER SCHNEIDKANTEN-KONDITIONIERUNG
WITH NEW CONDITIONING OF THE CUTTING EDGES

M - MF - UNC - UNF
G - EG UNC - EG UNF

Z370VS-3 Z470VS-3

M

Z373VS-3 Z473VS-3

M - MF - UNC - UNF
EG M - EG UNC - EG UNF

SA320-4 SA420-4
SA350-3 SA450-3

M - MF - UNC - UNF
EG M - EG UNF

SA390-3

M

TL320VS-4 TL420VS-4

M - MF - UNC - UNF
EG M - EG UNC - EG UNF

TL351VS-3 TL451VS-3

MJ - UNJC - UNJF

S370VX-3 S470VX-3

COMING SOON:

Überarbeitete Gewindebohrer Typ H.20TC-4 / H.50TC-3 - neue VH-Beschichtung zur Erhöhung der Werkzeugstandzeit um bis zu 50 %, für Materialien gemäß den Gruppen 15 und 16 unserer Anwendungstabelle.

COMING SOON:

Reworked taps H.20TC-4 / H.50TC-3 - new VH coating to increase tool life by up to 50 %, for materials according to groups 15 and 16 of our application chart.

NANO GEWINDEBOHRER, GEWINDEFORMER, GEWINDELEHREN
NANO TAPS, THREAD FORMERS, THREAD GAUGES

M / MF / UNC / UNF
S / SF / SL

Ø 0.3 - Ø 2.74 mm

DZ04

DZ14

TAN

TAZ

FA/CFA

CMS

DN01

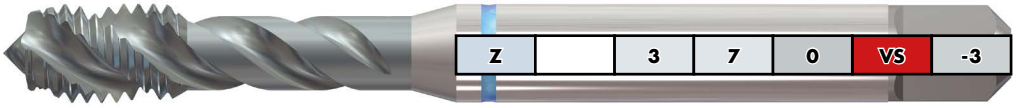
DN02

KODIERUNG — CODIFICATION

DC-Gewindebohrer

DC Taps

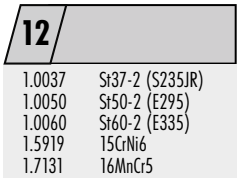
Beispiel - Example

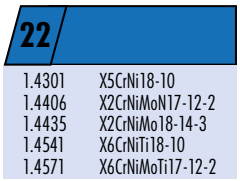


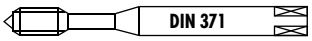
Normale Werkstoffe	Normal materials	N
Weiche Werkstoffe	Soft materials	W
Zähe Werkstoffe	Tough materials	Z
Alu-Bronze-Legierungen	Alu-bronze alloys	ZX
Hochfeste Werkstoffe	High tensile materials	H
Sonderlegierte Werkstoffe	Special alloys	S
Sonderlegierte Werkstoffe (Aero)	Special alloys (Aero)	SA
Titanlegierungen (Aero)	Titanium alloys (Aero)	TL
Grauguss und Alu-Guss	Cast iron and aluminium casting	GG
Allrounder	Allrounder	QTAP
Synchron-Gewindeschneiden	Rigid Tapping	RTS
Spanbrecher	Swarf breaker	K
MEGA-Gewindegrössen	MEGA tap sizes	MA
Spezialausführung	Special execution	3
Kurzer DIN-Schaft verstärkt	DIN short - reinforced shank	1
Kurzer DIN-Schaft durchfallend	DIN short - reduced shank	2
Langer DIN-Schaft verstärkt	DIN long - reinforced shank	3
Langer DIN-Schaft durchfallend	DIN long - reduced shank	4
Extra-langer DIN-Schaft verstärkt	DIN extra-long - reinforced shank	5
Extra-langer DIN-Schaft durchfallend	DIN extra-long - reduced shank	6
DC-Werksnorm	DC standards	9
Kurzer ISO-Schaft verstärkt	ISO short - reinforced shank	11
Kurzer ISO-Schaft durchfallend	ISO short - reduced shank	12
Gerade Nuten	Straight flutes	1
Gerade Nuten und Schälanschnitt	Straight flutes with spiral point	2
Schälanschnitt	Spiral point	3
Spiralnuten mit Linksdrall < 27°	< 27° left-hand slow spiral flutes	4
Spiralnuten mit Rechtsdrall < 27°	< 27° right-hand slow spiral flutes	5
Spiralnuten mit Rechtsdrall > 27°	> 27° right-hand fast spiral flutes	6
Spiralnuten mit Rechtsdrall > 40°	> 40° right-hand fast spiral flutes	7
Spiralnuten mit Rechtsdrall 10°, Schälan.	10° right-hand slow spiral flutes, spiral point	9
Standardausführung	Standard	0
Ausgesetzte Zähne	Interrupted thread	1
Verjüngtes Führungsgewinde	Truncated thread	2
Innenkühlung	Internal coolant	3
Ausgesetzte Zähne, Innenkühlung	Interrupted thread, internal coolant	4
Verjüngtes Führungsgewinde, Innenkühlung	Truncated thread, internal coolant	5
"V"-Oberflächenbehandlung	"V" surface treatment	V
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
Titannitrid-Beschichtung (TiN)	Titanium-nitride coating (TiN)	TN
Titancarbonitrid-Beschichtung (TiCN)	Titanium carbonitride coating (TiCN)	TC
Plasmanitrierung + "V"-Oberflächenbehandlung	Plasma nitriding + "V" surface treatment	NV
DLC-Beschichtung	DLC-coating	DL
Vorschneider	Taper tap	-1
Mittelschneider	Second tap	-2
Fertigschneider / 2 - 3 Gewindegänge	Bottoming tap / 2 - 3 chamfered threads	-3
3.5 - 5.5 Gewindegänge, Schälanschnitt	3.5 - 5.5 chamfered threads, spiral point	-4
1.5 - 2 Gewindegänge	1.5 - 2 chamfered threads	-5
6 - 8 Gewindegänge	6 - 8 chamfered threads	-8
Gewindebohrer-Satz	Thread taps set	-S

PIKTOGRAMME — PICTOGRAPHS

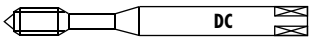
Für Werkstoffgruppen gemäss DC-Anwendungstabelle
For material groups as per DC application chart



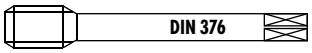




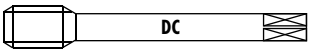
Verstärkter Schaft gemäss DIN 371
Reinforced shank as per DIN 371



Verstärkter Schaft gemäss DC-Werksnorm
Reinforced shank as per DC standards



Durchfallender Schaft gemäss DIN 376
Reduced shank as per DIN 376



Durchfallender Schaft gemäss DC-Werksnorm
Reduced shank as per DC standards

Extra-lang
Extra-long

HSSE-PM
HSSE-PM

HSSE
HSSE

Anzahl Spannuten (Z)
Number of flutes (Z)

Gerade Nuten
Straight flutes

Gerade Nuten mit Schälanschnitt
Straight flutes with spiral point

Schälanschnitt
Spiral point only

Spiralnuten mit 40° Rechtsdrall
40° right-hand spiral flutes

Verjüngtes Führungsgewinde
Truncated thread

Ausgesetzte Zähne
Interrupted thread

Vorschneider
Taper tap

Mittelschneider
Second tap

Fertigschneider
Bottoming tap

Handgewindebohrer, Satz zu 2 Stück
Hand taps, set of 2 pieces

Handgewindebohrer, Satz zu 3 Stück
Hand taps, set of 3 pieces

Führungszapfen
Parallel pilot

Innenkühlung mit stirnseitigem Schmiermittelaustritt
Internal coolant with frontal outflow

Innenkühlung mit seitlichem Schmiermittelaustritt, neu 45°
Umstellung auf neue Ausführung im Gange
Internal coolant with radial outflow, new 45°
Change to new version in progress

Durchgangsloch, langspanende Werkstoffe
Through hole, long chipping materials

Durchgangsloch < 1.5 x D, kurzspanende Werkstoffe
Through hole < 1.5 x D, short chipping materials

Sackloch < 1.5 x D, langspanende Werkstoffe
Blind hole < 1.5 x D, long chipping materials

Sackloch < 2.5 x D, kurzspanende Werkstoffe
Blind hole < 2.5 x D, short chipping materials

Sackloch < 2.5 x D, langspanende Werkstoffe
Blind hole < 2.5 x D, long chipping materials

Durchgangs- und Sackloch < 2.5 x D
Through / blind hole < 2.5 x D

Sackloch < 3 x D
Blind hole < 3 x D

MEGA-Gewindeschneidkopf
MEGA thread tapping head

Kronengewindebohrer
Crown tap

Kombi-Gewindebohrer
Combination drill/tap

Kernlochdurchmesser
Core hole diameter

Radius auf Aussendurchmesser (J)
Radius on external diameter (J)

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

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

PIKTOGRAMME — PICTOGRAPHS

Linksgewinde
Left-hand thread

3.5 - 5.5 Gewindegänge, Anschnitt Form B
3.5 - 5.5 chamfered threads, lead form B

2 - 3 Gewindegänge, Anschnitt Form C
2 - 3 chamfered threads, lead form C

1.5 - 2 Gewindegänge, Anschnitt Form E
1.5 - 2 chamfered threads, lead form E

Toleranzklasse ISO 2 6H
Tolerance class ISO 2 6H

Toleranzklasse ISO 2 6H + 0.1 mm
Tolerance class ISO 2 6H + 0.1 mm

Toleranzklasse ISO 3 6G
Tolerance class ISO 3 6G

DC-"V"-Oberflächenbehandlung
DC "V" surface treatment

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

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

Titannitrid-Beschichtung
Titanium-nitride coating

Titancarbonitrid-Beschichtung
Titanium-carbonitride coating

Plasmanitrierung + "V"-Oberflächenbehandlung
Plasma nitriding + "V" surface treatment

DLC-Beschichtung
DLC-coating

Hardlube-Beschichtung
Hardlube-coating

Spanfragmente / regelmässige Spanaufteilung
Swarf fragments / consistant chips

Für synchrones Gewindeschneiden
For Rigid Tapping

Für klassisches Gewindeschneiden
For Classic Tapping

Lagerartikel
Stock item

Kurzfristig lieferbar
Available at short notice

*

Ab Lager lieferbar solange Vorrat
Available from stock, while stock lasts

ANWENDUNGSGRUPPEN

Beispiele für Anwendungsgruppen

Referenz: DIN

11 Automatenstahl

1.0711	A11
1.0715	A15X
1.0718	A20
1.0726	A30
1.0737	A35

12 Baustahl, Einsatzstahl

1.0037	Ст1пс
1.0050	Ст5пс
1.0060	Ст6пс
1.5919	12ХН2А
1.7131	18ХГ

13 Kohlenstoffstahl

1.0503	45
1.0535	50
1.0601	60
1.1545	У10А
1.2067	9Х2

14 Stahl legiert < 850 N/mm2

1.2363	Х6ВФ
1.3551	ШХ10
1.7218	38ХС
1.7220	35ХМ
1.7225	38ХМ

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

1.3553	ШХ15СГ
1.6580	3Х3М3Ф
1.7220	35ХМ
1.7225	38ХМ
1.8507	38Х2МЮА

16 Hochfester Stahl ≤ 44 HRC

1.6582	38Х2Н2МА
1.7225	38ХМ
1.7228	38ХВ
1.8515	40ХН

17 Stahl vergütet > 44 - ≤ 54 HRC

> 44 - ≤ 54 HRC

18 Stahl gehärtet > 54 - ≤ 63 HRC

> 54 - ≤ 63 HRC

21 Rostfreier Stahl, geschwefelt

1.4005	08Х13
1.4104	12Х13
1.4305	14Х17Н2

22 Austenitisch

1.4301	08Х18Н10Т
1.4406	03Х16Н15М3
1.4435	03Х17Н14М3
1.4541	12Х18Н10Т
1.4571	10Х17Н13М2Т

23 Ferritisch, martensitisch < 850 N/mm2

1.4112	14Х17Н2
1.4540	18Х11МНФБ
1.4582	40Х10С2М
1.4762	15Х28
1.4922	20Х12ВНМФЛ

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

1.4057	20Х17Н2
1.4125	95Х18
1.4542	18Х15Н3М-Ш
1.4548	55Х20Г9АН4
1.4748	20Х20Н14С2

31 Grauguss

0.6015	СЧ15
0.6020	СЧ20
0.6025	СЧ25
0.6030	СЧ30

32 Kugelgraphitguss, Temperguss

0.7040	ВЧ40
0.7043	ВЧ50
0.7050	ВЧ60
0.7060	ВЧ70
0.7080	ВЧ80

41 Reintitan

3.7024	ВТ1-00
3.7034	ВТ1-0
3.7055	ВТ1-1
3.7065	ВТ1-2

42 Titanlegierung

3.7124	ВТ23
3.7164	ВТ5-1
3.7174	ВТ6

51 Nickellegierung 1 ≤ 850 N/mm2

1.3912	36Н
2.4360	НМц2
2.4816	НМц5
1.4876	ХН32Т

52 Nickellegierung 2 > 850 - ≤ 1150 N/mm2

2.4375	ХН77ТЮР
2.4631	ХН67МВТЮ
2.4668	ХН75МВТЮ

53 Nickellegierung 3 > 1150 - ≤ 1600 N/mm2

2.4631	ХН35ВТЮ
2.4668	ХН70ВМТЮ

61 Reinkupfer (Elektrolytkupfer)

2.0060	М1

62 Messing, Bronze, Rotguss (kurzspanend)

2.0401	ЛЦ40С
2.0402	ЛС59-1
2.1030	БрОФ8-0.3
2.1096	БрОФ7-0.2

63 Messing (langspanend)

2.0240	Л63
2.0265	Л70
2.0321	Л90

64 Messing bleifrei

CuZn21Si3P
(ECOBRASS®)
CuZn35
CuZn42

71 Al unlegiert

3.0205	А98
3.0255	А99

72 Al legiert Si < 1.5 %

3.1255	Д16
3.1355	Д18
3.2315	Д1
3.3206	В95
3.4345	АМг5

73 Al legiert Si > 1.5 % - < 10 %

3.2161	АК7
3.2162	АК9
3.2341	АЛ6
3.2371	АК7ч

74 Al legiert Si > 10 %, Mg-Legierungen

3.2381	АК10су
3.2382	АК12
3.2581	АК12ММгН
3.2583	МЛ5

81 Thermoplaste

Делрин
Тефлон
Нейлон

82 Duroplaste

Бакелит
Новопан

83 Faserverstärkte Kunststoffe

Армированные стеклопластики
Армированные дюро- и термопластики

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

Reference: AISI/ASTM/UNS

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.55
1.5919	4617
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
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	A48-35B
0.6030	A48-45B

32 Spheroidal graphite + malleable cast iron

0.7040	65-45-12
0.7043	60-40-18
0.7050	80-55-06
0.7060	70-60-03
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
2.4816	N06600
1.4876	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

64 Lead free brass

CuZn21Si3P
(ECOBRASS®)
CuZn35
CuZn42

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	7022

73 Al alloyed Si > 1.5 % - < 10 %

3.2161	327
3.2162	-
3.2341	-
3.2371	356

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

91 Yellow gold

2N18
Au585AgCu205
3N18
Au917AgCu44

92 Red gold

4N18
5N18
Au585CuAg325
Au750AgCu
Au917Cu83

93 White gold

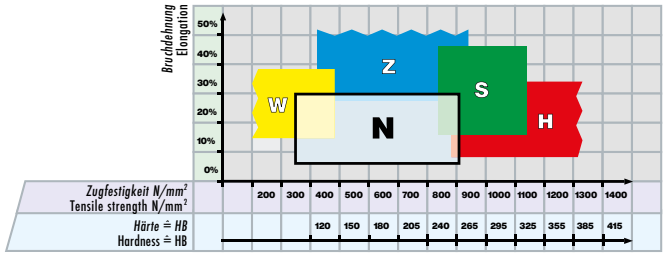
Au750PdCu125
Au750PdCu150
Au585PdCu150
Au925Pd75

94 Silver

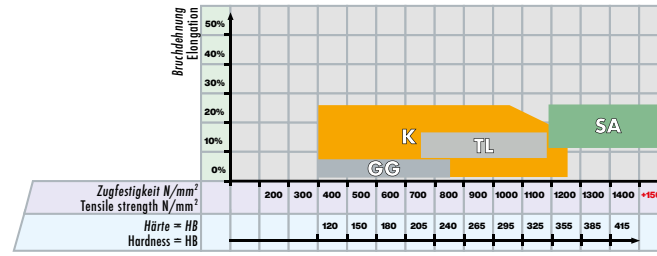
Ag999
Ag800Cu
Ag925Cu

ANWENDUNGSTABELLE — APPLICATION CHART

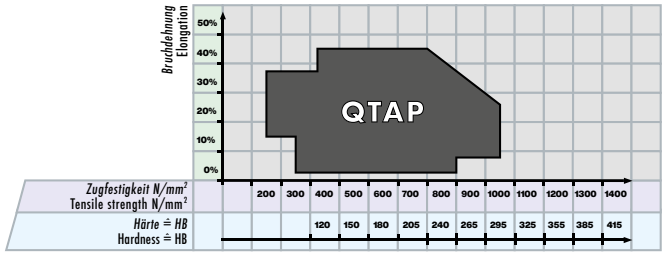
Gewindeschneiden
Thread cutting



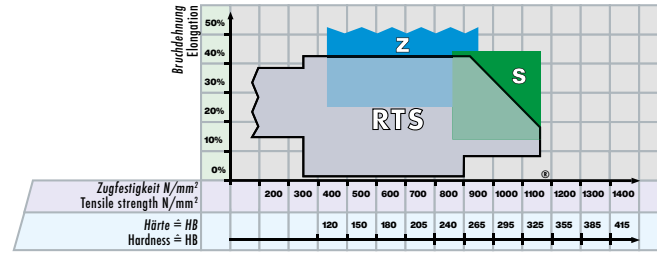
Gewindeschneiden
Thread cutting



Gewindeschneiden klassisch und synchron
Thread cutting classic and rigid



Synchron-Gewindeschneiden
Rigid Tapping



DC-*Anwendungsgruppen*

DC Material classification

	Werkstoff-Gruppen Material groups		*Werkstoffbezeichnung*	Material designation	*Härte* Hardness (HB)	*Festigkeit* Tensile strength Rm (N/mm²)	*Dehnung* Elongation A (%)
10	***Stahl*** **Steels**	11	*Automatenstahl*	Free-cutting steels	< 200	< 700	< 10
		12	*Baustahl, Einsatzstahl*	Structural, cementation steels	< 200	< 700	< 30
		13	*Kohlenstoffstahl*	Carbon steels	< 300	< 1000	< 20
		14	*Stahl legiert < 850 N/mm²*	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	*Stahl legiert / vergütet > 850 - < 1150 N/mm²*	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	*Hochfester Stahl ≤ 44 HRC*	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	*Stahl gehärtet > 54 - ≤ 63 HRC*	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	***Rostfreier Stahl*** **Stainless steels**	21	*Rostfreier Stahl, geschwefelt*	Free machining stainless steels	< 250	< 850	< 25
		22	*Austenitisch*	Austenitic stainless steels	< 250	< 850	> 20
		23	*Ferritisch, martensitisch < 850 N/mm²*	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	*Ferritisch, martensitisch > 850 - < 1150 N/mm²*	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	***Guss*** **Cast iron**	31	*Grauguss*	Cast iron	< 250	< 850	< 10
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	***Titan*** **Titanium**	41	*Reintitan*	Pure titanium	< 250	< 850	> 20
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	< 20
50	***Nickel*** **Nickel**	51	*Nickellegierung 1 ≤ 850 N/mm²*	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	*Nickellegierung 2 > 850 - ≤ 1150 N/mm²*	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	***Kupfer*** **Copper**	61	*Reinkupfer (Elektrolytkupfer)*	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	*Messing, Bronze, Rotguss (kurzspanend)*	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	> 12
		64	*Messing bleifrei*	Lead free brass	< 220	< 700	> 15
70	***Aluminium Magnesium*** **Aluminium Magnesium**	71	*Al unlegiert*	Al unalloyed	< 100	< 350	> 15
		72	*Al legiert Si < 1.5 %*	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	*Al legiert Si > 1.5 % - < 10 %*	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	*Al legiert Si > 10 %, Mg-Legierungen*	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	*Silber*	Silver	-	-	-

Optimal mit Schneidöl
Optimal with cutting oil

Geeignet mit Schneidöl
Suitable with cutting oil

Optimal mit Emulsion
Optimal with emulsion

KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING

CLASSIC

Ab Seite: From page:	N Normale Werkstoffe Normal materials											W Weiche Werkstoffe Soft materials			
MJ / M	60	62	60	64	64	72	72	74	60	74	74	86	86	87	87
MF	125	124	125	125		124		131	131	131					
UNJC / UNC / UNC(J)	154	154	154	154				156	156	156					
UNJF / UNF / UNF(J)	176	176	176	176				178	178	178					
UNEF / UN / UNS	198	198						199	199						
G / Rp / Rc / W / SV	204	205	205	205				206	206	206				207	207
NPT / NPTF	220														
PG / TR	222	222													
EG M / EG UNC / EG UNF		226	226					227	227						

	Vc (m/min) < Ø 20 mm Guide Line		N.10	N.20	N.20V	N.20TN	N.20TC	N.50	N.50V	N.60	N.60V	N.60TN	N.60TC	W.20	W.20DL	W.60	W.60DL	
	Standard +V / +NV	Beschichtet Coated TN / TC / DL / VS																
11	10 - 15	25 - 35			O E	O E	O E		O E		O E	O E	O E					11
12	10 - 15	25 - 35			O E	O E	O E		O E		O E	O E	O E					12
13	8 - 12	16 - 24				O E	O E					O E	O E					13
14	8 - 12	16 - 24			O	O E	O E		O		O	O E	O E					14
15	3 - 5	6 - 12																15
16	3 - 5	3 - 5																16
17	2 - 4																	17
18																		18
21	10 - 15	20 - 30				O	O E					O	O E					21
22	3 - 6	6 - 12																22
23	3 - 6	6 - 12																23
24		4 - 8																24
31	10 - 15	20 - 30	E				E						E					31
32	10 - 15	20 - 30			O E	O E	O E		O E		O E	O E	O E					32
41	4 - 8	4 - 8																41
42	3 - 5	3 - 5																42
51		6 - 12																51
52	4 - 8	4 - 8																52
53	2 - 4																	53
61	8 - 12	12 - 16		O						O								61
62	20 - 30	30 - 40	O E	E			O E	O E					O E					62
63	16 - 24		O	O E				O E		O E								63
64	16 - 24		O	E			O E	O E					O E					64
71	10 - 15	20 - 40		O				O		O				O E	O E	O E	O E	71
72	20 - 30	20 - 40		O E				O E		O E				O E	O E	O E	O E	72
73	10 - 15	20 - 30	E	E			E	E		E			E		O E		O E	73
74	10 - 15	20 - 30	E	E			E	E		E			E					74
81	20 - 30	30 - 50		E				E		E				E		E		81
82	8 - 16	16 - 24					E						E					82
83		8 - 16					E A						E A					83
91	20 - 30		E	O E				O E		O E								91
92		12 - 16					O						O					92
93		4 - 8																93
94		16 - 24					O						O					94

E *Geeignet mit Emulsion* Suitable with emulsion

A *Optimal mit Luft* Optimal with air

A *Geeignet mit Luft* Suitable with air

KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING

CLASSIC

AERO

Z Zähe Werkstoffe Tough materials					H Hochfeste Werkstoffe High tensile materials				S Sonderlegierte Werkstoffe Special alloys			SA Sonderlegierte Werkstoffe Special alloys			TL Titanleg. Titan. alloys	GG Grauguss / Alu-Guss Cast iron / Al casting	
88	88	89	90	90	94	94	96	96	46	99	46	47	47	46	47	102	102
134	134	134	134		136	136	137	137	138	138		140	140	139	140		
158	158	159	160		161	161	162	162	48	164	48	49	49	48	49		
180	180	181	182		184	184	185	185	50	186	50	51	51	50	51		
208	208	208	209				207									207	
			231									228	228	229	228		
											NEW						
Z.20V	Z.20VS	Z.60V Z.62V	Z.70VS	Z.73VS	H.20	H.20TC	H.50	H.50TC	S.20VS	S.60VS	S.70VX	SA.20	SA.50	SA.90	TL.20VS TL.51VS	GG.50NV	GG.50TC GG.53TC	
																		11
																		12
																		13
																		14
																		15
																		16
																		17
																		18
																		21
																		22
																		23
																		24
																		31
																		32
																		41
																		42
																		51
																		52
																		53
																		61
																		62
																		63
																		64
																		71
																		72
																		73
																		74
																		81
																		82
																		83
																		91
																		92
																		93
																		94

Bedingt geeignet
Limited

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

KLASSISCHES UND SYNCHRON-GEWINDESCHNEIDEN
CLASSIC THREAD CUTTING AND RIGID TAPPING

CLASSIC SYNCHRO

Ab Seite: From page:	K Spanbrecher Swarf breaker		QTAP Allrounder Allrounder			
MJ / M	104	105	61	106	61	107
MF	142		143	143	144	144
UNJC / UNC / UNC(J)			167	167	168	168
UNJF / UNF / UNF(J)			192	192	193	193
UNEF / UN / UNS						
G / Rp / Rc / W / SV			210	210	211	211
NPT / NPTF						
PG / TR						
EG M / EG UNC / EG UNF						

NEW NEW NEW NEW

	Vc (m/min) Guide Line Ø 5 - 10.9 mm	Ø 11 - 18.9 mm	Ø 19 - 31.9 mm	Ø 32 - 42 mm	K.13TC	K.13VS	Vc (m/min) Guide Line Ø 2.8 - 20 mm	Q.20VS	Q.23VS	Q.60VS	Q.63VS	
11	30 - 40	20 - 30	20 - 30	20 - 30	E	E	20 - 40	O E	O E	O E	O E	11
12	30 - 40	20 - 30	20 - 30	20 - 30	E	E	20 - 40	O E	O E	O E	O E	12
13	30 - 40	20 - 30	20 - 30	20 - 30	E	E	16 - 24	O E	O E	O E	O E	13
14	20 - 30	15 - 25	15 - 25	15 - 25	E	E	16 - 24	O E	O E	O E	O E	14
15	15 - 20	10 - 15	8 - 12	5 - 8	E	E	6 - 12	O E	O E	O E	O E	15
16	8 - 12	5 - 8	5 - 8	5 - 8	E	E						16
17												17
18												18
21							20 - 40	O E	O E	O E	O E	21
22							6 - 12	O E	O E	O E	O E	22
23							6 - 12	O E	O E	O E	O E	23
24							4 - 8	O E	O E	O E	O E	24
31	30 - 40	30 - 40	30 - 40	30 - 40	E	E	20 - 40	O E A	O E	O E A	O E	31
32	30 - 40	20 - 30	20 - 30	20 - 30	E	E	20 - 40	O E	O E	O E	O E	32
41												41
42												42
51							6 - 12	O E	O E	O E	O E	51
52							4 - 8	O E	O E	O E	O E	52
53												53
61							12 - 16	O E	O E	O E	O E	61
62	30 - 40	30 - 40	30 - 40	30 - 40	E	E	25 - 35	O E	O E	O E	O E	62
63	30 - 40	30 - 40	30 - 40	30 - 40	E	E	20 - 40	O E	O E	O E	O E	63
64	30 - 40	20 - 30	20 - 30	20 - 30	E	E	20 - 40	O E	O E	O E	O E	64
71							20 - 40	O E	O E	O E	O E	71
72							20 - 40	O E	O E	O E	O E	72
73							20 - 40	O E	O E	O E	O E	73
74	30 - 40	30 - 40	30 - 40	30 - 40	E	E	20 - 40	O E A	O E	O E A	O E	74
81							20 - 40	O E A	O E	O E A	O E	81
82							16 - 24	O E	O E	O E	O E	82
83	30 - 40	30 - 40	30 - 40	30 - 40	E	E	8 - 16	O E A	O E	O E A	O E	83
91							20 - 40	O E	O E	O E	O E	91
92							12 - 16	O E	O E	O E	O E	92
93												93
94							12 - 16	O E	O E	O E	O E	94

E *Geeignet mit Emulsion*
Suitable with emulsion

A *Optimal mit Luft*
Optimal with air

A *Geeignet mit Luft*
Suitable with air

SYNCHRON-GEWINDESCHNEIDEN — RIGID TAPPING

Ab Seite: From page:	RTS Synchro Synchro				Z Zähe Werkstoffe Tough materials		S Sonderlegierte Werkstoffe Special alloys	
MJ / M	108	108	109	109	90	90	46	On request
MF	145		145		134			
UNJC / UNC / UNC(J)	169		169		160		48	
UNJF / UNF / UNF(J)	194		194		182		50	
UNEF / UN / UNS								
G / Rp / Rc / W / SV			212		209			
NPT / NPTF								
PG / TR								
EG M / EG UNC / EG UNF					231			

NEW NEW

	RTS.20VS	RTS.23VS	RTS.60VS RTS.62VS	RTS.65VS	Z.70VS	Z.73VS	S.70VX	S.73VX
Vc (m/min) Guide Line Ø 2 - 2.8 mm								
Vc (m/min) Guide Line Ø 2.8 - 20 mm								
11	12 - 20	20 - 40	O E	O E	O E	O E			11
12	12 - 20	20 - 40	O E	O E	O E	O E	O E	O E	12
13	12 - 20	16 - 24	O E	O E	O E	O E	O E	O E	13
14	12 - 20	16 - 24	O E	O E	O E	O E	O E	O E	14
15	5 - 10	6 - 12	O E	O E	O E	O E	O E	O E	15
16									16
17									17
18									18
21	12 - 20	20 - 40	O E	O E	O E	O E			21
22	4 - 10	6 - 12	O E	O E	O E	O E	O E	O E	22
23	4 - 10	6 - 12	O E	O E	O E	O E	O E	O E	23
24	4 - 8	4 - 8	O E	O E	O E	O E	O E	O E	24
31	12 - 20	20 - 40	O E A	O E	O E A	O E			31
32	12 - 20	20 - 40	O E	O E	O E	O E	O E	O E	32
41									41
42									42
51	4 - 10	6 - 12	O	O	O	O	O E	O E	51
52		4 - 8			O	O	O	O	52
53									53
61	10 - 16	10 - 20	O E	O E	O E	O E			61
62									62
63	12 - 20	20 - 40	O E	O E	O E	O E			63
64	12 - 20	20 - 40	O E	O E	O E	O E			64
71	12 - 20	30 - 50	O	O	O	O			71
72	12 - 20	30 - 50	O E	O E	O E	O E			72
73	12 - 20	20 - 40	O E	O E	O E	O E			73
74	12 - 20	20 - 40	O E A	O E	O E A	O E			74
81	12 - 20	30 - 50	E A	E	E A	E			81
82	12 - 20	16 - 24	E	E	E	E			82
83	4 - 10	8 - 16	E A	E	E A	E			83
91	12 - 20	20 - 40	O E	O E	O E	O E			91
92	6 - 12	12 - 16	O E	O E	O E	O E			92
93									93
94	6 - 12	12 - 16	O E	O E	O E	O E			94

Bedingt geeignet
Limited

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

Gewindeschneiden klassisch
Classic thread cutting

MJ
S 46 SA 46/47 TL 47

UNJC
S 48 SA 48/49 TL 49

UNJF
S 50 SA 50/51 TL 51

M
N 60/62-85/114-115/118 NP 116-117 W 86-87
Z 88-91 ZX 93 H 94-97
S 98-99 SA 99-101 TL 100-101
GG 102-103

MF
N 124-133/146-148 Z 134-135 H 136-137
S 138 SA 139-141 TL 140-141

UNC, UNC(J)
N 154-157/170-171 Z 158-160 H 161-162
S 163-164 SA 165-166 TL 165

UNF, UNF(J), UNEF, UN, UNS
N 176-179/196-199 Z 180-182 H 184-185
S 186 SA 188-190 TL 188-189

G (BSP)**, Rp, Rc, W, SV Schaublin**
N 204-206/213-217 W 207 H 207
GG 207 Z 208-209

NPT, NPTF, PG, TR
N 220-223

EG M, EG UNC, EG UNF
N 226-227/230/233 Z 231/234 S 234
SA 228-229/232/234-235 TL 228/232/235

Kronengewindebohrer
Crown taps

M, MF, UN, G (BSP)
N 237-239

Kombi-Gewindebohrer
Combination drill/taps

M, MF, UNC, G (BSP)**, PG**
N 242-243

Gewindeschneiden klassisch und synchron
Classic thread cutting and Rigid Tapping

M
K 104-105 Q 61/106-107

MF
K 142 Q 143-144

UNC, UNF
Q 167-168 / 192-193

G (BSP)
Q 210-211

Synchron-Gewindeschneiden
Rigid Tapping

M
RTS 108-112 Z.70/Z.73 90-91

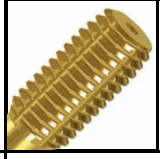
MF
RTS 145 Z.70 134-135

UNC, UNC(J)
RTS 169 Z.70 160

UNF, UNF(J)
RTS 194 Z.70 182

G (BSP)
RTS 212 Z.70 209

EG UNC, EG UNF
Z 231/234



Gewindeformen
Thread forming

M
FS 254-255 FPS 256-258 FAS 259-261

MF
FPS 262 FAS 262

UNC
FS 263 FPS 263 FAS 263

UNF
FS 264 FPS 264 FAS 264

G (BSP)
FPS 265 FAS 265

Schneideisen
Dies

M
N 272/286/288/289 Z 273/286 Z.LL 273

MF
N 274-276/287/288 Z 274-275

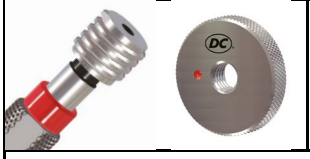
UNC
N 277

UNF, UNEF, UN, UNS
N 278-279

G (BSP), **R** (DIN EN 10226, ISO 7-1)
N 280/282/289 Z 281 MS 281

NPT, NPTF, PG, TR
N 283-284

W
N 285/289



Gewindelehren
Thread gauges

M
D 294-295

MF
D 296-299

UNC
D 300

UNF, UNEF
D 301

G (BSP), **PG**
D 302

NPT, NPTF
D 303

EG M, EG UNC, EG UNF
D 304

Gewindeschneidfutter SRT
Tapping chucks SRT

HSK 306 BT40 306
SK40/SK50 307 DIN 1835 B 308-309

Einsätze
Inserts

S 310 SC 311

Zubehör
Accessories

Vollhartmetall-Zentrierbohrer
Solide carbide spotting drills
C315VS 318

Vollhartmetall-Spiralbohrer
Solide carbide twist drills
FZ315VS 319 F313VS 320
F285VS 320 F286VS 320

Schneideisenhalter
Die stocks
D5810 322

Windeisen
Tap wrenches
D5820 322

Gewindebohrer-Verlängerungen
Tap extension sleeves
D5830 323 D5840 323

Technische Informationen
Liefer- und Zahlungsbedingungen

Weitere Informationen finden Sie unter
www.dcswiss.com

Technical information
Delivery and payment conditions

Further information are available on
www.dcswiss.com

Maschinengewindebohrer nano
Machine taps nano

M

TAN	338	TAZ	339	CMS	340

MF

TAN	341	TAZ	342	CMS	343

UNC

TAN	344	TAZ	345	CMS	346

UNF

TAN	347	TAZ	348	CMS	349

S

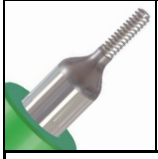
TAN	350	TAZ	351	CMS	352

SF

TAN	353	TAZ	354	CMS	355

SL

TAN	356	TAZ	357	CMS	358



Gewindelehren nano
Thread gauges nano

M

DN01	382	DN02	382	DZ04	383
DZ14	383	DN04	384	DN14	384

MF

DN01	385	DN02	385	DZ04	386
DZ14	386	DN04	387	DN14	387

UNC, UNF

DN01	388	DN02	388	DZ04	389
DZ14	389	DN04	390	DN14	390

S NIHS, **S** NIHS NT

DN01	391-392	DN02	391-392	DZ04	393
DZ14	393	DN04	394	DN14	394

SF NIHS, **SF** NIHS NT

DN01	395	DN02	395	DZ04	396
DZ14	396	DN04	397	DN14	397

SL

DN01	398	DN02	398

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.

Maschinengewindeformer nano
Machine thread formers nano

M

FA80	363	FA83	363
CFA80	370	CFA83	370

MF

FA80	364	FA83	364

UNC

FA80	365	FA83	365
CFA80	371	CFA83	371

UNF

FA80	366	FA83	366
CFA80	372	CFA83	372

S

FA80	367	FA83	367
CFA80	373	CFA83	373

SF

FA80	368	FA83	368

SL

FA80	369	FA83	369

Prüf-Gewindelehrdorne nano
Abnutzungsprüfdorne nano
Kalibrier-Gewindelehrdorne nano

Plug check gauges nano
Master plug gauges WEAR nano
Calibration thread plug gauges nano

M

RN05-1	399	RN15-1	399	RN05-2	400
RN15-2	400	RN05-3	401	RN15-3	401

MF

RN05-1	402	RN15-1	402	RN05-2	403
RN15-2	403	RN05-3	404	RN15-3	404

UNC, UNF

RN05-1	405	RN15-1	405	RN05-2	406
RN15-2	406				

S NIHS, **S** NIHS NT

RN05-1	407	RN15-1	407	RN05-2	408
RN15-2	408				

SF NIHS, **SF** NIHS NT

RN05-1	409	RN15-1	409	RN05-2	410
RN15-2	410				

S NIHS

EN00	411

Mit SCS-Zertifikat.
SCS certificate included.

FÜR VHM-GEWINDEFRÄSER UND GEWINDEWIRBLER FRAGEN SIE BITTE NACH UNSEREM

KATALOG TM!

FOR SOLID CARBIDE THREAD MILLING CUTTERS AND THREAD WHIRL CUTTERS PLEASE ASK FOR OUR

CATALOGUE TM!

MJ, UNJC, UNJF

Inhaltsverzeichnis — Maschinengewindebohrer MJ ISO 5855, UNJC / UNJF ISO 3161/ASME B1.15

Directory — Machine taps MJ ISO 5855, UNJC / UNJF ISO 3161/ASME B1.15

				S		SA	
Merkmale **Characteristics**				VS	R45 VX		R15
				NEW	NEW	NEW	NEW
Lochart **Hole type**							
				S320VS-4	**S370VX-3**	**SA320-4**	**SA350-3**
MJ 4H6H /4H5H	**ISO 5855**	***DIN lang*** **DIN long**	**DIN 371**	46	46	47	47
UNJC 3B	**ISO 3161/ASME B1.15**	***DIN lang*** **DIN long**	**DIN 371**	48	48	49	49
UNJF 3B	**ISO 3161/ASME B1.15**	***DIN lang*** **DIN long**	**DIN 371**	50	50	51	51

Composites

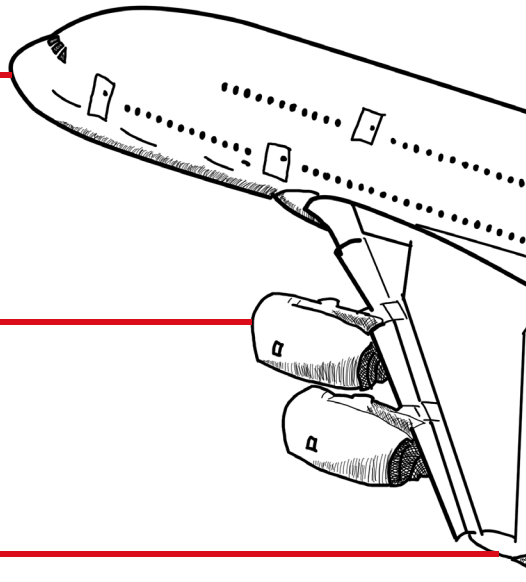
GWi3067VX

Super alloys

SA390-3

Titanium alloys

TL351VS-3

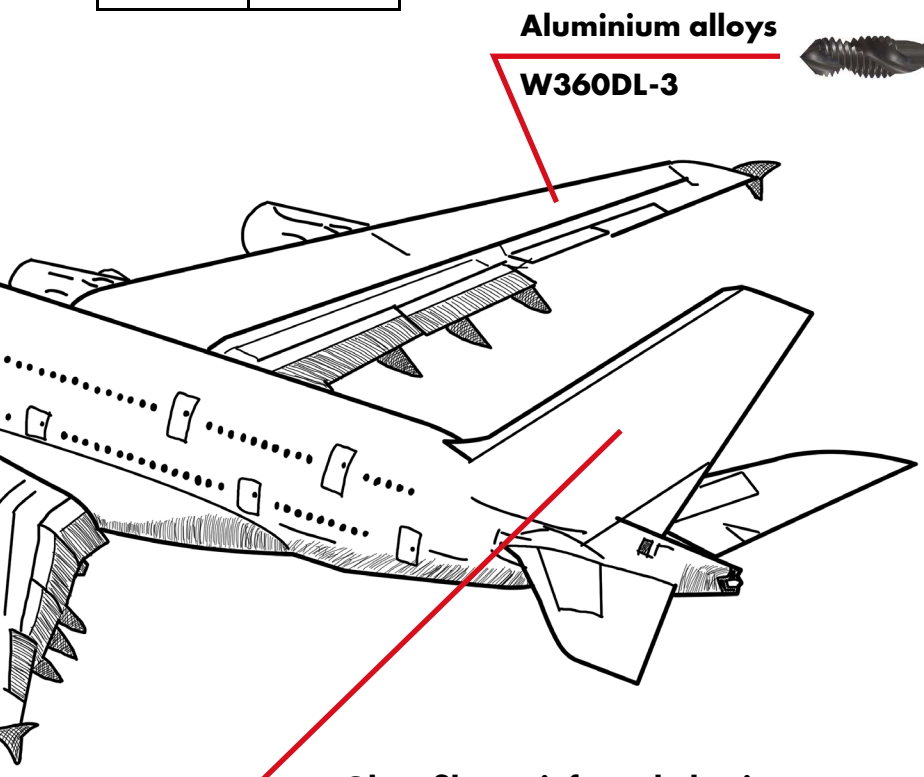


MJ, UNJC, UNJF

Inhaltsverzeichnis — Maschinengewindebohrer MJ ISO 5855, UNJC / UNJF ISO 3161/ASME B1.15

Directory — Machine taps MJ ISO 5855, UNJC / UNJF ISO 3161/ASME B1.15

SA	TL
R10	R15 VS
NEW	NEW
SA390-3	**TL351VS-3**
46	47
48	49
50	51



Aluminium alloys

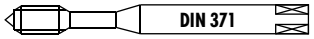
W360DL-3

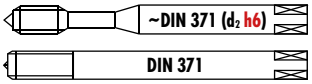
Glass fibre reinforced plastics

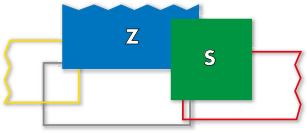
H350TC-3

MJ ISO 5855

PM







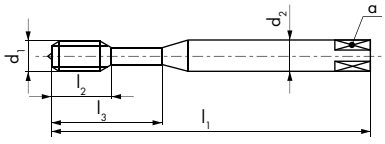
S320VS-4 — VS — 13 15 16 22 23 24 52

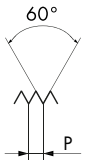
S370VX-3 — R45 — VX — CLASSIC — SYNCHRO — 15 22 23 24 51 52 61

aero

SA390-3 — R10 — 16 53

S320VS-4	S370VX-3		SA390-3
B 4 x P	C 2.5 x P		C 2.5 x P
4H5H	4H5H		4H5H





Ø d_1 MJ	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
3	0.5	56	12	18	3.5	2.7	3	2.55	● 198966
4	0.7	63	14	21	4.5	3.4	3	3.4	● 198967
5	0.8	70	15	25	6	4.9	3	4.3	● 198968
6	1	80	17	30	6	4.9	3	5.1	● 198969
8	1	90	20	35	8	6.2	3	7.1	● 198970
8	1.25	90	20	35	8	6.2	3	6.9	● 198971
10	1.25	100	22	39	10	8	3	8.9	● 198972
10	1.5	100	22	39	10	8	3	8.6	● 198973

Ø d_1 MJ	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.55	● 198974
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.4	● 198975
5	0.8	70	9	25	6	4.9	3	4.3	● 198976
6	1	80	11	30	6	4.9	3	5.1	● 198977
8	1	90	12.5	35	8	6.2	3	7.1	● 198978
8	1.25	90	12.5	35	8	6.2	3	6.9	● 198979
10	1.25	100	14	39	10	8	3	8.9	● 198980
10	1.5	100	14	39	10	8	3	8.6	● 198981

Ø d_1 MJ	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
3	0.5	56	12	3.5	2.7	3	2.55	● 199006
4	0.7	63	14	4.5	3.4	3	3.4	● 199007
5	0.8	70	15	6	4.9	3	4.3	● 199008
6	1	80	20	6	4.9	3	5.1	● 199009
8	1	90	25	8	6.2	3	7.1	● 199010
8	1.25	90	25	8	6.2	3	6.9	● 199011
10	1.25	100	30	10	8	3	8.9	● 199012
10	1.5	100	30	10	8	3	8.6	● 199013

≤MJ5x0.8 = 4H6H

MJ ISO 5855

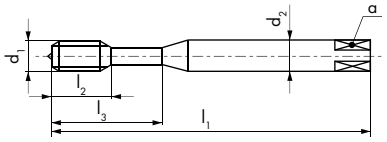
PM

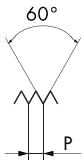
DIN 371

aero

SA320-4		15 16 52 64
SA350-3	R15	15 16 52 64
TL351VS-3	R15 VS	41 42

SA320-4	SA350-3	TL351VS-3
	< 1.5 x D	< 2 x D
		< 2 x D
B 4 x P	C 2.5 x P	C 2.5 x P
4H5H	4H5H	4H5H



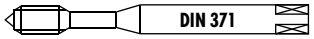


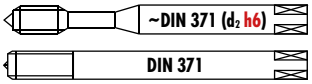
Ø d_1 MJ	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			SA320-4 ID	SA350-3 ID	TL351VS-3 ID
3	0.5	56	12		3.5	2.7	3	2.55	198990	198998	198982
4	0.7	63	14		4.5	3.4	3	3.4	198991	198999	198983
5	0.8	70	15		6	4.9	3	4.3	198992	199000	198984
6	1	80	15	23	6	4.9	3	5.1	198993	199001	198985
8	1	90	18	29	8	6.2	3	7.1	198994	199002	198986
8	1.25	90	18	29	8	6.2	3	6.9	198995	199003	198987
10	1.25	100	20	33	10	8	3	8.9	198996	199004	198988
10	1.5	100	20	33	10	8	3	8.6	198997	199005	198989

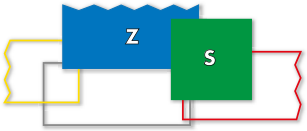
≤MJ5x0.8 = 4H6H

UNJC ISO 3161/ASME B1.15

PM







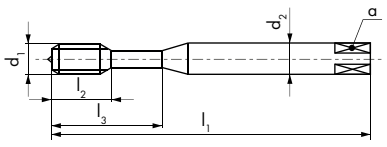
S320VS-4 VS — 13 15 16 22 23 24 52

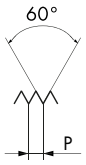
S370VX-3 R45 VX CLASSIC SYNCHRO — 15 22 23 24 51 52 61

aero

SA390-3 R10 — 16 53

S320VS-4	S370VX-3		SA390-3
B 4 x P	C 2.5 x P		C 2.5 x P
3B	3B		3B





Ø" d_1 UNJC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
6	32	3.5	56	13	20	4	3	3	2.8	• 199014
8	32	4.16	63	14	21	4.5	3.4	3	3.45	• 199015
10	24	4.82	70	15	25	6	4.9	3	3.9	• 199016
1/4	20	6.35	80	17	30	7	5.5	3	5.2	• 199017

Ø" d_1 UNJC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
6	32	3.5	56	6.5	20	4 (h9)	3	3	2.8	• 199018
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.45	• 199019
10	24	4.82	70	9	25	6	4.9	3	3.9	• 199020
1/4	20	6.35	80	11	30	6	4.9	3	5.2	• 199021

Ø" d_1 UNJC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
6	32	3.5	56	13	4	3	3	2.8	• 199034
8	32	4.16	63	14	4.5	3.4	3	3.45	• 199035
10	24	4.82	70	15	6	4.9	3	3.9	• 199036
1/4	20	6.35	80	20	7	5.5	3	5.2	• 199037

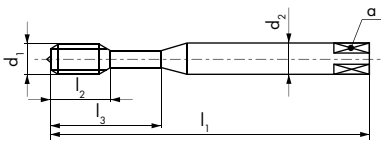
UNJC ISO 3161/ASME B1.15

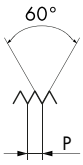
PM

DIN 371

aero

SA320-4		15 16 52 64		
SA350-3	R15	15 16 52 64		
TL351VS-3	R15		VS	41 42





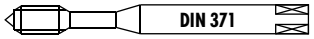
	SA320-4	SA350-3		TL351VS-3
		< 1.5 x D		< 2 x D < 2 x D
	B 4 x P	C 2.5 x P		C 2.5 x P
	3B	3B		3B

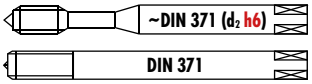
Ø" d_1 UNJC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
6	32	3.5	56	13		4	3	3	2.8	199026	199030	199022
8	32	4.16	63	14		4.5	3.4	3	3.45	199027	199031	199023
10	24	4.82	70	15		6	4.9	3	3.9	199028	199032	199024
1/4	20	6.35	80	15	23	7	5.5	3	5.2	199029	199033	199025

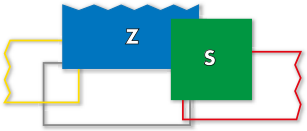
UNJF

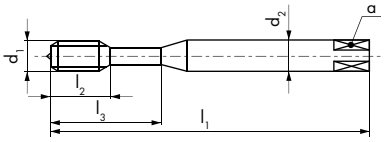
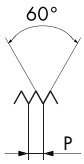
ISO 3161/ASME B1.15

PM







	S320VS-4	S370VX-3		SA390-3
				

Ø" d_1 UNJF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
10	32	4.82	70	15	25	6	4.9	3	4.1	● 199038
1/4	28	6.35	80	17	30	7	5.5	3	5.55	● 199039
5/16	24	7.93	90	20	35	8	6.2	3	7	● 199040
3/8	24	9.52	100	22	39	10	8	3	8.6	● 199041

Ø" d_1 UNJF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
10	32	4.82	70	9	25	6	4.9	3	4.1	● 197707
1/4	28	6.35	80	11	30	6	4.9	3	5.55	● 197708
5/16	24	7.93	90	12.5	35	8	6.2	3	7	● 197709
3/8	24	9.52	100	14	39	10	8	3	8.6	● 197710

Ø" d_1 UNJF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
10	32	4.82	70	15	6	4.9	3	4.1	● 199049
1/4	28	6.35	80	20	7	5.5	3	5.55	● 199050
5/16	24	7.93	90	25	8	6.2	3	7	● 199051
3/8	24	9.52	100	30	10	8	3	8.6	● 199052

UNJF

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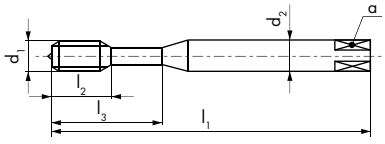
PM

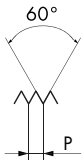
DIN 371

aero

SA320-4		15 16 52 64		
SA350-3	R15	15 16 52 64		
TL351VS-3	R15	VS	41 42	

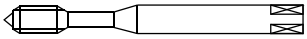
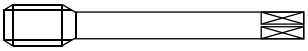
SA320-4	SA350-3		TL351VS-3
	< 1.5 x D		< 2 x D
			< 2 x D
B 4 x P	C 2.5 x P		C 2.5 x P
3B	3B		3B





Ø" d_1 UNJF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
10	32	4.82	70	15		6	4.9	3	4.1	174976	188175	199042
1/4	28	6.35	80	15	23	7	5.5	3	5.55	175993	199046	199043
5/16	24	7.93	90	18	29	8	6.2	3	7	175995	199047	199044
3/8	24	9.52	100	20	33	10	8	3	8.6	175997	199048	199045

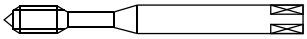
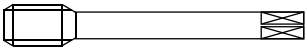
M *Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13*
Directory — Machine taps ISO DIN 13

		N						
Merkmale **Characteristics**				V	TiN TiCN			V
Lochart **Hole type**								
		**N310-3**	**N320-3 N320-4**	**N320V-3 N320V-4**	**N320TN-3/-4 N320TC-3/-4**	**N321-3 N321-4**	**N330-3 N330-4**	**N330V-3 N330V-4**
DIN lang **DIN long**	**DIN 371**	60 / 62	62 / 64	60 / 64	64	70	70	70
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	60 / 62	62 / 64	60 / 64	64	70	70	70
Übermass **Oversize**	**ISO 3 6G**		68	68				
Übermass **Oversize**	**7G**		68					
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**		68					
Feintoleranz **Fine tolerance**	**ISO 1 4H**		66					
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**	62	66	66				
		**N410-3**	**N420-4**	**N420V-4**	**N420TN-4 N420TC-4**	**N421-4**	**N430-4**	**N430V-4**
DIN lang **DIN long**	**DIN 376**	63	65	65	65	71	71	71
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	63	65	65	65	71	71	71
Übermass **Oversize**	**ISO 3 6G**		69	69				
Übermass **Oversize**	**7G**		69					
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**		69 / 71					
Feintoleranz **Fine tolerance**	**ISO 1 4H**		67					
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**	63	67	67				

M *Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13*
Directory — Machine taps ISO DIN 13

N								
R15 V	R40	R40 V	R40 TiN TiCN	R40 V E 1.5xP	R40	R40 V		V
N350-3 N350V-3	**N360-3**	**N360V-3**	**N360TN-3 N360TC-3**	**N360-5 N360V-5**	**N361-3**	**N362V-3**	**N520-4**	**N520V-4**
72	74	60 / 74	74	80	80	80		
							82	82
72	74	60 / 74	74	80	80	80	82	82
	76	76						
	78	78						
	78	78						
	78							
	76	76						
N450-3 N450V-3	**N460-3**	**N460V-3**	**N460TN-3 N460TC-3**	**N460-5 N460V-5**	**N461-3**	**N462V-3**	**N620-4**	**N620V-4**
73	75	75	75	81	81	81		
							83	83
73	75	75	75	81	81	81	83	83
	77	77						
	79	79						
	79	79						
	79							
	77	77						

M *Inhaltsverzeichnis — Maschinen- und Handgewindebohrer ISO DIN 13*
Directory — Machine and hand taps ISO DIN 13

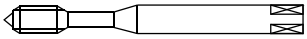
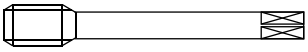
		N						
Merkmale **Characteristics**		TiN	R40	R40 V	R40 TiN		R40	
Lochart **Hole type**								
		**N520TN-4**	**N560-3**	**N560V-3**	**N560TN-3**	**N1120-4**	**N1160-3**	**N1110 -1 -2 -3 -S**
DIN lang **DIN long**	**DIN 371**							
Extra-lang **Extra-long**	**DC**	82	84	84	84			
ISO kurz **ISO short**	**ISO 529**					118	118	60 / 114
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	82	84	84	84	118	118	60 / 114
Übermass **Oversize**	**ISO 3 6G**							
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							
		**N620TN-4**	**N660-3**	**N660V-3**	**N660TN-3**	**N1220-4**	**N1260-3**	**N1210 -1 -2 -3 -S**
DIN lang **DIN long**	**DIN 376**							
Extra-lang **Extra-long**	**DC**	83	85	85	85			
ISO kurz **ISO short**	**ISO 529**					118	118	60 / 115
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	83	85	85	85	118	118	60 / 115
Übermass **Oversize**	**ISO 3 6G**							
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							

M

Inhaltsverzeichnis — Maschinen- und Handgewindebohrer ISO DIN 13
Directory — Machine and hand taps ISO DIN 13

N	W				Z			
		DLC	R40	R40 DLC	V	VS	R40 V	R40 VS
NEW								
NP110-S -1 -2 -3 -S	**W320-3 W320-4**	**W320DL-3 W320DL-4**	**W360-3**	**W360DL-3**	**Z320V-3 Z320V-4**	**Z320VS-4**	**Z360V-3 Z362V-3**	**Z360VS-3 Z362VS-3**
	86	86	87	87	88	88	89	90
116								
116	86	86	87	87	88	88	89	90
NP210-S -1 -2 -3 -S	**W420-4**	**W420DL-4**	**W460-3**	**W460DL-3**	**Z420V-4**	**Z420VS-4**	**Z462V-3**	**Z462VS-3**
	86	86	87	87	88	88	89	91
117								
117	86	86	87	87	88	88	89	91

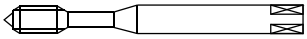
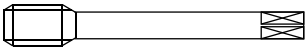
M *Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13*
Directory — Machine taps ISO DIN 13

		Z		ZX	H		S	
Merkmale **Characteristics**		R45 VS	R45 VS	B 4 x P	TiCN	R25 TiCN	VS	R35 VS
Lochart **Hole type**								
		**Z370VS-3**	**Z373VS-3**	**ZX320-4**	**H320-4 H320TC-4**	**H350-3 H350TC-3**	**S320VS-4**	**S360VS-3**
DIN lang **DIN long**	**DIN 371**	90	90	93	94	96	98	99
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	90	90	93	94	96	98	99
Übermass **Oversize**	**ISO 3 6G**					96		
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**	90					98	
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							
		**Z470VS-3**	**Z473VS-3**	**ZX420-4**	**H420-4 H420TC-4**	**H450-3 H450TC-3**	**S420VS-4**	**S460VS-3**
DIN lang **DIN long**	**DIN 376**	91	91	93	95	97	98	99
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	91	91	93	95	97	98	99
Übermass **Oversize**	**ISO 3 6G**					97		
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							

M *Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13*
Directory — Machine taps ISO DIN 13

SA			TL		GG			
	R15	R10	VS	R15 VS	R15 NV	R15 TiCN	R15 TiCN	R15 NV
SA320-4	**SA350-3**	**SA390-3**	**TL320VS-4**	**TL351VS-3**	**GG350NV-3**	**GG350TC-3**	**GG353TC-3**	**GG550NV-3**
100	100	99	100	100	102	102	102	
								102
100	100	99	100	100	102	102	102	102
100	100	99	100	100				
SA420-4	**SA450-3**		**TL420VS-4**	**TL451VS-3**	**GG450NV-3**	**GG450TC-3**	**GG453TC-3**	**GG650NV-3**
101	101		101	101	103	103	103	
								103
101	101		101	101	103	103	103	103
101	101		101	101				

M *Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13*
Directory — Machine taps ISO DIN 13

		K			QTAP			
Merkmale **Characteristics**		TiCN	TiCN	VS	VS	VS	R40 VS	R40 VS
					NEW	NEW	NEW	NEW
Lochart **Hole type**								
		**K313TC-3**			**Q320VS-4**	**Q323VS-4**	**Q360VS-3**	**Q363VS-3**
DIN lang **DIN long**	**DIN 371**	104			61 / 106	106	61 / 107	107
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	104			61 / 106	106	61 / 107	107
Übermass **Oversize**	**ISO 3 6G**							
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm** **+ 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							
		**K413TC-3**	**K613TC-3**	**K613VS-3**	**Q420VS-4**	**Q423VS-4**	**Q460VS-3**	**Q463VS-3**
DIN lang **DIN long**	**DIN 376**	104			106	106	107	107
Extra-lang **Extra-long**	**DC**		105	105				
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
Toleranz **Tolerance**	**ISO 2 6H**	104	105	105	106	106	107	107
Übermass **Oversize**	**ISO 3 6G**							
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm** **+ 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							

M *Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13*
Directory — Machine taps ISO DIN 13

RTS							
VS	VS	R40 VS	R40 VS	R40 E 1.5xP VS	R40 E 1.5xP VS	VS	R40 VS
RTS320VS-4	**RTS323VS-4**	**RTS360VS-3 RTS362VS-3**	**RTS365VS-3**	**RTS362VS-5**	**RTS365VS-5**	**RTS523VS-4**	**RTS565VS-3**
108	108	109	109	111	111		
						112	112
108	108	109	109	111	111	112	112
		110					
		110					
RTS420VS-4	**RTS423VS-4**	**RTS462VS-3**	**RTS465VS-3**			**RTS623VS-4**	**RTS665VS-3**
108	108	109	109				
						112	112
108	108	109	109			112	112
		110					
		110					

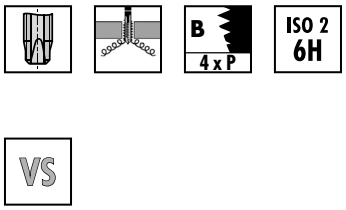
Gewindebohrer-Sortimente
Tap assortments

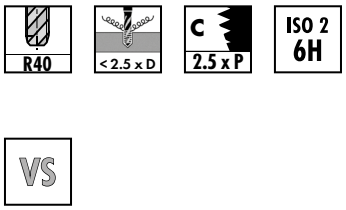
BOXSET				D5855	D5860	D5891
D5855	ISO 2 6H	N1110-S N1210-S	M3, M4, M5, M6, M8, M10, M12			
D5860	ISO 2 6H	N1110-S N1210-S	M3, M4, M5, M6, M8, M10, M12			
	HSS	FO DIN 338 FO DIN 338	D2.5, 3.3, 4.2, 5.0, 6.8, 8.5, 10.2			
D5891	ISO 2 6H	N310-3 N410-3	M3, M4, M5, M6, M8, M10, M12			
No D5855 / D5860 / D5891				ID	ID	ID
M3 - M12				● 118728	● 118733	● 170922

BOXSET				D5892
D5892	ISO 2 6H	N320V-4	M3, M4, M5, M6, M8, M10	
No D5892				ID
M3 - M10				● 170921

BOXSET				D5896
D5896	R40 < 2.5 x D ISO 2 6H	N360V-3	M3, M4, M5, M6, M8, M10	
No D5896				ID
M3 - M10				● 167599

CLASSIC | SYNCHRO | PM | DIN 371

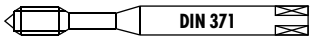
BOXSET	D5893
Q320VS-4  M3, M4, M5 M6, M8, M10	
No D5893	**ID**
M3 - M10	● 197104

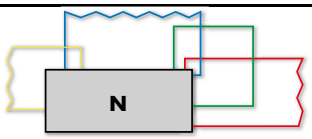
BOXSET	D5897
Q360VS-3  M3, M4, M5 M6, M8, M10	
No D5897	**ID**
M3 - M10	● 197105

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE



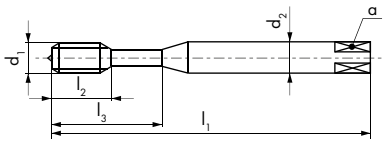


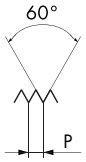
	N310-3	N310-3 LH	N320-3
	< 1.5 x D	< 1.5 x D	
	C 2.5 x P	C 2.5 x P	2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H

N310-3 31 62 73 74 91

N310-3 LH LH 31 62 73 74 91

N320-3 62 63 64 72 73 74 81 91





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
1	0.25	40	5.5		2.5	2.1	3	0.75	● 150167		
1.1	0.25	40	5.5		2.5	2.1	3	0.85	● 174745		
1.2	0.25	40	5.5		2.5	2.1	3	0.95	● 150168		
1.4	0.3	40	7		2.5	2.1	3	1.1	● 150169		
1.5	0.3	40	7		2.5	2.1	3	1.2	● 174752		
1.6	0.35	40	8		2.5	2.1	3	1.25	● 174753		
1.7	0.35	40	8		2.5	2.1	3	1.35	● 174754		
1.8	0.35	40	8		2.5	2.1	3	1.45	● 174755		
2	0.4	45	8		2.8	2.1	3	1.6	● 101439	● 111460	
2.2	0.45	45	9		2.8	2.1	3	1.75	● 174756		
2.3	0.4	45	9		2.8	2.1	3	1.9	● 174757		
2.5	0.45	50	10		2.8	2.1	3	2.05	● 101440	● 111461	
2.6	0.45	50	10		2.8	2.1	3	2.15	● 101441		
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101442	● 111462	
3.5	0.6	56	13	20	4	3	3	2.9	● 101443		
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101444	● 111464	
5	0.8	70	15	25	6	4.9	* 3	4.2	● 101445	● 111465	* 101465
6	1	80	17	30	6	4.9	* 3	5	● 101446	● 111466	* 101466
8	1.25	90	20	35	8	6.2	3	6.8	● 101447		
10	1.5	100	22	39	10	8	3	8.5	● 101438		

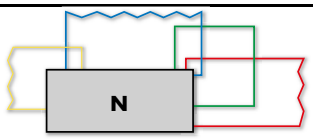
*N320-3 = 2

≤M1.5 ISO 1 4H

M ISO DIN 13

HSSE

DIN 376

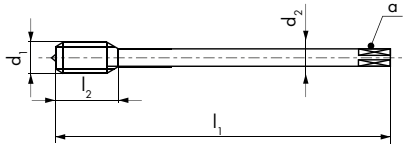


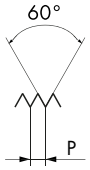
N410-3		31 62 73 74 91
N410-3 LH	LH	31 62 73 74 91

N410-3	N410-3 LH		

< 1.5 x D

< 1.5 x D





C 2.5 x P

C 2.5 x P

ISO 2 6H

ISO 2 6H

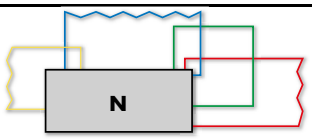
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
3	0.5	56	12	2.2	1.8	3	2.5	• 101897	
4	0.7	63	14	2.8	2.1	3	3.3	• 101924	
5	0.8	70	15	3.5	2.7	3	4.2	• 101942	
6	1	80	17	4.5	3.4	3	5	• 101953	
7	1	80	17	5.5	4.3	3	6	• 142645	• 111491
8	1.25	90	20	6	4.9	3	6.8	• 101958	• 111492
10	1.5	100	22	7	5.5	3	8.5	• 101866	• 111478
12	1.75	110	24	9	7	3	10.2	• 101870	• 111479
14	2	110	28	11	9	3	12	• 101874	• 111480
16	2	110	30	12	9	3	14	• 101880	• 111481
18	2.5	125	33	14	11	3	15.5	• 101883	• 111482
20	2.5	140	36	16	12	3	17.5	• 101885	• 125530
22	2.5	140	36	18	14.5	3	19.5	* 101888	
24	3	160	39	18	14.5	4	21	• 101891	• 111485
27	3	160	42	20	16	4	24	• 101895	• 111486
30	3.5	180	45	22	18	4	26.5	• 101901	• 111487
33	3.5	180	48	25	20	4	29.5	* 101907	
36	4	200	51	28	22	4	32	• 101915	• 111488
39	4	200	55	32	24	4	35	• 101922	
42	4.5	200	55	32	24	4	37.5	• 101932	
48	5	250	63	36	29	4	43	• 111489	
56	5.5	280	71	45	35	5	50.5	• 111447	

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

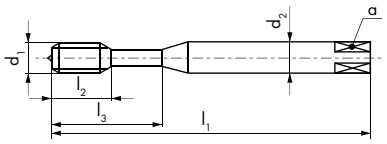
PM | HSSE

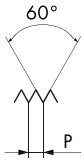
DIN 371



N320-4		62 63 64 72 73 74 81 91	
N320V-4	V	11 12 31 32	
N320TN-4	TiN	11 12 13 14 32	
N320TC-4	TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83	

N320-4	N320V-4	N320TN-4	N320TC-4
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
* 1	0.25	40	5.5		2.5	2.1	2	0.75	● 111467			
* 1.1	0.25	40	5.5		2.5	2.1	2	0.85	● 111468			
* 1.2	0.25	40	5.5		2.5	2.1	2	0.95	● 111469			
* 1.4	0.3	40	7		2.5	2.1	2	1.1	● 111470			
* 1.5	0.3	40	7		2.5	2.1	2	1.2	● 111471			
* 1.6	0.35	40	8		2.5	2.1	2	1.25	● 101454			
* 1.7	0.35	40	8		2.5	2.1	2	1.35	● 101455			
* 1.8	0.35	40	8		2.5	2.1	2	1.45	● 101456			
* 2	0.4	45	8		2.8	2.1	2	1.6	● 101458	● 101536	● 101528	● 152900
* 2.2	0.45	45	9		2.8	2.1	2	1.75	● 101459			
* 2.3	0.4	45	9		2.8	2.1	2	1.9	● 101460			
2.5	0.45	50	10		2.8	2.1	3	2.05	● 101483	● 101545	● 101530	● 101522
2.6	0.45	50	10		2.8	2.1	3	2.15	● 101484			
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101485	● 101546	● 101531	● 101523
3.5	0.6	56	13	20	4	3	3	2.9	● 101491	● 101547		
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101495	● 101548	● 101532	● 101524
5	0.8	70	15	25	6	4.9	3	4.2	● 101499	● 101549	● 101533	● 101525
6	1	80	17	30	6	4.9	3	5	● 101503	● 101550	● 101534	● 101526
8	1.25	90	20	35	8	6.2	3	6.8	● 101506	● 101551	● 101535	● 101527
10	1.5	100	22	39	10	8	3	8.5	● 101481	● 101544	● 101529	● 101521

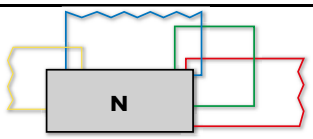
*N320-3 / N320V-3
N320TN-3 / N320TC-3 — 2.5 x P

≤M1.5 — ISO 1 4H

M ISO DIN 13

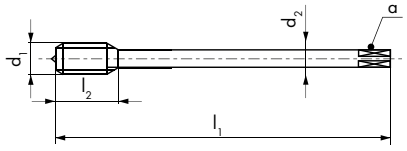
HSSE

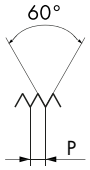
DIN 376



N420-4		62 63 64 72 73 74 81 91	
N420V-4	V	11 12 31 32	
N420TN-4	TiN	11 12 13 14 32	
N420TC-4	TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83	

N420-4	N420V-4	N420TN-4	N420TC-4
B 4xP ISO 2 6H	B 4xP ISO 2 6H	B 4xP ISO 2 6H	B 4xP ISO 2 6H





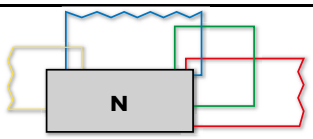
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	56	12	2.2	1.8	3	2.5	● 102119	● 143418		
4	0.7	63	14	2.8	2.1	3	3.3	● 102146	● 102279		
5	0.8	70	15	3.5	2.7	3	4.2	● 102171	● 102280	● 146297	
6	1	80	17	4.5	3.4	3	5	● 102182	● 102282	● 147439	
7	1	80	17	5.5	4.3	3	6	● 102189	● 144713		
8	1.25	90	20	6	4.9	3	6.8	● 102195	● 102285	● 102251	● 102233
9	1.25	90	20	7	5.5	3	7.8	● 102202			
10	1.5	100	22	7	5.5	3	8.5	● 102061	● 102263	● 102240	● 102228
11	1.5	100	19	8	6.2	3	9.5	● 162770			
12	1.75	110	24	9	7	3	10.2	● 102072	● 102265	● 102243	● 102229
14	2	110	28	11	9	3	12	● 102081	● 102267	● 102245	
16	2	110	30	12	9	3	14	● 102090	● 102269	● 102247	● 102231
18	2.5	125	33	14	11	3	15.5	● 102097	● 102271		
20	2.5	140	36	16	12	3	17.5	● 102101	● 102273	● 102248	● 102232
22	2.5	140	36	18	14.5	3	19.5	● 102106	● 102275		
24	3	160	39	18	14.5	4	21	● 102110	● 102278	● 144220	● 163736
27	3	160	42	20	16	4	24	● 102117	● 143856		
30	3.5	180	45	22	18	4	26.5	● 102124	● 105124		
33	3.5	180	48	25	20	4	29.5	● 102130	● 146968		
36	4	200	51	28	22	4	32	● 102137	● 143430		
39	4	200	55	32	24	4	35	● 102144	● 158724		
42	4.5	200	55	32	24	4	37.5	● 102158	● 143107		
45	4.5	220	59	36	29	4	40.5	● 110225	● 159565		
48	5	250	63	36	29	4	43	● 110226	● 157517		
56	5.5	280	71	45	35	5	50.5	● 110229	● 158178		

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

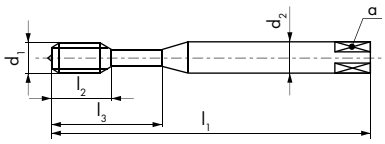
PM | HSSE

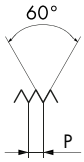
DIN 371



N320-4		62 63 64 72 73 74 81 91	
N320-4 LH	LH	62 63 64 72 73 74 81 91	
N320V-4 LH	V	LH	11 12 31 32

N320-4	N320-4 LH	N320V-4 LH
B 4 x P	B 4 x P	B 4 x P
ISO 1 4H	ISO 2 6H	ISO 2 6H





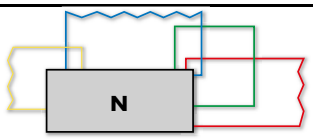
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
* 2	0.4	45	8		2.8	2.1	2	1.6	● 162503	● 111472	● 162771
2.5	0.45	50	10		2.8	2.1	3	2.05	● 159345		
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101487	● 111473	● 162772
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101493	● 111474	● 162773
5	0.8	70	15	25	6	4.9	3	4.2	● 101497	● 111475	● 162774
6	1	80	17	30	6	4.9	3	5	● 101501	● 111476	● 162775
10	1.5	100	22	39	10	8	3	8.5	★ 146484		

*N320-3 / N320V-3 2.5 x P

M ISO DIN 13

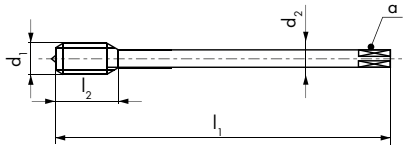
HSSE

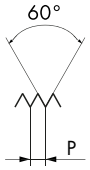
DIN 376



N420-4		62 63 64 72 73 74 81 91	
N420-4 LH	LH	62 63 64 72 73 74 81 91	
N420V-4 LH	V	LH	11 12 31 32

N420-4	N420-4 LH	N420V-4 LH





	B 4xP	B 4xP	B 4xP
	ISO 1 4H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
8	1.25	90	20	6	4.9	3	Δ6.8	● 102193	● 102198	● 142621
10	1.5	100	22	7	5.5	3	8.5	● 102059	● 102064	● 143287
12	1.75	110	24	9	7	3	10.2	● 102070	● 102040	● 146583
14	2	110	28	11	9	3	12		● 102084	● 146563
16	2	110	30	12	9	3	14		● 102093	● 143108
20	2.5	140	36	16	12	3	17.5		● 102103	● 145579
24	3	160	39	18	14.5	4	21		● 111493	● 145578

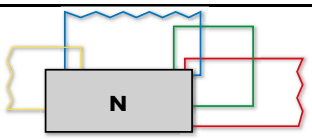
Δ ISO 1 4H = 6.70

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

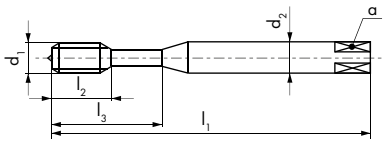
PM HSSE

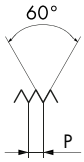
DIN 371



N320-4		62 63 64 72 73 74 81 91
N320V-4	V	11 12 31 32

N320-4	N320V-4	N320-4	N320-4





B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 3 6G	ISO 3 6G	7G	6H +0.1 mm

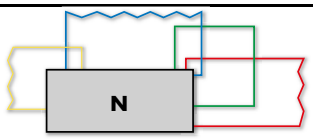
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID
* 2	0.4	45	8		2.8	2.1	2	1.6	101457	0.019	143584	0.019			
2.5	0.45	50	10		2.8	2.1	3	2.05	101482	0.020	150522	0.020			
3	0.5	56	12	18	3.5	2.7	3	2.5	101486	0.020	143116	0.020	101489	0.036	101488
3.5	0.6	56	13	20	4	3	3	2.95	101490	0.021					
4	0.7	63	14	21	4.5	3.4	3	3.35	101494	0.022	143087	0.022	101496	0.041	111522
5	0.8	70	15	25	6	4.9	3	4.25	101498	0.024	143088	0.024	101500	0.044	111523
6	1	80	17	30	6	4.9	3	5	101502	0.026	143089	0.026	101504	0.050	111524
8	1.25	90	20	35	8	6.2	3	6.8	101505	0.028	143604	0.028			

*N320-3 / N320V-3 2.5 x P

M ISO DIN 13

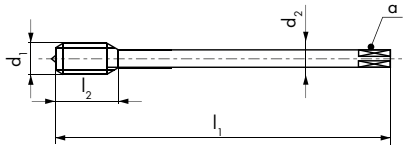
HSSE

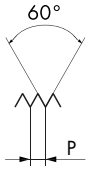
DIN 376



N420-4		62 63 64 72 73 74 81 91	
N420V-4	V	11 12 31 32	

N420-4	N420V-4	N420-4	N420-4
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 3 6G	ISO 3 6G	7G	6H +0.1 mm



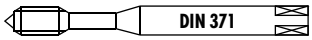


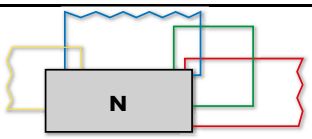
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID
8	1.25	90	20	6	4.9	3	6.8	● 102194	0.028	● 145246	0.028	● 102199	0.052	● 102196
10	1.5	100	22	7	5.5	3	8.5	● 102060	0.032	● 143726	0.032	● 102065	0.060	● 102062
12	1.75	110	24	9	7	3	10.3	● 102071	0.034	● 145655	0.034	● 102076	0.066	● 102073
16	2	110	30	12	9	3	14	● 135531	0.038	● 162795	0.038	● 102094	0.072	● 102091

M ISO DIN 13

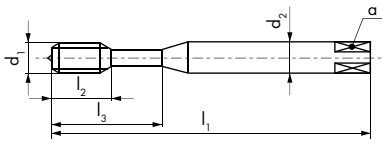
≤ Ø 2.8 > Ø 2.8

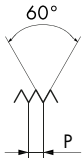
PM | HSSE





	N321-4	N330-4	N330V-4
N321-4			61 62 63 64 71 72 73 74 81 91
N330-4			63 72
N330V-4			11 12
	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID
* 1	0.25	40	5.5		2.5	2.1	2	0.75		• 101558	
* 1.1	0.25	40	5.5		2.5	2.1	2	0.85		* 101559	
* 1.2	0.25	40	5.5		2.5	2.1	2	0.95		• 101560	
* 1.4	0.3	40	7		2.5	2.1	2	1.1		• 101561	
* 1.6	0.35	40	8		2.5	2.1	2	1.25		• 101562	• 151246
* 2	0.4	45	8		2.8	2.1	2	1.6	• 101552	• 105125	• 101572
2.5	0.45	50	10		2.8	2.1	* 3	2.05	• 101553	• 101565	• 101573
3	0.5	56	12	18	3.5	2.7	* 3	2.5	• 101555	• 101567	• 101574
3.5	0.6	56	13	20	4	3	2	2.9		• 101568	
4	0.7	63	14	21	4.5	3.4	3	3.3	• 101557	• 101569	• 101576
5	0.8	70	15	25	6	4.9	3	4.2		• 101570	• 101577
6	1	80	17	30	6	4.9	3	5		• 101571	• 101578

*N320-3 / N320V-3 / N330V-3

* N330-4 = 2

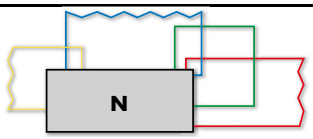
* N330V-4 = 2

≤M1.5 ISO 1 4H

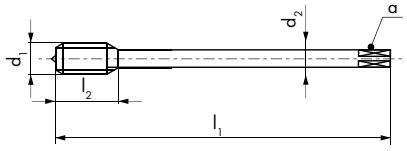
M ISO DIN 13

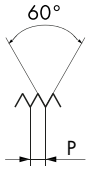
HSSE

DIN 376



	N420-4	N421-4	N430-4	N430V-4
	6H +0.2mm	ISO 2 6H	ISO 2 6H	ISO 2 6H





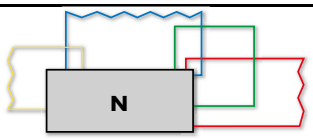
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	ID	ID
4	0.7	63	14	2.8	2.1	3	3.3		● 102293		
5	0.8	70	15	3.5	2.7	3	4.2		● 102294		
6	1	80	17	4.5	3.4	3	5		● 102295		
8	1.25	90	20	6	4.9	3	6.8	● 102197	● 102296	● 102301	● 102306
10	1.5	100	22	7	5.5	3	8.5	● 102063	● 102286	● 102297	● 102302
12	1.75	110	24	9	7	3	10.2	● 102074	● 102287	● 102298	● 102303
16	2	110	30	12	9	3	14	● 102092	● 102289		

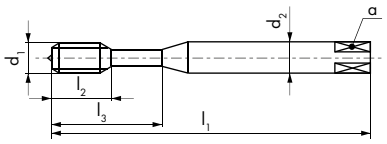
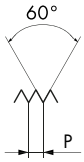
M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE

DIN 371



	N350-3	N350V-3		
				

N350-3 — R15 — 62 63 64 72 73 74 81 91

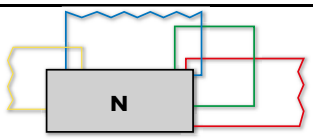
N350V-3 — R15 — V — 11 12 31 32

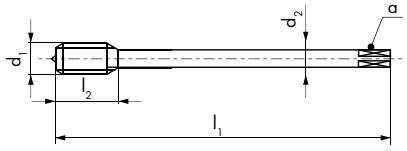
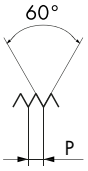
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N350-3 ID	N350V-3 ID
2	0.4	45	8		2.8	2.1	2	1.6	101580	101593
2.3	0.4	45	9		2.8	2.1	2	1.9	101581	
2.5	0.45	50	10		2.8	2.1	2	2.05	101582	101594
2.6	0.45	50	10		2.8	2.1	2	2.15	101583	
3	0.5	56	12	18	3.5	2.7	2	2.5	101584	101595
3.5	0.6	56	13	20	4	3	2	2.9	101585	
4	0.7	63	14	21	4.5	3.4	2	3.3	101587	101596
5	0.8	70	15	25	6	4.9	3	4.2	101589	101597
6	1	80	17	30	6	4.9	3	5	101591	101598
8	1.25	90	20	35	8	6.2	3	6.8	101592	146810
10	1.5	100	22	39	10	8	3	8.5	101579	147217

M ISO DIN 13

HSSE

DIN 376



	N450-3	N450V-3		
	< 1.5 x D	< 1.5 x D		
	< 2.5 x D			
				
	C 2.5 x P	C 2.5 x P		
	ISO 2 6H	ISO 2 6H		

N450-3 R15 — 62 63 64 72 73 74 81 91

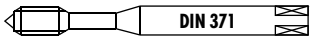
N450V-3 R15 V — 11 12 31 32

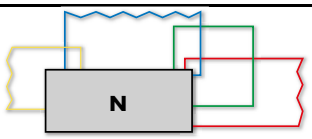
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
8	1.25	90	20	6	4.9	3	6.8	● 102327	● 102334
10	1.5	100	22	7	5.5	3	8.5	● 102314	● 102329
12	1.75	110	24	9	7	3	10.2	● 102317	● 102330
14	2	110	28	11	9	3	12	● 102319	● 145487
16	2	110	30	12	9	3	14	● 102321	● 102331
20	2.5	140	36	16	12	4	17.5	● 102324	● 102332
24	3	160	39	18	14.5	4	21	● 102325	● 102333

M ISO DIN 13

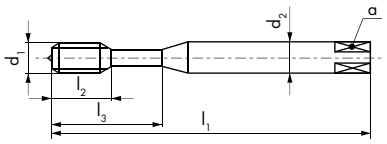
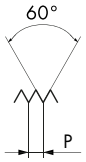
≤ Ø 2.8 > Ø 2.8

PM | HSSE





N360-3	R40		63 72 73 74 81 91
N360V-3	R40	V	11 12 32
N360TN-3	R40	TiN	11 12 13 14 32
N360TC-3	R40	TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83

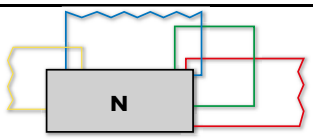
N360-3	N360V-3	N360TN-3	N360TC-3
			
C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.4	45	7		2.8	2.1	2	1.6	● 101618	● 101708	● 101697	● 146842
2.2	0.45	45	8		2.8	2.1	2	1.75	● 101619			
2.3	0.4	45	8		2.8	2.1	2	1.9	● 101620			
2.5	0.45	50	9		2.8	2.1	2	2.05	● 101622	● 101709	● 101698	● 101689
2.6	0.45	50	9		2.8	2.1	2	2.15	● 101623	● 101710		
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 101626	● 101711	● 101699	● 101690
3.5	0.6	56	6.5	20	4	3	3	2.9	● 101630	● 142625		
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 101635	● 101713	● 101700	● 101691
4.5	0.75	70	9	25	6	4.9	3	3.75	● 101639			
5	0.8	70	9	25	6	4.9	3	4.2	● 101644	● 101715	● 101701	● 101692
6	1	80	11	30	6	4.9	3	5	● 101652	● 101717	● 101703	● 101693
7	1	80	11	30	7	5.5	3	6	● 101656	● 101718		
8	1.25	90	12.5	35	8	6.2	3	6.8	● 101663	● 101721	● 101705	● 101694
9	1.25	90	12.5	35	9	7	3	7.8	● 101668			
10	1.5	100	14	39	10	8	3	8.5	● 101612	● 101707	● 101696	● 101688

M ISO DIN 13

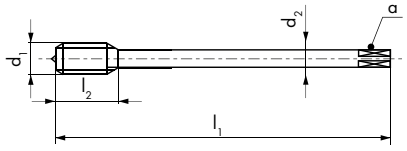
HSSE

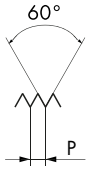
DIN 376



N460-3	R40		63 72 73 74 81 91
N460V-3	R40	V	11 12 32
N460TN-3	R40	TiN	11 12 13 14 32
N460TC-3	R40	TiCN	11 12 13 14 21 31 32 62 64 73 74 82 83

N460-3	N460V-3	N460TN-3	N460TC-3
<2.5 x D	<2.5 x D	<2.5 x D	<2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





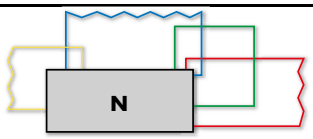
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
5	0.8	70	9	3.5	2.7	3	4.2	● 102410	● 102489	● 160682	
6	1	80	11	4.5	3.4	3	5	● 102411	● 102491	● 152850	
8	1.25	90	12.5	6	4.9	3	6.8	● 102412	● 102492	● 152849	
10	1.5	100	14	7	5.5	3	8.5	● 102351	● 102461	● 150242	● 158687
12	1.75	110	14	9	7	3	10.2	● 102359	● 102465	● 102449	● 102438
14	2	110	14	11	9	3	12	● 102369	● 102468	● 102451	● 111615
16	2	110	18	12	9	3	14	● 102376	● 102471	● 102453	● 102440
18	2.5	125	21	14	11	3	15.5	● 102383	● 102473		
20	2.5	140	24	16	12	4	17.5	● 102389	● 102475	● 102454	● 143280
22	2.5	140	24	18	14.5	4	19.5	● 102394	● 102477		
24	3	160	27	18	14.5	4	21	● 102398	● 102480	● 143119	● 150018
27	3	160	27	20	16	4	24	● 175423	● 102481		
30	3.5	180	30	22	18	4	26.5	● 150246	● 102482		
33	3.5	180	33	25	20	4	29.5	● 167621	● 102483		
36	4	200	36	28	22	5	32	● 143914	● 102484		
39	4	200	40	32	24	5	35	● 175424	● 102485		
42	4.5	200	40	32	24	5	37.5	● 169122	● 102486		
45	4.5	220	44	36	29	5	40.5		● 102487		
48	5	250	48	36	29	5	43		● 102488		
52	5	250	52	40	32	5	47		● 110228		
56	5.5	280	56	45	35	6	50.5		● 102490		
64	6	315	64	50	39	6	58		● 143805		

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

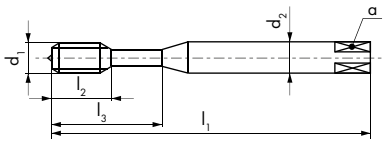
PM | HSSE

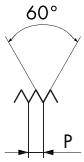
DIN 371



N360-3 LH	L40	LH	63 72 73 74 81 91
N360V-3 LH	L40	V	LH 11 12 32
N360-3	R40		63 72 73 74 81 91
N360V-3	R40	V	11 12 32

N360-3 LH	N360V-3 LH	N360-3	N360V-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 3 6G	ISO 3 6G



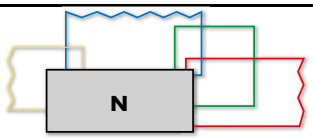


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID 6H + mm	ID 6H + mm
2	0.4	45	7		2.8	2.1	2	1.6			● 101617 0.019	● 146000 0.019
2.5	0.45	50	9		2.8	2.1	2	2.05			● 101621 0.020	● 143294 0.020
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 101627	● 146811	● 101625 0.020	● 104816 0.020
3.5	0.6	56	6.5	20	4	3	3	2.95			● 101629 0.021	● 125829 0.021
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 101637	● 162540	● 101634 0.022	● 104817 0.022
5	0.8	70	9	25	6	4.9	3	4.2	● 101646	● 144003	● 101643 0.024	● 104818 0.024
6	1	80	11	30	6	4.9	3	5	● 101654	● 144004	● 101669 0.026	● 104819 0.026
8	1.25	90	12.5	35	8	6.2	3	6.8	● 101666	● 143925	● 101662 0.028	● 104820 0.028
10	1.5	100	14	39	10	8	3	8.5	● 101615	● 143587	● 101611 0.032	● 104821 0.032

M ISO DIN 13

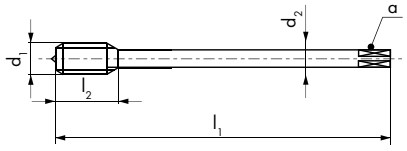
HSSE

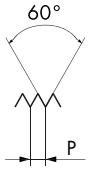
DIN 376



N460-3 LH	L40	LH	63	72	73	74	81	91
N460V-3 LH	L40	V	LH	11	12	32		
N460-3	R40		63	72	73	74	81	91
N460V-3	R40	V		11	12	32		

N460-3 LH	N460V-3 LH	N460-3	N460V-3
<2.5 x D	<2.5 x D	<2.5 x D	<2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 3 6G	ISO 3 6G





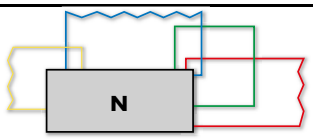
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	ID	6H + mm	ID	6H + mm
12	1.75	110	14	9	7	3	10.2	● 102362	● 146354	● 102358	0.034	● 143602	0.034
14	2	110	14	11	9	3	12			● 102368	0.038	● 144712	0.038
16	2	110	18	12	9	3	14	● 102378	● 143439	● 102375	0.038	● 150197	0.038
20	2.5	140	24	16	12	4	17.5	● 102390	● 146564	● 102388	0.042	● 145420	0.042

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

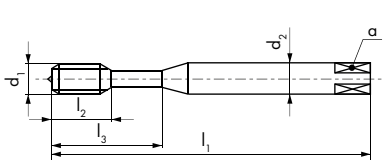
PM | HSSE

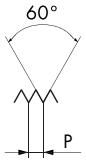
DIN 371



N360-3 R40 — 63 | 72 | 73 | 74 | 81 | 91

N360V-3 R40 | V — 11 | 12 | 32





N360-3	N360-3	N360V-3	
< 2.5 x D	< 2.5 x D	< 2.5 x D	
C 2.5 x P	C 2.5 x P	C 2.5 x P	
ISO 1 4H	7G	7G	

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID	6H + mm
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 101624	● 101628	0.036	● 144311	0.036
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 101633	● 101638	0.041	● 144192	0.041
5	0.8	70	9	25	6	4.9	3	4.2	● 101642	● 101647	0.044	● 143208	0.044
6	1	80	11	30	6	4.9	3	5	● 101651	● 101655	0.050	● 146709	0.050
8	1.25	90	12.5	35	8	6.2	3	Δ6.8	● 101661	● 101667	0.052	● 146267	0.052
10	1.5	100	14	39	10	8	3	8.5	● 101610	● 101616	0.060	● 142547	0.060

	6H +0.1 mm	6H +0.1 mm

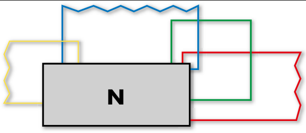
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H +0.1	ID	ID
3	0.5	56	5.5	18	3.5	2.7	3	2.6	● 160847	
4	0.7	63	7.5	21	4.5	3.4	3	3.4	● 101636	● 146513
5	0.8	70	9	25	6	4.9	3	4.3	● 101645	● 146046
6	1	80	11	30	6	4.9	3	5.1	● 101653	● 145559
8	1.25	90	12.5	35	8	6.2	3	6.9	● 101664	● 143415
10	1.5	100	14	39	10	8	3	8.6	● 101613	● 124917

Δ ISO 1 4H = 6.70

M ISO DIN 13

HSSE

DIN 376



N460-3	N460-3	N460V-3	

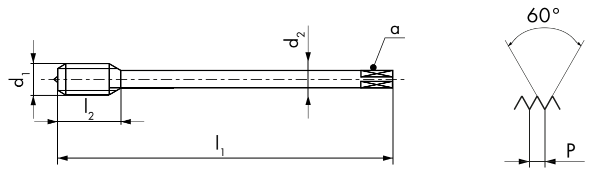
N460-3 R40 — 63 72 73 74 81 91

N460V-3 R40 V — 11 12 32

< 2.5 x D | < 2.5 x D | < 2.5 x D

C 2.5 x P | C 2.5 x P | C 2.5 x P

ISO 1 4H | 7G | 7G



Ø d1 M	P mm	l1 mm	l2 mm	d2 mm	a mm		6H	N460-3 ID	N460-3 ID	6H + mm	N460V-3 ID	6H + mm
12	1.75	110	14	9	7	3	10.2	★ 124987	● 102363	0.066	● 142532	0.066
16	2	110	18	12	9	3	14		● 102379	0.072	● 144956	0.072

6H +0.1 mm | 6H +0.1 mm

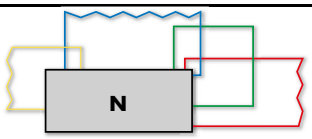
Ø d1 M	P mm	l1 mm	l2 mm	d2 mm	a mm		6H +0.1	N460-3 ID	N460V-3 ID
12	1.75	110	14	9	7	3	10.3	● 102360	● 125044
16	2	110	18	12	9	3	14.1	● 102377	● 145311

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

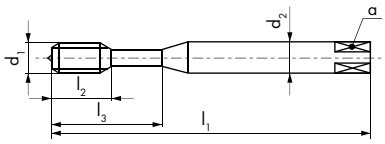
PM | HSSE

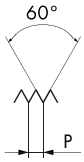
DIN 371



N360-5	R40		63 72 73 74 81 91
N360V-5	R40	V	11 12 32
N361-3	R40		61 63 71 72 73 74 81 91
N362V-3	R40	V	11 12 32

N360-5	N360V-5	N361-3	N362V-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H



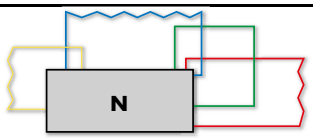


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.4	45	7		2.8	2.1	2	1.6	158079	150058		
3	0.5	56	5.5	18	3.5	2.7	3	2.5	104809	142646	101735	
4	0.7	63	7.5	21	4.5	3.4	3	3.3	104810	142647	101736	101741
5	0.8	70	9	25	6	4.9	3	4.2	104811	142648	101737	101742
6	1	80	11	30	6	4.9	3	5	104812	142649	101738	101743
8	1.25	90	12.5	35	8	6.2	3	6.8	104813	142650	101739	101744
10	1.5	100	14	39	10	8	3	8.5	104814	124899	101734	101740

M ISO DIN 13

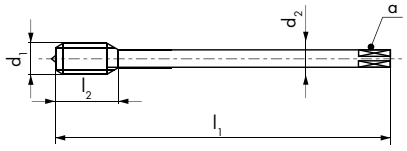
HSSE

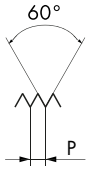
DIN 376



N460-5	R40		63 72 73 74 81 91
N460V-5	R40	V	11 12 32
N461-3	R40		61 63 71 72 73 74 81 91
N462V-3	R40	V	11 12 32

N460-5	N460V-5	N461-3	N462V-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H



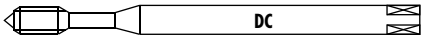


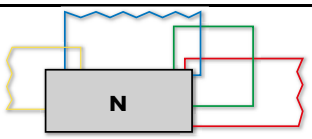
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	14	9	7	3	10.2	● 104815	● 142651	● 102506	● 102512
14	2	110	14	11	9	3	12				● 102513
16	2	110	18	12	9	3	14				● 102514
18	2.5	125	21	14	11	3	15.5			✶ 111614	● 102515
20	2.5	140	24	16	12	4	17.5				● 102516
24	3	160	27	18	14.5	4	21				● 102517
27	3	160	27	20	16	4	24				● 159244
30	3.5	180	30	22	18	4	26.5				● 143090

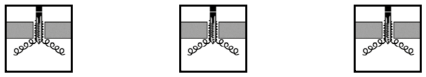
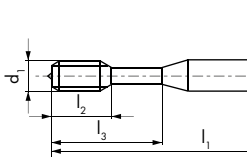
M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE



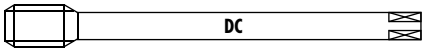


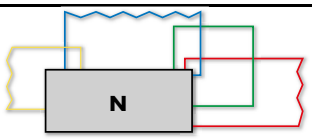
	N520-4	N520V-4	N520TN-4
			
	N	N V	N TiN
	62 63 64 72 73 74 81 91	11 12 31 32	11 12 13 14 32
			
	B 4xP	B 4xP	B 4xP
	ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2.5	0.45	100	10		2.8	2.1	3	2.05	● 102594	● 142623	
3	0.5	112	12	18	3.5	2.7	3	2.5	● 102595	● 143399	● 162790
4	0.7	112	14	21	4.5	3.4	3	3.3	● 102596	● 143400	● 146837
5	0.8	125	15	25	6	4.9	3	4.2	● 102597	● 142654	● 150113
6	1	125	17	30	6	4.9	3	5	● 102598	● 143137	● 148821

M ISO DIN 13

HSSE



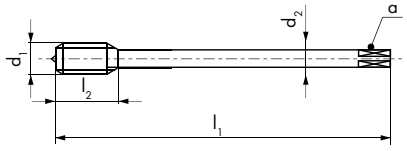


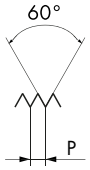
	N620-4	N620V-4	N620TN-4
	B 4xP	B 4xP	B 4xP
	ISO 2 6H	ISO 2 6H	ISO 2 6H

N620-4 62 63 64 72 73 74 81 91

N620V-4 V 11 12 31 32

N620TN-4 TiN 11 12 13 14 32



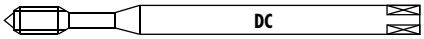


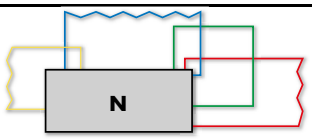
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
4	0.7	112	14	2.8	2.1	3	3.3	● 102619	● 142582	● 146442
5	0.8	125	15	3.5	2.7	3	4.2	● 102620	● 142657	● 146443
6	1	125	17	4.5	3.4	3	5	● 102621	● 142658	● 144591
8	1.25	140	20	6	4.9	3	6.8	● 102622	● 143401	● 146262
10	1.5	160	22	7	5.5	3	8.5	● 102614	● 142660	● 146849
12	1.75	180	24	9	7	3	10.2	● 102615	● 143127	● 146295
14	2	180	28	11	9	3	12	● 102616	● 151905	
16	2	200	30	12	9	3	14	● 102617	● 143106	● 143574
20	2.5	224	36	16	12	3	17.5	● 102618	● 143596	● 174317

M ISO DIN 13

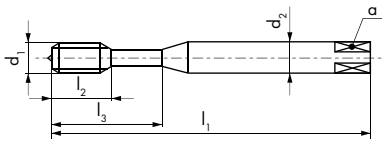
≤ Ø 2.8 > Ø 2.8

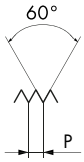
PM HSSE





	N560-3	N560V-3	N560TN-3	
N560-3	R40		63 72 73 74 81 91	
N560V-3	R40	V	11 12 32	
N560TN-3	R40	TiN	11 12 13 14 32	

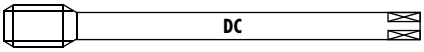


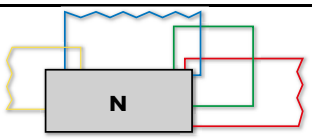


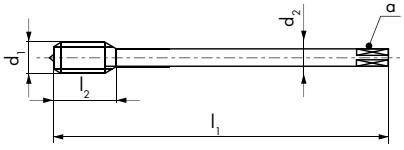
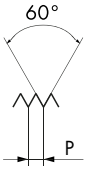
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2.5	0.45	100	9		2.8	2.1	2	2.05	● 102600	● 102607	
3	0.5	112	5.5	18	3.5	2.7	3	2.5	● 102601	● 102608	● 142663
4	0.7	112	7.5	21	4.5	3.4	3	3.3	● 102602	● 102609	● 142664
5	0.8	125	9	25	6	4.9	3	4.2	● 102603	● 102610	● 142665
6	1	125	11	30	6	4.9	3	5	● 102604	● 102611	● 142666
8	1.25	140	12.5	35	8	6.2	3	6.8	● 102605	● 102612	● 142667
10	1.5	160	14	39	10	8	3	8.5	● 102599	● 102606	● 142668

M ISO DIN 13

HSSE



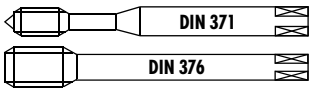


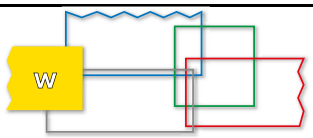
	N660-3	N660V-3	N660TN-3
			

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			N660-3 ID	N660V-3 ID	N660TN-3 ID
6	1	125	11	4.5	3.4	3	5	162792	115657	
8	1.25	140	12.5	6	4.9	3	6.8	162793	115544	
10	1.5	160	14	7	5.5	3	8.5	162794	135539	173484
12	1.75	180	14	9	7	3	10.2	102623	102626	142669
14	2	180	14	11	9	3	12	162253	147500	
16	2	200	18	12	9	3	14	102624	102627	142670
20	2.5	224	24	16	12	4	17.5	102625	102628	178003

M ISO DIN 13

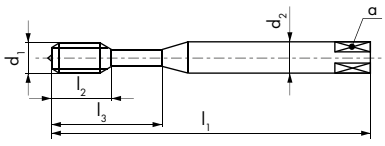
PM

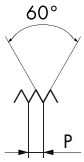




W320-4			71 72 81
W420-4			71 72 81
W320DL-4		DLC	71 72 73
W420DL-4		DLC	71 72 73

W320-4	W420-4	W320DL-4	W420DL-4
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
* 2	0.4	45	8		2.8	2.1	2	1.6	• 104612		• 176688	
2.5	0.45	50	10		2.8	2.1	2	2.05	• 104613		• 176689	
3	0.5	56	12	18	3.5	2.7	2	2.5	• 104615		• 176690	
4	0.7	63	14	21	4.5	3.4	2	3.3	• 104617		• 176691	
5	0.8	70	15	25	6	4.9	2	4.2	• 104618		• 176354	
6	1	80	17	30	6	4.9	2	5	• 104619		• 175590	
8	1.25	90	20		6	4.9	2	6.8		• 104636		• 176692
10	1.5	100	22		7	5.5	2	8.5		• 104632		• 176693
12	1.75	110	24		9	7	3	10.2		• 104633		• 176694
16	2	110	30		12	9	3	14		• 104634		• 176695

*W320-3
*W320DL-3 2.5 x P

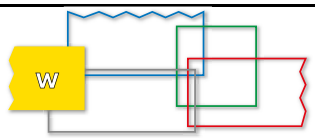
M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSSE

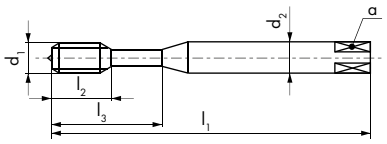
DIN 371

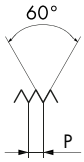
DIN 376



W360-3	R40		71 72 81
W460-3	R40		71 72 81
W360DL-3	R40	DLC	71 72 73
W460DL-3	R40	DLC	71 72 73

W360-3	W460-3	W360DL-3	W460DL-3





C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.4	45	7		2.8	2.1	2	1.6	● 104625		● 176719	
2.5	0.45	50	9		2.8	2.1	2	2.05	● 104626		● 176720	
3	0.5	56	5.5	18	3.5	2.7	2	2.5	● 104627		● 176721	
4	0.7	63	7.5	21	4.5	3.4	2	3.3	● 104628		● 176722	
5	0.8	70	9	25	6	4.9	2	4.2	● 104629		● 176723	
6	1	80	11	30	6	4.9	2	5	● 104630		● 176355	
8	1.25	90	12.5	35	8	6.2	2	6.8	● 104631		● 176724	
10	1.5	100	14	39	10	8	2	8.5	● 104624		● 176725	
12	1.75	110	14		9	7	3	10.2		● 104640		● 176726
16	2	110	18		12	9	3	14		● 104641		● 176727

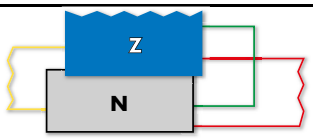
M ISO DIN 13

≤ Ø 25.4 > Ø 25.4

PM | HSSE

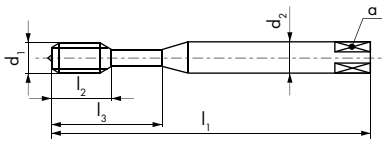
DIN 371

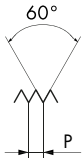
DIN 376



Z320V-4	V	11 12 13 21 32	
Z420V-4	V	11 12 13 21 32	
Z320VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	
Z420VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	

Z320V-4	Z420V-4	Z320VS-4	Z420VS-4
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
* 1.6	0.35	40	8		2.5	2.1	2	1.25	● 142671			
* 2	0.4	45	8		2.8	2.1	2	1.6	● 111613			
2.5	0.45	50	10		2.8	2.1	3	2.05	● 111455		● 143683	
2.6	0.45	50	10		2.8	2.1	3	2.15	● 142672			
3	0.5	56	12	18	3.5	2.7	3	2.5	● 104669		● 104830	
4	0.7	63	14	21	4.5	3.4	3	3.3	● 104670		● 104831	
5	0.8	70	15	25	6	4.9	3	4.2	● 104671		● 104832	
6	1	80	17	30	6	4.9	3	5	● 104672		● 104833	
8	1.25	90	20	35	8	6.2	3	6.8	● 104673		● 104834	
10	1.5	100	22	39	10	8	3	8.5	● 104668		● 104835	
12	1.75	110	24		9	7	3	10.2		● 104723		● 104836
14	2	110	28		11	9	3	12		● 142673		● 143684
16	2	110	30		12	9	3	14		● 105068		● 111569
18	2.5	125	33		14	11	4	15.5		● 142674		
20	2.5	140	36		16	12	4	17.5		● 105069		● 111570
22	2.5	140	36		18	14.5	4	19.5		● 146003		
24	3	160	39		18	14.5	4	21		● 142675		● 150017
30	3.5	180	45		22	18	4	26.5		● 142676		

*Z320V-3 2.5 x P

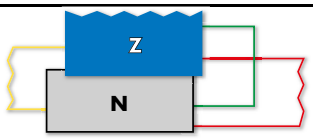
M ISO DIN 13

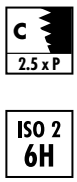
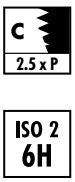
≤ Ø 2.8 > Ø 2.8

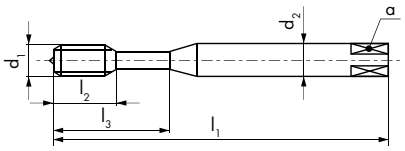
PM | HSSE

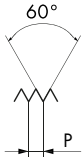
DIN 371

DIN 376



	Z360V-3	Z362V-3	Z462V-3
			

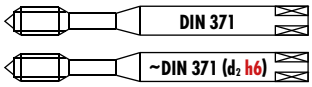


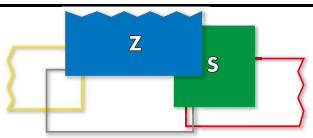


									Z360V-3	Z362V-3	Z462V-3
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2	0.4	45	7		2.8	2.1	2	1.6	● 104684		
2.5	0.45	50	9		2.8	2.1	2	2.05	● 104685		
2.6	0.45	50	9		2.8	2.1	2	2.15	● 104686		
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 104687		
3.5	0.6	56	6.5	20	4	3	3	2.9		● 104688	
4	0.7	63	7.5	21	4.5	3.4	3	3.3		● 104689	
5	0.8	70	9	25	6	4.9	3	4.2		● 104690	
6	1	80	11	30	6	4.9	3	5		● 104691	
8	1.25	90	12.5	35	8	6.2	3	6.8		● 104692	
10	1.5	100	14	39	10	8	3	8.5		● 104683	
12	1.75	110	14		9	7	3	10.2			● 104742
14	2	110	14		11	9	3	12			● 104743
16	2	110	18		12	9	3	14			● 104744
18	2.5	125	21		14	11	3	15.5			● 104745
20	2.5	140	24		16	12	3	17.5			● 104746
22	2.5	140	24		18	14.5	3	19.5			● 104752
24	3	160	27		18	14.5	4	21			● 104747
27	3	160	27		20	16	4	24			● 104748
30	3.5	180	30		22	18	4	26.5			● 104749
36	4	200	36		28	22	4	32			● 104750
42	4.5	200	40		32	24	4	37.5			● 104751

M ISO DIN 13

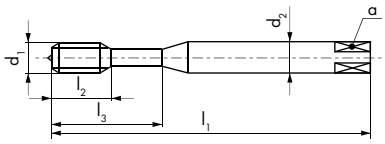
HSSE

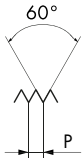




Z362VS-3	R40		VS	12 14 21 22 23 32 61 63	
Z370VS-3	R45	VS	CLASSIC	14 15 21 22 23 24 51 61	
Z373VS-3	R45		VS	CLASSIC	94
Z370VS-3	R45	VS	SYNCHRO	13 14 15 21 22 23 24 51	
Z373VS-3	R45		VS	SYNCHRO	52

Z362VS-3	Z370VS-3	Z370VS-3	Z373VS-3
< 2.5 x D	< 3 x D	< 3 x D	< 3 x D
	PM	PM	PM
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	4HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
* 3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 111504
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 111505
5	0.8	70	9	25	6	4.9	3	4.2	● 111506
6	1	80	11	30	6	4.9	3	5	● 111507
8	1.25	90	12.5	35	8	6.2	3	6.8	● 111508
10	1.5	100	14	39	10	8	3	8.5	● 111509

*Z360VS-3

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	● 162776	● 165324	● 165236
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	● 162777	● 165325	● 165237
5	0.8	70	9	25	6	4.9	3	4.2	● 162778	● 165326	● 165238
6	1	80	11	30	6	4.9	3	5	● 162779	● 165327	● 165239
8	1.25	90	12.5	35	8	6.2	3	Δ 6.8	● 162780	● 165328	● 165240
10	1.5	100	14	39	10	8	3	8.5	● 162781	● 165438	● 165241

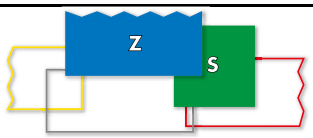
Δ 4HX = 6.7

M ISO DIN 13

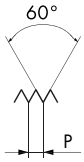
HSSE

DIN 376

~DIN 376 (d_2 h6)



	Z462VS-3	Z470VS-3	Z473VS-3	
	R40 / VS	R45 / VS / CLASSIC	R45 / VS / CLASSIC	R45 / VS / SYNCHRO
	12 14 21 22 23 32 61 63	14 15 21 22 23 24 51 61 94	13 14 15 21 22 23 24 51 52	
	< 2.5 x D	< 3 x D	< 3 x D	
		PM	PM	
	C 2.5 x P	C 2.5 x P	C 2.5 x P	
	6HX	6HX	6HX	



Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
12	1.75	110	14	9	7	4	10.2	● 111510
14	2	110	14	11	9	4	12	★ 148169
16	2	110	18	12	9	4	14	● 111511
20	2.5	140	24	16	12	4	17.5	● 111512
24	3	160	27	18	14.5	4	21	★ 111620

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID	ID
12	1.75	110	14	* 10	* 8	4	10.2	● 162782	● 165242
14	2	110	14	* 12	* 9	4	12	● 162783	
16	2	110	18	12	9	4	14	● 162784	● 165244
18	2.5	125	21	14	11	4	15.5	● 170643	
20	2.5	140	24	16	12	4	17.5	● 162785	● 165234
22	2.5	140	24	16	12	4	19.5	● 175190	
24	3	160	27	16	12	4	21	● 162786	● 165235

* Norme DC / * DC Norm/ * Norma DC

ZX AMPCO®

ALU-BRONZE-LEGIERUNGEN
ALU-BRONZE-ALLOYS

ZX - DC-Maschinengewindebohrer mit speziell angepasster Schneidengeometrie

Für Durchgangs- und Sacklöcher < 1.5 x D

Optimal
für AMPCO® 21 / 22
Brinellhärte HB > 280 - < 330

Geeignet
für AMPCO® 18
Brinellhärte HB < 420

Geeignet
für AMPCO® 25 / 26
Brinellhärte HB < 420

Empfehlung
Für AMPCO® 25 / 26: *Kernlochdurchmesser + 0.2 mm*

ZX - DC machine taps with specially adapted cutting geometry

For through and blind holes < 1.5 x D

Optimal
for AMPCO® 21 / 22
Hardness Brinell HB > 280 - < 330

Suitable
for AMPCO® 18
Hardness Brinell HB < 420

Suitable
for AMPCO® 25 / 26
Hardness Brinell HB < 420

Recommendation
For AMPCO® 25 / 26: Core hole diameter + 0.2 mm

Weitere AMPCO® Bearbeitungsoptionen:

Optimal
Für Durchgangslöcher

DC-Maschinengewindebohrer Typ H320-4 / H420-4
für AMPCO® 18
Brinellhärte HB < 200

Optimal
Für Durchgangs- und Sacklöcher < 2 x D

für AMPCO® 25 / 26
Brinellhärte HB > 380 - < 420
Schmierung: Schneidöl / Emulsion

DC-VHM-Gewindefräser Typ GF6165VS
Schnittgeschwindigkeit Vc: 30 - 50 m/min
Fräsvorschub fz: 0.01 - 0.05 mm/Zahn

Optimal
Für Durchgangs- und Sacklöcher < 4 x D

für AMPCO® 25 / 26
Brinellhärte HB > 380 - < 420
Schmierung: Schneidöl / Emulsion

DC-VHM-Gewindewirbler
Typ GW301.VS / GWi306.VS
Schnittgeschwindigkeit Vc: 30 - 50 m/min
Fräsvorschub fz: 0.01 - 0.08 mm/Zahn

Alternative AMPCO® threading solutions:

Optimal
For through holes

DC machine taps type H320-4 / H420-4
for AMPCO® 18
Hardness Brinell HB < 200

Optimal
For through and blind holes < 2 x D

for AMPCO® 25 / 26
Hardness Brinell HB > 380 - < 420
Lubricant: cutting oil / emulsion

DC solid carbide thread milling cutter type GF6165VS
Cutting speed Vc: 30 - 50 m/min
Feed rate fz: 0.01 - 0.05 mm/tooth

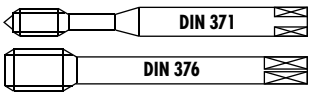
Optimal
For through and blind holes < 4 x D

for AMPCO® 25 / 26
Hardness Brinell HB > 380 - < 420
Lubricant: cutting oil / emulsion

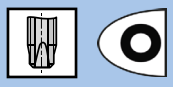
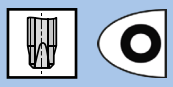
DC solid carbide thread whirl cutter type GW301.VS / GWi306.VS
Cutting speed Vc: 30 - 50 m/min
Feed rate fz: 0.01 - 0.08 mm/tooth

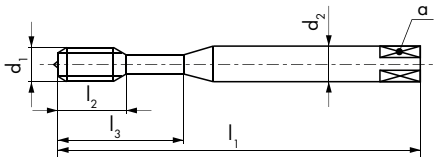
M ISO DIN 13

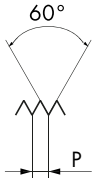
PM



ZX

ZX320-4		AMPCO® 21 22
ZX420-4		AMPCO® 21 22
ZX320-4		AMPCO® 18 25 26
ZX420-4		AMPCO® 18 25 26





ZX320-4	ZX420-4		

6HX | 6HX

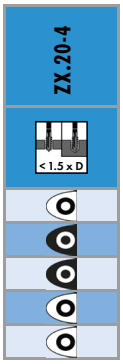
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.7	63	14	21	4.5	3.4	3	* 3.3	● 143599
5	0.8	70	15	25	6	4.9	3	* 4.2	● 145458
6	1	80	17	30	6	4.9	3	* 5	● 110232
8	1.25	90	20	35	8	6.2	3	* 6.8	● 110233
10	1.5	100	22	39	10	8	3	* 8.5	● 124905

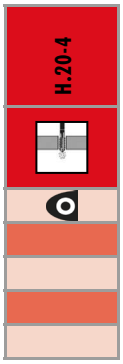
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
12	1.75	110	24	9	7	3	* 10.2	● 110208
16	2	110	30	12	9	3	* 14	● 110207

*Ampco® 25 / Ampco® 26 + 0.2 mm

ANWENDUNGSTABELLE FÜR ALU-BRONZE-LEGIERUNGEN
APPLICATION CHART FOR ALU-BRONZE-ALLOYS

Werkstoffbezeichnung Material designation	*Brinellhärte* Hardness Brinell (HB)	*Schnittgeschwindigkeit* Cutting speed Vc (m/min) Guide Line
AMPCO® 18	< 290	6 - 10
AMPCO® 21	> 280 - < 330	2 - 3
AMPCO® 22	> 280 - < 330	2 - 3
AMPCO® 25	< 420	2 - 3
AMPCO® 26	< 420	2 - 3



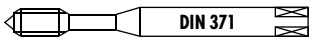


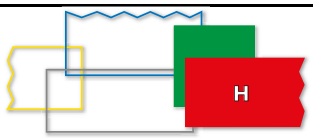
Optimal mit Schneidöl
Optimal with cutting oil

Geeignet mit Schneidöl
Suitable with cutting oil

M ISO DIN 13

PM





	H320-4	H320TC-4		
	B 4xP	B 4xP		
	ISO 2 6H	ISO 2 6H		

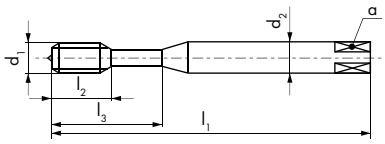
H320-4

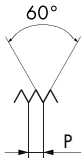
15 16 62 64 82

H320TC-4

TiCN

15 16 24 31 82 83 92 93





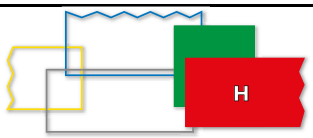
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
2	0.4	45	8		2.8	2.1	2	1.6	101206	151836
2.2	0.45	45	9		2.8	2.1	2	1.75	111801	
2.5	0.45	50	10		2.8	2.1	3	2.05	101207	148603
3	0.5	56	12	18	3.5	2.7	3	2.5	101209	111836
3.5	0.6	56	13	20	4	3	3	2.9	101210	
4	0.7	63	14	21	4.5	3.4	3	3.3	101211	111502
4.5	0.75	70	15	25	6	4.9	3	3.75	101212	
5	0.8	70	15	25	6	4.9	3	4.2	101213	111458
6	1	80	17	30	6	4.9	3	5	101215	111456
8	1.25	90	20	35	8	6.2	3	6.8	101218	111453
10	1.5	100	22	39	10	8	3	8.5	101205	110911

M ISO DIN 13

≤ Ø 25.4 > Ø 25.4

PM | HSSE

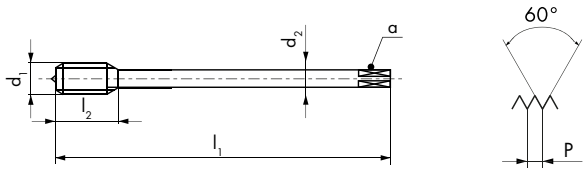
DIN 376



	H420-4	H420TC-4		
	B 4xP	B 4xP		
	ISO 2 6H	ISO 2 6H		

H420-4 — 15 16 62 64 82

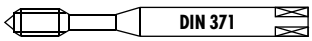
H420TC-4 — TiCN — 15 16 24 31 82 83 92 93

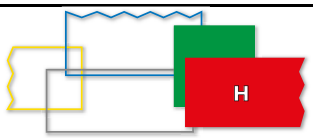


Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
12	1.75	110	24	9	7	4	10.2	● 101275	● 110912
14	2	110	28	11	9	4	12	● 101277	● 145461
16	2	110	30	12	9	4	14	● 101279	● 111612
18	2.5	125	33	14	11	4	15.5	● 101281	
20	2.5	140	36	16	12	4	17.5	● 101284	● 144606
22	2.5	140	36	18	14.5	4	19.5	● 157752	
24	3	160	39	18	14.5	4	21	● 101286	● 143588
27	3	160	42	20	16	4	24	● 101287	
30	3.5	180	45	22	18	4	26.5	● 101288	
36	4	200	51	28	22	4	32	● 101289	

M ISO DIN 13

PM

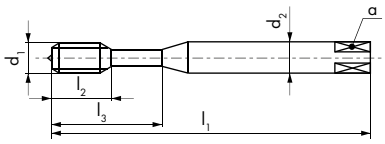


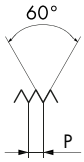


	H350-3	H350-3	H350TC-3	
	< 1.5 x D	< 1.5 x D	< 1.5 x D	
	C 2.5 x P	C 2.5 x P	C 2.5 x P	
	ISO 2 6H	ISO 3 6G	ISO 2 6H	
Ø d_1 M	ID	ID	6H + mm	ID
2	● 101238			● 146451
2.5	● 101239			● 144957
3	● 101242	● 101241	0.020	● 111835
3.5	● 101243			
4	● 101245	● 101244	0.022	● 111607
4.5	● 101246			
5	● 101248	● 101247	0.024	● 111610
6	● 101251	● 101250	0.026	● 111500
8	● 101255	● 101254	0.028	● 110963
10	● 101237	● 101236	0.032	● 111454

H350-3 R25 15 16 62 64 82

H350TC-3 R25 TiCN 15 16 24 31 82 83 92 93





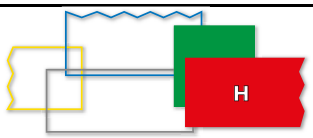
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H
2	0.4	45	7		2.8	2.1	2	1.6
2.5	0.45	50	9		2.8	2.1	3	2.05
3	0.5	56	5.5	18	3.5	2.7	3	2.5
3.5	0.6	56	6.5	20	4	3	3	2.9
4	0.7	63	7.5	21	4.5	3.4	3	3.3
4.5	0.75	70	9	25	6	4.9	3	3.75
5	0.8	70	9	25	6	4.9	3	4.2
6	1	80	11	30	6	4.9	3	5
8	1.25	90	12.5	35	8	6.2	3	6.8
10	1.5	100	14	39	10	8	3	8.5

M ISO DIN 13

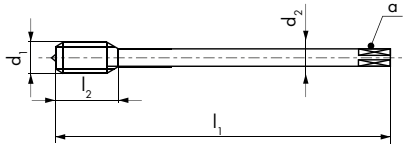
≤ Ø 25.4 > Ø 25.4

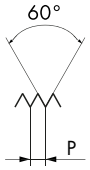
PM | HSSE

DIN 376



	H450-3	H450-3	H450TC-3	
	< 1.5 x D	< 1.5 x D	< 1.5 x D	
H450-3	R25	15 16 62 64 82		
H450TC-3	R25 TiCN	15 16 24 31 82 83 92 93		
	C 2.5 x P	C 2.5 x P	C 2.5 x P	
	ISO 2 6H	ISO 3 6G	ISO 2 6H	





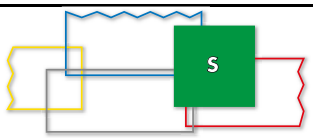
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID
12	1.75	110	14	9	7	4	10.2	● 101305	✱ 101304	0.034	● 111501
14	2	110	14	11	9	4	12	● 101307			● 146151
16	2	110	18	12	9	4	14	● 101309			● 111605
18	2.5	125	21	14	11	4	15.5	● 101311			
20	2.5	140	24	16	12	4	17.5	● 101313			● 144986
22	2.5	140	24	18	14.5	4	19.5	● 101315			
24	3	160	27	18	14.5	4	21	● 101318			● 144987
27	3	160	27	20	16	4	24	● 101320			
30	3.5	180	30	22	18	4	26.5	● 101323			
36	4	200	36	28	22	4	32	● 101324			
42	4.5	200	40	32	24	4	37.5	● 101325			

M ISO DIN 13

PM

DIN 371

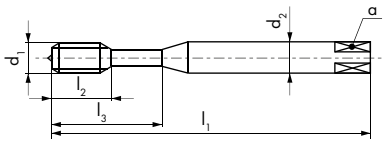
DIN 376

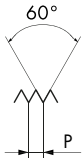


	S320VS-4	S320VS-4	S420VS-4	
	B 4xP	B 4xP	B 4xP	
	6HX	4HX	6HX	

S320VS-4 VS 13 15 16 22 23 24 52

S420VS-4 VS 13 15 16 22 23 24 52



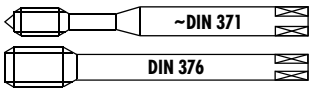


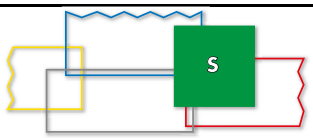
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
3	0.5	56	12	18	3.5	2.7	3	2.5	• 111596	* 165318	
4	0.7	63	14	21	4.5	3.4	3	3.3	• 111597	* 165319	
5	0.8	70	15	25	6	4.9	3	4.2	• 111598	* 165320	
6	1	80	17	30	6	4.9	3	5	• 111599	* 165321	
8	1.25	90	20	35	8	6.2	3	△ 6.8	• 111600	* 165322	
10	1.5	100	22	39	10	8	3	8.5	• 111601	* 165323	
12	1.75	110	24		9	7	4	10.2			• 111602
16	2	110	30		12	9	4	14			• 111603
20	2.5	140	36		16	12	4	17.5			• 111604

△ 4HX = 6.7

M ISO DIN 13

PM





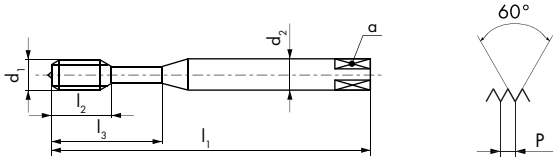
S360VS-3 R35 VS — 13 15 16 22 23 24 52

S460VS-3 R35 VS — 13 15 16 22 23 24 52

aero

SA390-3 R10 — 16 53

S360VS-3	S460VS-3	SA390-3	SA390-3
< 2 x D	< 2 x D	< 1.5 x D < 1.5 x D	< 1.5 x D < 1.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P 4HX	C 2.5 x P 6HX



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 111513	
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 111514	
5	0.8	70	9	25	6	4.9	3	4.2	● 111515	
6	1	80	11	30	6	4.9	3	5	● 111516	
8	1.25	90	12.5	35	8	6.2	3	6.8	● 111517	
10	1.5	100	14	39	10	8	3	8.5	● 111518	
12	1.75	110	14		9	7	4	10.2		● 111519
14	2	110	14		11	9	4	12		✶ 148171
16	2	110	18		12	9	4	14		● 111520
20	2.5	140	24		16	12	4	17.5		● 111521
24	3	160	27		18	14.5	4	21		● 111606

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
4	0.7	63	14	4.5	3.4	3	3.3	● 149673	● 149674
5	0.8	70	15	6	4.9	3	4.2	● 149693	● 149694
6	1	80	20	6	4.9	3	5	● 149707	● 149708
8	1.25	90	25	8	6.2	3	△ 6.8	● 149736	● 149737
10	1.5	100	30	10	8	3	8.5	✶ 149754	● 149755
12	1.75	110	35	12	9	4	10.2		● 149775
14	2	110	40	16	12	4	12		✶ 149792

△ 4HX = 6.7

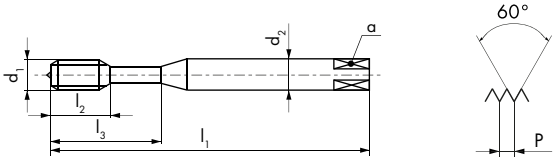
M ISO DIN 13

PM

~DIN 371

aero

SA320-4		15 16 52 64	
SA350-3	R15	15 16 52 64	
TL320VS-4	VS	41 42	
TL351VS-3	R15	VS	41 42



SA320-4	SA350-3	TL320VS-4	TL351VS-3
B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
4HX	4HX	4HX	4HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	56	12		3.5	2.7	3	2.5	• 147975	• 147987	• 152006	• 152012
4	0.7	63	14		4.5	3.4	3	3.3	• 147976	• 147988	• 152007	• 152013
5	0.8	70	15		6	4.9	3	4.2	• 147977	• 147989	• 152008	• 152014
6	1	80	15	23	6	4.9	3	5	• 147978	• 147990	• 152009	• 152015
8	1.25	90	18	29	8	6.2	3	6.7	• 147979	• 147991	• 152010	• 152016
10	1.5	100	20	33	10	8	3	8.5	• 147980	• 147992	• 152011	• 152017

SA320-4	SA350-3	TL320VS-4	TL351VS-3
6HX	6HX	6HX	6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	56	12		3.5	2.7	3	2.5	• 147981	• 147993	• 148001	• 148000
4	0.7	63	14		4.5	3.4	3	3.3	• 147982	• 147994	• 148003	• 148002
5	0.8	70	15		6	4.9	3	4.2	• 147983	• 147995	• 148007	• 148006
6	1	80	15	23	6	4.9	3	5	• 147984	• 147996	• 148011	• 148010
8	1.25	90	18	29	8	6.2	3	6.8	• 147985	• 147997	• 148020	• 148018
10	1.5	100	20	33	10	8	3	8.5	• 147986	• 147998	• 148027	• 148025

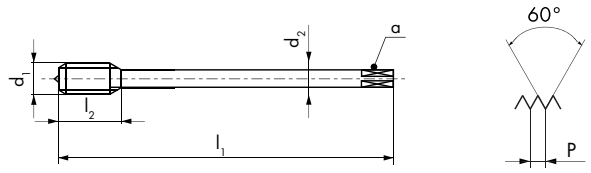
M ISO DIN 13

PM

DIN 376

aero

SA420-4		15 16 52 64
SA450-3	R15	15 16 52 64
TL420VS-4	VS	41 42
TL451VS-3	R15 VS	41 42



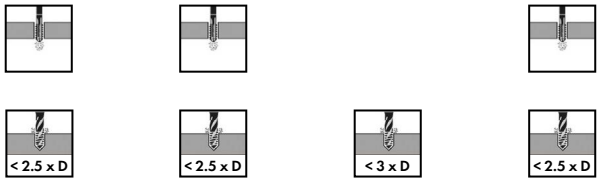
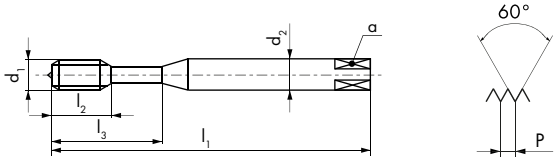
	SA420-4	SA450-3	TL420VS-4	TL451VS-3
		< 1.5 x D		< 2 x D
				< 2 x D
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	4HX	4HX	4HX	4HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	24	9	7	4	10.2	* 148096	* 152189	* 152192	* 152195
14	2	110	28	11	9	4	12	* 152187			
16	2	110	30	12	9	4	14	* 152188			* 152197

								6HX	6HX	6HX	6HX
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	24	9	7	4	10.2	* 152198	* 152201	* 152204	● 148028
14	2	110	28	11	9	4	12	* 152199			● 152207
16	2	110	30	12	9	4	14		* 152203		● 148029

M ISO DIN 13

PM — DIN 371 — HSSE — DC

	GG350NV-3	GG350TC-3	GG353TC-3	GG550NV-3
	R15 NV 31	R15 TiCN 31 62 74	R15 TiCN 31 62 74	R15 NV 31
				
	< 2.5 x D	< 2.5 x D	< 3 x D	< 2.5 x D
				
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	56	12	18	3.5	2.7	3	2.5	● 101172	● 101178
4	0.7	63	14	21	4.5	3.4	3	3.3	● 101173	● 101179
5	0.8	70	15	25	6	4.9	3	4.2	● 101174	● 101180
6	1	80	17	30	6	4.9	3	5	● 101175	● 101181
8	1.25	90	20	35	8	6.2	4	6.8	● 101076	● 101182
10	1.5	100	22	39	10	8	4	8.5	● 101171	● 101177

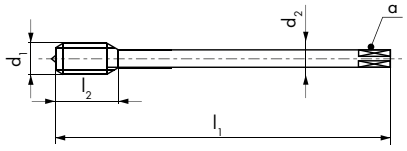
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
5	0.8	70	15	25	6	4.9	3	4.2	● 144947
6	1	80	17	30	6	4.9	3	5	● 147710
8	1.25	90	20	35	8	6.2	4	6.8	● 147711
10	1.5	100	22	39	10	8	4	8.5	● 146708

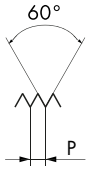
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.7	112	14	21	4.5	3.4	3	3.3	● 101196
5	0.8	125	15	25	6	4.9	3	4.2	● 101197
6	1	125	17	30	6	4.9	3	5	● 101198

M ISO DIN 13

PM — DIN 376 — HSSE — DC

	GG450NV-3	GG450TC-3	GG453TC-3	GG650NV-3
GG450NV-3	R15 NV 31			
GG450TC-3	R15 TiCN 31 62 74			
GG453TC-3	R15 TiCN 31 62 74			
GG650NV-3	R15 NV 31			
	6HX	6HX	6HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
8	1.25	90	20	6	4.9	4	6.8	● 101189	● 101194
10	1.5	100	22	7	5.5	4	8.5	● 101183	● 101195
12	1.75	110	24	9	7	4	10.2	● 101184	● 101190
14	2	110	28	11	9	4	12	● 101185	● 101191
16	2	110	30	12	9	4	14	● 101186	● 101192
20	2.5	140	36	16	12	4	17.5	● 101187	● 101193
24	3	160	39	18	14.5	4	21	● 101188	

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID
12	1.75	110	24	* 10	* 8	4	10.2	● 146707
16	2	110	30	12	9	4	14	● 162796

* Norme DC / * DC Norm/ * Norma DC

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
8	1.25	140	20	6	4.9	4	6.8	● 101203
10	1.5	160	22	7	5.5	4	8.5	● 101199
12	1.75	180	24	9	7	4	10.2	● 101200
16	2	200	30	12	9	4	14	● 101201
20	2.5	224	36	16	12	4	17.5	● 101202

M ISO DIN 13

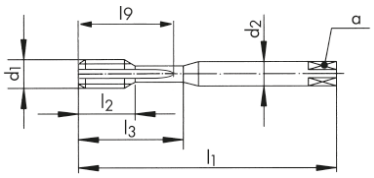
CLASSIC SYNCHRO

PM

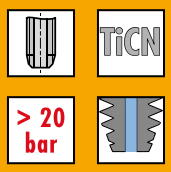
DIN 371

DIN 376

K

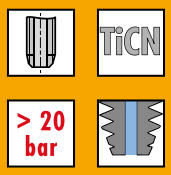
	K313TC-3	K413TC-3		
				

K313TC-3

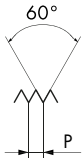


11 12 13 14 15 16 31 32 62 63 64 74 83

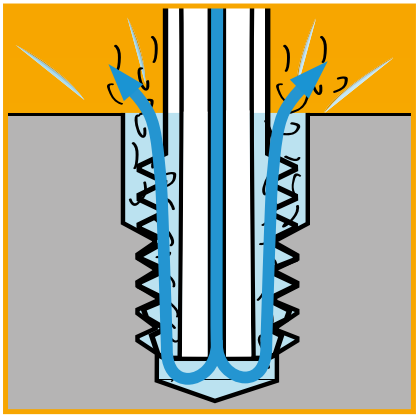
K413TC-3

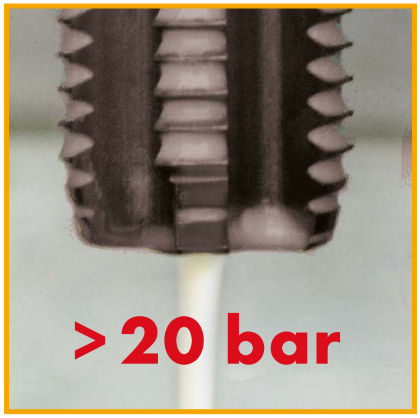


11 12 13 14 15 16 31 32 62 63 64 74 83



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	l_9 mm	d_2 mm	a mm			ID	ID
5	0.8	70	15	25	23	6	4.9	3	4.2	● 175961	
6	1	80	17	30	28	6	4.9	3	5	● 170766	
8	1.25	90	20	35	33	8	6.2	3	6.8	● 170769	
10	1.5	100	22	39	37	10	8	3	8.5	● 170772	
12	1.75	110	24		42	9	7	3	10.2		● 165838
14	2	110	28		49	11	9	3	12		● 170778
16	2	110	30		56	12	9	4	14		● 170783
20	2.5	140	36		70	16	12	5	17.5		● 170786
24	3	160	39		84	18	14.5	5	21		● 170775



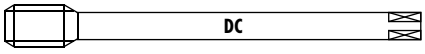


M ISO DIN 13

CLASSIC | SYNCHRO

≤ Ø 25.4 > Ø 25.4

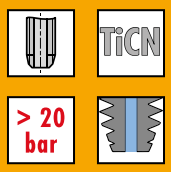
PM | HSSE



K

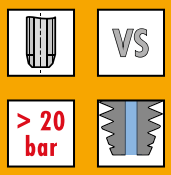
	K613TC-3	K613VS-3		

K613TC-3

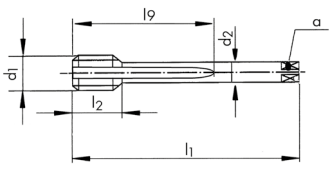


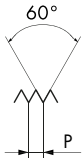
11 12 13 14 15 16 31 32 62 63 64 74 83

K613VS-3



11 12 13 14 15 16 31 32 62 63 64 74 83





6HX | 6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_9 mm	d_2 mm	a mm			ID	ID
6	1	110	17	30	4.5	3.4	3	5	● 170646	● 172699
8	1.25	110	20	40	6	4.9	3	6.8	● 170649	● 172700
10	1.5	125	22	50	7	5.5	3	8.5	● 170652	● 172701
12	1.75	140	24	60	9	7	3	10.2	● 167982	● 172702
14	2	140	28	70	11	9	4	12	● 167983	
16	2	160	30	80	12	9	4	14	● 167984	● 170573
20	2.5	180	36	100	16	12	5	17.5	● 167985	● 170576
24	3	200	39	120	18	14.5	5	21	● 167986	● 172704
27	3	225	42	135	20	16	5	24	● 167987	
30	3.5	250	45	150	22	18	5	26.5	● 165542	
33	3.5	280	48	165	25	20	5	29.5	● 167988	
36	4	300	51	180	28	22	6	32	● 167989	
39	4	300	55	195	32	24	6	35	● 167990	
42	4.5	355	55	210	32	24	6	37.5	● 167999	

Vc (m/min) Guide Line

	M5 - M10	M12 - M16	M20 - M30	M33 - M42
11 12 13 32 64	30 - 40	20 - 30	20 - 30	20 - 30
31 62 63 74 83	30 - 40	30 - 40	30 - 40	30 - 40
14	20 - 30	15 - 25	15 - 25	15 - 25
15	15 - 20	10 - 15	8 - 12	5 - 8
16	8 - 12	5 - 8	5 - 8	5 - 8

M ISO DIN 13

CLASSIC SYNCHRO

PM

DIN 371

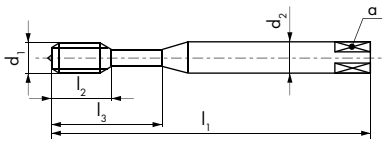
DIN 376

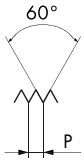
QTAP

Q320VS-4	VS		
Q420VS-4	VS		
Q323VS-4			VS
Q423VS-4			VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q320VS-4	Q420VS-4	Q323VS-4	Q423VS-4
NEW	NEW	NEW	NEW
B 4xP	B 4xP	B 4xP	B 4xP
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	56	12	18	3.5	2.7	3	2.5	● 195494		● 195505	
4	0.7	63	14	21	4.5	3.4	3	3.3	● 195495		● 195506	
5	0.8	70	15	25	6	4.9	3	4.2	● 195496		● 195507	
6	1	80	17	30	6	4.9	3	5	● 195497		● 195508	
8	1.25	90	20	35	8	6.2	3	6.8	● 195498		● 195509	
10	1.5	100	22	39	10	8	3	8.5	● 195499		● 195510	
12	1.75	110	24		9	7	3	10.2		● 195500		● 195511
14	2	110	28		11	9	3	12		● 195501		● 195512
16	2	110	30		12	9	3	14		● 195502		● 195513
20	2.5	140	36		16	12	4	17.5		● 195503		● 195514
24	3	160	39		18	14.5	4	21		● 195504		● 195515

M ISO DIN 13

CLASSIC | SYNCHRO

≤ Ø 16 | > Ø 16

PM | HSSE

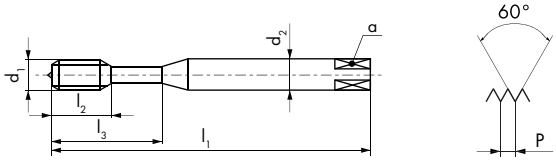
DIN 371

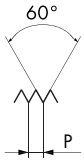
DIN 376

QTAP

	Q360VS-3	Q460VS-3	Q363VS-3	Q463VS-3
	R40	R40	R40	R40
	VS	VS		
			VS	VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	56	5.5	18	3.5	2.7	3	2.5	● 195516		● 195527	
4	0.7	63	7.5	21	4.5	3.4	3	3.3	● 195517		● 195528	
5	0.8	70	9	25	6	4.9	3	4.2	● 195518		● 195529	
6	1	80	11	30	6	4.9	3	5	● 195519		● 195530	
8	1.25	90	12.5	35	8	6.2	3	6.8	● 195520		● 195531	
10	1.5	100	14	39	10	8	3	8.5	● 195521		● 195532	
12	1.75	110	14		9	7	3	10.2		● 195522		● 195533
14	2	110	14		11	9	3	12		● 195523		● 195534
16	2	110	18		12	9	3	14		● 195524		● 195535
20	2.5	140	24		16	12	3	17.5		● 195525		● 195536
24	3	160	27		18	14.5	4	21		● 195526		● 195537

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Synchronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

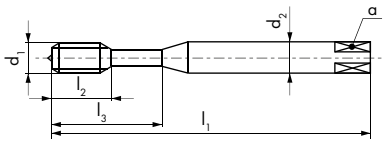
	RTS320VS-4	RTS420VS-4	RTS323VS-4	RTS423VS-4
	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	6HX	6HX	6HX	6HX

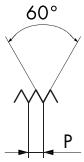
RTS320VS-4 — VS — 11 12 13 14 / 15 21 31 32 / 51 61 63 64 / 72 73 74 81 / 82 83 91 92 / 94

RTS420VS-4 — VS

RTS323VS-4 — VS — 11 12 13 14 / 15 21 31 32 / 51 61 63 64 / 72 73 74 81 / 82 83 91 92 / 94

RTS423VS-4 — VS





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID	ID
* 2	0.4	45	8		2.8(h9)	2.1	2	1.6	● 143532			
2.5	0.45	50	10		2.8(h9)	2.1	3	2.05	● 143534			
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	● 150601			
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	● 150603			
5	0.8	70	9	25	6	4.9	3	4.2	● 150605		● 150606	
6	1	80	11	30	6	4.9	3	5	● 150610		● 150611	
8	1.25	90	12.5	35	8	6.2	3	6.8	● 150620		● 150621	
10	1.5	100	14	39	10	8	3	8.5	● 150635		● 150636	
12	1.75	110	14		* 10	* 8	3	10.2		● 151863		● 151864
14	2	110	14		* 12	* 9	3	12		● 162535		
16	2	110	18		12	9	3	14		● 150670		● 150671
20	2.5	140	24		16	12	4	17.5		● 150679		
24	3	160	27		16	12	4	21		● 162787		

* Norme DC / * DC Norm/ * Norma DC

*RTS320VS-3 — 2.5 x P

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Synchronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

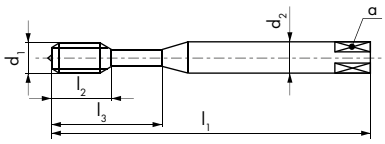
PM

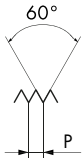
~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

	RTS362VS-3	RTS462VS-3	RTS365VS-3	RTS465VS-3
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID	ID
* 2	0.4	45	7		2.8(h9)	2.1	3	1.6	● 143536			
* 2.5	0.45	50	9		2.8(h9)	2.1	3	2.05	● 143538			
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	● 150602		● 160477	
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	● 150604		● 160478	
5	0.8	70	9	25	6	4.9	3	4.2	● 150607		● 150608	
6	1	80	11	30	6	4.9	3	5	● 150612		● 150613	
8	1.25	90	12.5	35	8	6.2	3	6.8	● 150622		● 150623	
10	1.5	100	14	39	10	8	3	8.5	● 150637		● 150638	
12	1.75	110	14		* 10	* 8	3	10.2		● 151865		● 151866
14	2	110	14		* 12	* 9	3	12		● 151870		● 150663
16	2	110	18		12	9	3	14		● 150672		● 150673
20	2.5	140	24		16	12	4	17.5		● 150681		● 150682
24	3	160	27		16	12	4	21		● 151873		● 150690

* Norme DC / * DC Norm/ * Norma DC

*RTS360VS-3

sur demande
auf Anfrage
on request
su richiesta
sobre pedido
по запросу

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Synchronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

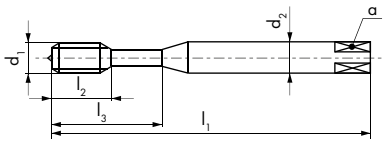
RTS
Rigid Tapping Synchro

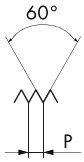
RTS362VS-3 — R40 — VS

RTS462VS-3 — R40 — VS

11 12 13 14 / 15 21 31 32 / 51 61 63 64 / 72 73 74 81 / 82 83 91 92 / 94

RTS362VS-3	RTS462VS-3	RTS362VS-3	RTS462VS-3
		NEW	NEW
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6GX	6GX	7GX	7GX





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		6G	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID	6H + mm
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	● 162797	0.020			● 184689	0.036		
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.35	● 162798	0.022			● 184691	0.041		
5	0.8	70	9	25	6	4.9	3	4.25	● 162799	0.024			● 184693	0.044		
6	1	80	11	30	6	4.9	3	5	● 162800	0.026			● 184695	0.050		
8	1.25	90	12.5	35	8	6.2	3	6.8	● 162801	0.028			● 184697	0.052		
10	1.5	100	14	39	10	8	3	8.5	● 162802	0.032			● 184699	0.060		
12	1.75	110	14		* 10	* 8	3	10.3			● 163253	0.034			● 184701	0.066
16	2	110	18		12	9	3	14			● 172037	0.038			● 184703	0.072

* Norme DC / * DC Norm/ * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

M ISO DIN 13

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

PM

~DIN 371 (d_2 h6)

RTS
Rigid Tapping Synchro

RTS362VS-5 R40 VS

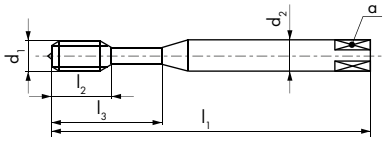
RTS365VS-5 R40 VS

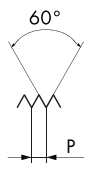
11 12 13 14
15 21 31 32
51 61 63 64
72 73 74 81
82 83 91 92
94

RTS362VS-5	RTS365VS-5		

< 2.5 x D

< 2.5 x D





E 1.5 x P

E 1.5 x P

6HX

6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
3	0.5	56	5.5	18	3.5(h9)	2.7	3	2.5	157648	
4	0.7	63	7.5	21	4.5(h9)	3.4	3	3.3	157650	
5	0.8	70	9	25	6	4.9	3	4.2	157652	162791
6	1	80	11	30	6	4.9	3	5	158074	151803
8	1.25	90	12.5	35	8	6.2	3	6.8	158076	157821
10	1.5	100	14	39	10	8	3	8.5	153286	157823

≥ Ø 6 mm
sur demande
auf Anfrage
on request
su richiesta
sobre pedido
no запросу

M ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

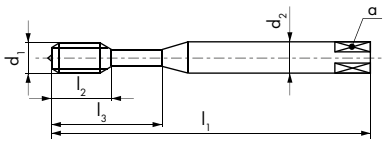
PM

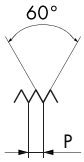
DC ~DIN 371 (d_2 h6)

DC ~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

	RTS523VS-4	RTS623VS-4	RTS565VS-3	RTS665VS-3
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX





Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
5	0.8	125	9	25	6	4.9	3	4.2	● 161038	
6	1	125	11	30	6	4.9	3	5	● 161041	
8	1.25	140	12.5	35	8	6.2	3	6.8	● 161044	
10	1.5	160	14	39	10	8	3	8.5	● 161047	
12	1.75	180	14		* 10	* 8	3	10.2		● 161050
16	2	200	18		12	9	3	14		● 161053

* Norme DC / * DC Norm/ * Norma DC

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
6	1	125	11	30	6	4.9	3	5	● 150614	
8	1.25	140	12.5	35	8	6.2	3	6.8	● 150624	
10	1.5	160	14	39	10	8	3	8.5	● 150639	
12	1.75	180	14		* 10	* 8	3	10.2		● 151867
16	2	200	18		12	9	3	14		● 150674

* Norme DC / * DC Norm/ * Norma DC

sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

GEWINDEFORMEN

In diesem Katalog finden Sie das Gewindeformer-Programm FS - FPS - FAS in einem separaten Kapitel ab Seite 244.

THREAD FORMING

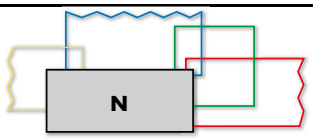
In this catalogue you will find the FS - FPS - FAS thread former programme in a separate chapter starting on page 244.

M ISO DIN 13

≤ Ø 2.8 > Ø 2.8

PM | HSS

~ISO 529



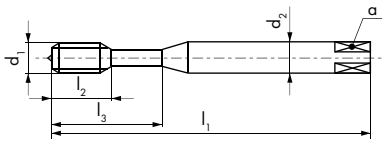
	N1110-1	N1110-2	N1110-3	N1110-S
			ISO 2 6H	ISO 2 6H

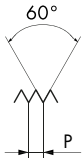
N1110-1

N1110-2

N1110-3 — 31 | 62 | 73 | 74 | 91

N1110-S





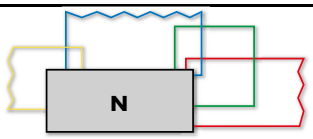
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N1110-1 ID	N1110-2 ID	N1110-3 ID	N1110-S ID
1	0.25	40	5.5		2.5	2.1	3	0.75	● 102744	● 102844	● 102917	● 111015
1.2	0.25	40	5.5		2.5	2.1	3	0.95	● 102746	● 102846	● 102919	● 111017
1.4	0.3	40	7		2.5	2.1	3	1.1	● 102747	● 102847	● 102920	● 111018
1.6	0.35	40	8		2.5	2.1	3	1.25	● 102749	● 102849	● 102922	● 111020
1.7	0.35	40	8		2.5	2.1	3	1.35	● 102750	● 102850	● 102923	● 111021
1.8	0.35	40	8		2.5	2.1	3	1.45	● 102751	● 102851	● 102924	● 111022
2	0.4	45	8		2.8	2.1	3	1.6	● 102759	● 102854	● 102934	● 111028
2.2	0.45	45	9.5		2.8	2.1	3	1.75	● 102761	● 102856	● 102937	● 111030
2.5	0.45	45	9.5		2.8	2.1	3	2.05	● 102763	● 102858	● 102941	● 111032
2.6	0.45	45	9.5		2.8	2.1	3	2.15	● 102765	● 102860	● 102944	● 111034
3	0.5	48	11	18	3.15	2.5	3	2.5	● 102766	● 102861	● 102947	● 111036
3.5	0.6	50	13	20	3.55	2.8	3	2.9	● 102769	● 102864	● 102950	● 111038
4	0.7	53	13	21	4	3.15	3	3.3	● 102771	● 102866	● 102956	● 111042
4.5	0.75	53	13	21	4.5	3.55	3	3.75	★ 102775	★ 102869	★ 102959	★ 111044
5	0.8	58	16	25	5	4	3	4.2	● 102776	● 102870	● 102965	● 111047
6	1	66	19	30	6.3	5	3	5	● 102781	● 102874	● 102973	● 111053
7	1	66	19	30	7.1	5.6	3	6	★ 102786	★ 102876	★ 102978	★ 111055
8	1.25	72	22	35	8	6.3	3	6.8	● 102788	● 102878	● 102986	● 111059
9	1.25	72	22	36	9	7.1	3	7.8	★ 102792	★ 102880	★ 102991	★ 111061
10	1.5	80	24	39	10	8	3	8.5	● 102752	● 102852	● 102931	● 111026

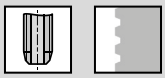
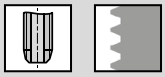
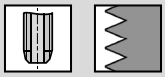
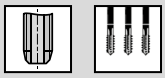
≤M1.5 ISO 1 4H

M ISO DIN 13

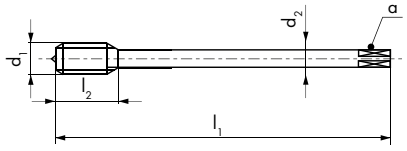
HSS

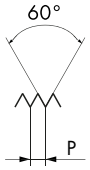
ISO 529



N1210-1				
N1210-2				
N1210-3		31 / 62 / 73 / 74 / 91		
N1210-S				

N1210-1	N1210-2	N1210-3	N1210-S
		ISO 2 6H	ISO 2 6H

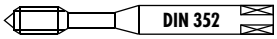


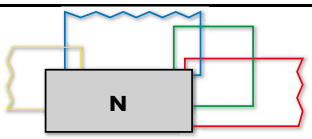


Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
11	1.5	85	22	8	6.3	3	9.5	✱ 103302	✱ 103427	● 103489	✱ 111168
12	1.75	89	24	9	7.1	3	10.2	● 103303	● 103428	● 103499	● 111173
14	2	95	24	11.2	9	3	12	● 103310	● 103430	● 103510	● 111179
16	2	102	32	12.5	10	3	14	● 103319	● 103432	● 103522	● 111185
18	2.5	112	30	14	11.2	3	15.5	● 103324	● 103434	● 103534	● 111191
20	2.5	112	37	14	11.2	3	17.5	● 103330	● 103436	● 103543	● 111196
22	2.5	115	32	16	12.5	3	19.5	✱ 103337	✱ 103438	✱ 103550	✱ 125567
24	3	130	45	18	14	4	21	● 103341	● 103440	● 103557	● 111204
27	3	135	45	20	16	4	24	✱ 103347	✱ 103442	✱ 103568	✱ 111211
30	3.5	138	48	20	16	4	26.5	● 103353	● 103444	● 103579	● 111216
33	3.5	151	51	22.4	18	4	29.5	✱ 103357	✱ 103446	✱ 103581	✱ 111218
36	4	162	57	25	20	4	32	✱ 103359	✱ 103448	✱ 103583	✱ 111220

M ISO DIN 13

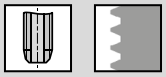
HSSE

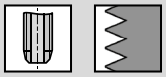




	NP110-1	NP110-2	NP110-3	NP110-S
	NEW	NEW	NEW	NEW
			ISO 2 6H	ISO 2 6H

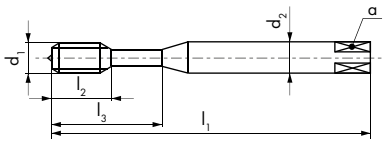
NP110-1

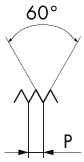
NP110-2


NP110-3


31 62 73 74 91

NP110-S



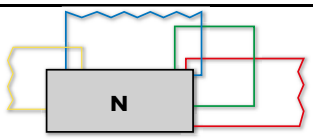


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.5	40	11	18	3.5	2.7	3	2.5	● 174678	● 174687	● 174696	● 173676
4	0.7	45	13	21	4.5	3.4	3	3.3	● 174679	● 174688	● 174697	● 173644
5	0.8	50	16	24	6	4.9	3	4.2	● 174680	● 174689	● 174698	● 173677
6	1	56	19	27	6	4.9	3	5	● 174681	● 174690	● 174699	● 173394

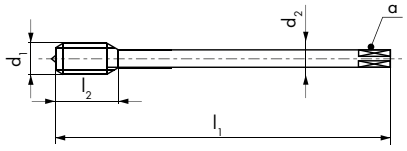
M ISO DIN 13

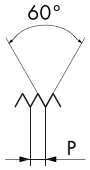
HSSE

DIN 352



	NP210-1	NP210-2	NP210-3	NP210-S
	NEW	NEW	NEW	NEW
			ISO 2 6H	ISO 2 6H

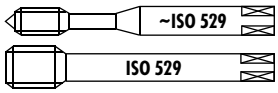


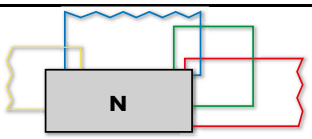


Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
8	1.25	63	22	6	4.9	3	6.8	● 174682	● 174691	● 174700	● 173645
10	1.5	70	24	7	5.5	3	8.5	● 174683	● 174692	● 174701	● 173646
12	1.75	75	28	9	7	3	10.2	● 174684	● 174693	● 174702	● 173647
14	2	80	30	11	9	3	12	● 174685	● 174694	● 174703	● 173648
16	2	80	32	12	9	3	14	● 180705	● 180706	● 180707	● 174677

M ISO DIN 13

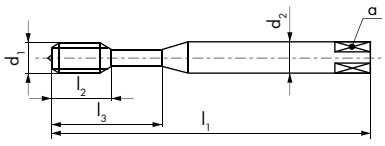
HSS





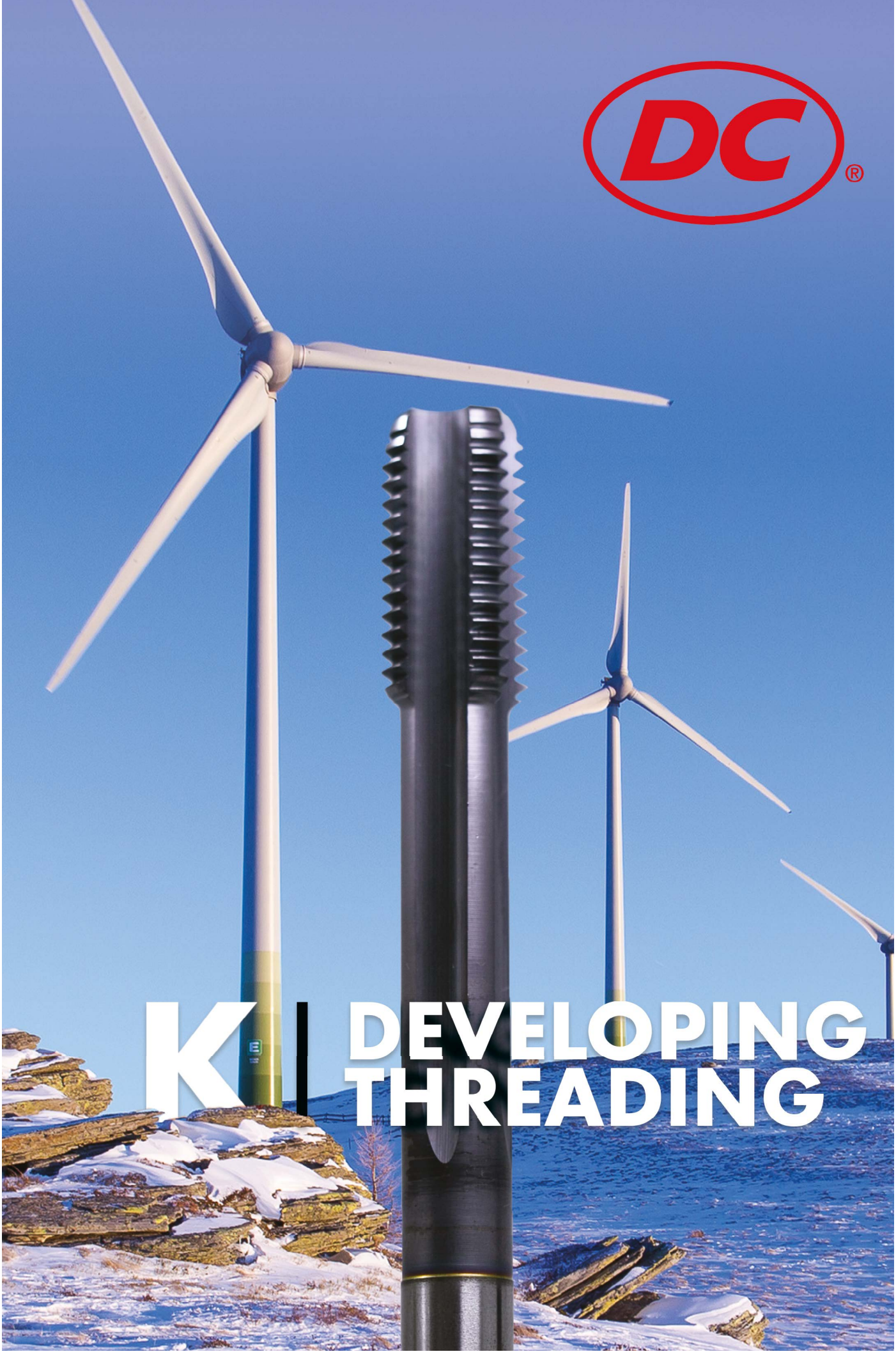
N1120-4		62 63 64 72 73 74 81 91
N1220-4		62 63 64 72 73 74 81 91
N1160-3	R40	63 72 73 74 81 91
N1260-3	R40	63 72 73 74 81 91

N1120-4	N1220-4	N1160-3	N1260-3
B 4 x P ISO 2 6H	B 4 x P ISO 2 6H	C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H



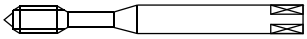
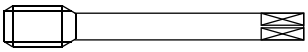
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	48	11	18	3.15	2.5	3	2.5	● 103068	
4	0.7	53	13	21	4	3.15	3	3.3	● 103075	
5	0.8	58	16	25	5	4	3	4.2	● 103082	
6	1	66	19	30	6.3	5	3	5	● 103090	
8	1.25	72	22	35	8	6.3	3	6.8	● 103102	
10	1.5	80	24	39	10	8	3	8.5	● 103060	
12	1.75	89	24		9	7.1	3	10.2		● 103670
14	2	95	24		11.2	9	3	12		● 103680
16	2	102	32		12.5	10	3	14		● 103690

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.5	48	5.5	18	3.15	2.5	3	2.5	✱ 103177	
4	0.7	53	7.5	21	4	3.15	3	3.3	✱ 103178	
5	0.8	58	9	25	5	4	3	4.2	✱ 103179	
6	1	66	11	30	6.3	5	3	5	✱ 103180	
8	1.25	72	12.5	35	8	6.3	3	6.8	✱ 103181	
10	1.5	80	14	39	10	8	3	8.5	✱ 103174	
12	1.75	89	14		9	7.1	3	10.2		✱ 103781
16	2	102	18		12.5	10	3	14		✱ 103782


DC
K | DEVELOPING
THREADING

MF

Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13
Directory — Machine taps ISO DIN 13

		N						
Merkmale **Characteristics**						V	TiN	R15	R40
Lochart **Hole type**								
			**N320-3**				**N350-3**	**N360-3**
DIN lang **DIN long**	**DIN 371**		124				124	131
ISO kurz **ISO short**	**ISO 529**							
Toleranz **Tolerance**	**ISO 2 6H**		124				124	131
Übermass **Oversize**	**ISO 3 6G**							131
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							
		**N410-3**	**N420-3**	**N420-4**	**N420V-4**	**N420TN-4**	**N450-3**	**N460-3**
DIN lang **DIN long**	**DIN 374/~DIN 376**	125 - 130		125 - 130	125 - 128	125 - 127	124	132 - 133
ISO kurz **ISO short**	**ISO 529**							
Toleranz **Tolerance**	**ISO 2 6H**	125 - 129		125 - 129	125 - 128	125 - 127	124	132 - 133
Übermass **Oversize**	**ISO 3 6G**							132
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
Toleranz **Tolerance**	**7H (EN 60423)**		128 - 129					
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**	130		130				

MF

Inhaltsverzeichnis — Maschinen- und Handgewindebohrer ISO DIN 13
Directory — Machine and hand taps ISO DIN 13

N					Z			
R40 V	R40 TiN				V	VS	R40 V	R45 VS
N360V-3	**N360TN-3**	**N1110-1**	**N1110-3**	**N1110-S**	**Z320V-3 Z320V-4**	**Z320VS-4**	**Z360V-3**	**Z370VS-3**
131	131				134	134	134	134
		146	146	146				
131	131	146	146	146	134	134	134	134
N460V-3	**N460TN-3**	**N1210-1**	**N1210-3**	**N1210-S**	**Z420V-4**	**Z420VS-4**	**Z460V-3**	**Z470VS-3**
132 - 133	132				135	135	135	135
		147 - 148	147 - 148	147 - 148				
132 - 133	132	147 - 148	147 - 148	147 - 148	135	135	135	135

MF

Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13
Directory — Machine taps ISO DIN 13

		H		S		SA		
Merkmale **Characteristics**		TiCN	R25 TiCN	VS	R35 VS		R15	R10
		NEW	NEW					
Lochart **Hole type**								
		H320-4 H320TC-4	**H350-3 H350TC-3**	**S320VS-4**	**S360VS-3**	**SA320-4**	**SA350-3**	**SA390-3**
DIN lang **DIN long**	**DIN 371**	136	137	138	138	140	140	139
ISO kurz **ISO short**	**ISO 529**							
Toleranz **Tolerance**	**ISO 2 6H**	136	137	138	138	140	140	139
Übermass **Oversize**	**ISO 3 6G**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**					140	140	
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							
		H420-4 H420TC-4	**H450-3 H450TC-3**	**S420VS-4**	**S460VS-3**	**SA420-4**	**SA450-3**	
DIN lang **DIN long**	**DIN 374/~DIN 376**	136	137	138	138	141	141	
ISO kurz **ISO short**	**ISO 529**							
Toleranz **Tolerance**	**ISO 2 6H**	136	137	138	138	141	141	
Übermass **Oversize**	**ISO 3 6G**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**					141	141	
Toleranz **Tolerance**	**7H (EN 60423)**							
LH Linksgewinde **LH Left-hand thread**	**ISO 2 6H**							

MF

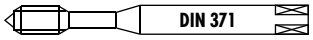
Inhaltsverzeichnis — Maschinengewindebohrer ISO DIN 13
Directory — Machine taps ISO DIN 13

TL		K	QTAP				RTS	
VS	R15 VS	TiCN	VS	VS	R40 VS	R40 VS	VS	R40 VS
			NEW	NEW	NEW	NEW		
TL320VS-4	**TL351VS-3**	**K313TC-3**	**Q320VS-4**	**Q323VS-4**	**Q360VS-3**	**Q363VS-3**	**RTS320VS-4**	**RTS362VS-3**
140	140	142	143	143	144	144	145	145
140	140	142	143	143	144	144	145	145
140	140							
TL420VS-4	**TL451VS-3**	**K413TC-3**	**Q420VS-4**	**Q423VS-4**	**Q460VS-3**	**Q463VS-3**	**RTS420VS-4**	**RTS462VS-3**
141	141	142	143	143	144	144	145	145
141	141	142	143	143	144	144	145	145
141	141							

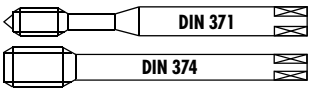
MF ISO DIN 13

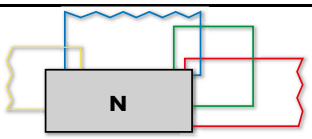
≤ Ø 2.8 > Ø 2.8

PM | HSSE

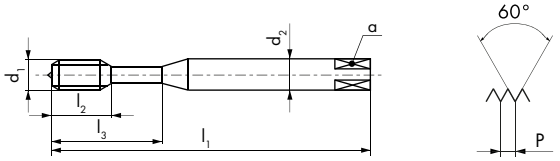


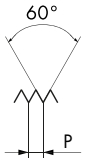
HSSE





		N320-3		N350-3	N450-3
N320-3		62 63 64 72 73 74 81 91			
N350-3	R15	62 63 64 72 73 74 81 91			
N450-3	R15	62 63 64 72 73 74 81 91			





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
2	0.25	45	8		2.8	2.1	2	1.75	● 142689
2.5	0.35	50	10		2.8	2.1	3	2.15	● 142691
2.6	0.35	50	10		2.8	2.1	3	2.25	★ 142692
3	0.35	56	12	18	3.5	2.7	3	2.65	● 142693
3.5	0.35	56	13	20	4	3	3	3.15	● 142694

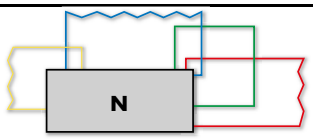
Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
4	0.5	63	14	21	4.5	3.4	2	3.5	● 101586	
5	0.5	70	15	25	6	4.9	3	4.5	● 101588	
6	0.75	80	17	30	6	4.9	3	5.25	● 101590	
8	1	90	20		6	4.9	3	7		● 102326
9	0.75	90	20		7	5.5	3	8.25		● 102328
10	1	100	22		7	5.5	3	9		● 102313
18	1.5	110	26		14	11	4	16.5		★ 102322

P 0.25 ISO 1 4H

MF ISO DIN 13

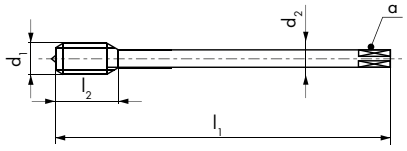
HSSE

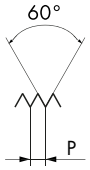
DIN 374



N410-3			31 62 73 74 91
N420-4			62 63 64 72 73 74 81 91
N420V-4		V	11 12 31 32
N420TN-4		TiN	11 12 13 14 32

N410-3	N420-4	N420V-4	N420TN-4
< 1.5 x D			
C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





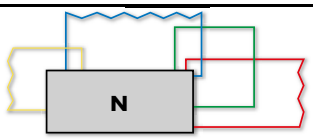
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
* 4	0.35	63	14	2.8	2.1	3	3.65		● 142695		
4	0.5	63	14	2.8	2.1	3	3.5	● 101923	● 102145	● 142715	
4.5	0.5	70	15	3.5	2.7	3	4		● 102150		
5	0.5	70	15	3.5	2.7	3	4.5	● 101941	● 102167	● 142716	
5	0.75	70	15	3.5	2.7	3	4.25		● 102168		
5.5	0.5	80	17	4	3	3	5		● 142696		
6	0.5	80	17	4.5	3.4	3	5.5	● 101951	● 102178	● 142717	
6	0.75	80	17	4.5	3.4	3	5.25	● 101952	● 102179	● 102281	● 102249
7	0.5	80	17	5.5	4.3	3	6.5		● 102187		
7	0.75	80	17	5.5	4.3	3	6.25	● 101954	● 102188		
8	0.5	90	20	6	4.9	3	7.5	● 101955	● 102190	● 142718	
8	0.75	90	20	6	4.9	3	7.25	● 101956	● 102191	● 102283	
8	1	90	20	6	4.9	3	7	● 101957	● 102192	● 102284	● 102250
9	0.5	90	20	7	5.5	3	8.5		● 142697		
9	0.75	90	20	7	5.5	3	8.25		● 102200		
9	1	90	20	7	5.5	3	8		● 102201	● 143935	
10	0.5	100	22	7	5.5	3	9.5		● 142698		
10	0.75	100	22	7	5.5	3	9.25	● 101863	● 102056		
10	1	100	22	7	5.5	3	9	● 101864	● 102057	● 102262	● 102239
10	1.25	100	22	7	5.5	3	8.8	● 101865	● 102058	● 142719	● 148108

*N420-3 2.5 x P

MF ISO DIN 13

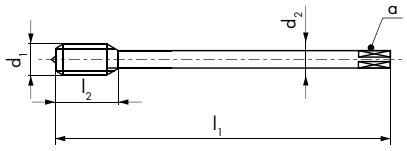
HSSE

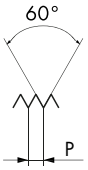
DIN 374



N410-3			31 62 73 74 91
N420-4			62 63 64 72 73 74 81 91
N420V-4		V	11 12 31 32
N420TN-4		TiN	11 12 13 14 32

N410-3	N420-4	N420V-4	N420TN-4
< 1.5 x D			
C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
11	0.5	100	19	8	6.2	3	10.5		● 142699		
11	0.75	100	19	8	6.2	3	10.25		● 142700		
11	1	100	19	8	6.2	3	10		● 142701		
11	1.25	100	19	8	6.2	3	9.8		● 142702		
12	0.5	100	14	9	7	3	11.5		● 102066		
12	0.75	100	24	9	7	3	11.25		● 142703		
12	1	100	24	9	7	3	11	● 101867	● 102067	● 142345	● 102241
12	1.25	100	24	9	7	3	10.8	● 101868	● 102068	● 142721	
12	1.5	100	24	9	7	3	10.5	● 101869	● 102069	● 102264	● 102242
13	1	100	21	11	9	3	12	● 158401	● 142704		
14	0.5	100	14	11	9	3	13.5		● 142705		
14	0.75	100	24	11	9	3	13.25		● 142706		
14	1	100	24	11	9	3	13	● 101871	● 102077		
14	1.25	100	24	11	9	3	12.8	● 101872	● 102078		
14	1.5	100	24	11	9	3	12.5	● 101873	● 102079	● 102266	● 102244
15	1	100	26	12	9	3	14	● 101875	● 102085		
15	1.5	100	26	12	9	3	13.5	● 101876	● 102086		
16	0.75	100	26	12	9	3	15.25		● 142708		
16	1	100	26	12	9	* 3	15	● 101877	● 102087		
16	1.25	100	26	12	9	* 3	14.8	● 101878	● 102088		
16	1.5	100	26	12	9	* 3	14.5	● 101879	● 102089	● 102268	● 102246
17	1	100	26	12	9	3	16		● 142709		
17	1.5	100	26	12	9	3	15.5		● 142710		
18	0.75	110	26	14	11	4	17.25		● 142711		
18	1	110	26	14	11	4	17	● 101881	● 102095		
18	1.5	110	26	14	11	4	16.5	● 101882	● 102096	● 102270	● 145350
18	2	125	33	14	11	3	16		● 142712		

* N410-3 = 4

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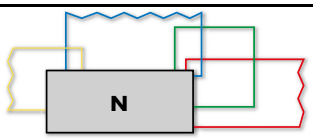
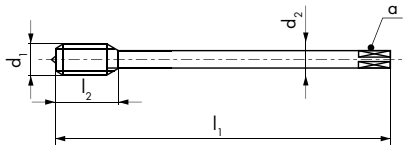
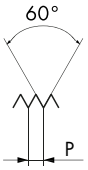
HSSE

DIN 374



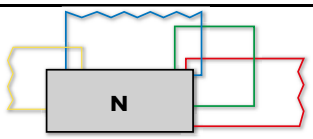
	N410-3	N420-4	N420V-4	N420TN-4
				
	C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	N410-3: 31 62 73 74 91	N420-4: 62 63 64 72 73 74 81 91	N420V-4: 11 12 31 32	N420TN-4: 11 12 13 14 32

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			N410-3 ID	N420-4 ID	N420V-4 ID	N420TN-4 ID
20	1	125	28	16	12	4	19		102098		
20	1.5	125	28	16	12	4	18.5	101884	102099	102272	143932
20	2	140	36	16	12	3	18	105130	102100		
22	1	125	28	18	14.5	4	21		102104		
22	1.5	125	28	18	14.5	4	20.5	101886	102105	102274	
22	2	140	36	18	14.5	3	20	101887	142714		
24	1	140	30	18	14.5	4	23		102107		
24	1.5	140	30	18	14.5	4	22.5	101889	102108	102276	
24	2	140	34	18	14.5	4	22	101890	102109	102277	
25	1	140	30	18	14.5	4	24		142722		
25	1.5	140	30	18	14.5	4	23.5	101892	102112		
25	2	140	34	18	14.5	4	23		142723		
26	1	140	30	18	14.5	4	25		102113		
26	1.5	140	30	18	14.5	4	24.5	101893	102114	145896	
27	1.5	140	34	20	16	4	25.5		102115		
27	2	140	34	20	16	4	25	101894	102116		
28	1	140	30	20	16	4	27		142725		
28	1.5	140	30	20	16	4	26.5	101896	102118		
28	2	140	30	20	16	4	26	122023			

MF ISO DIN 13

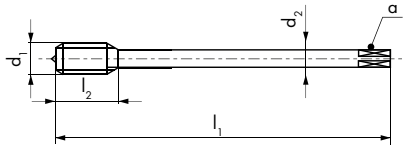
HSSE

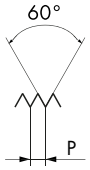
DIN 374



N410-3		31 62 73 74 91
N420-4		62 63 64 72 73 74 81 91
N420V-4	V	11 12 31 32
N420-3		62 63 64 72 73 74 81 91

N410-3	N420-4	N420V-4	N420-3
< 1.5 x D			
C 2.5 x P	B 4 x P	B 4 x P	2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 7H



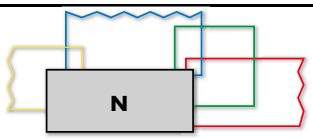


Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	ID	ID
30	1	150	32	22	18	4	29	● 101898	● 102121		
30	1.5	150	32	22	18	4	28.5	● 101899	● 102122	● 143978	
30	2	150	32	22	18	4	28	● 101900	● 102123	● 143766	
32	1	150	32	22	18	4	31	● 101902			
32	1.5	150	32	22	18	4	30.5	● 101903	● 102126		● 143812
32	2	150	32	22	18	4	30	● 101904	● 102127		
33	1.5	160	32	25	20	4	31.5	● 101905	● 102128		
33	2	160	32	25	20	4	31	● 101906	● 102129		
34	1.5	170	32	28	22	4	32.5	● 101909			
35	1.5	170	32	28	22	4	33.5	● 101910	● 102132		
35	2	170	32	28	22	4	33	● 101911			
36	1.5	170	34	28	22	4	34.5	● 101912	● 102134		
36	2	170	34	28	22	4	34	● 101913	● 102135		
36	3	200	45	28	22	4	33	● 101914	● 102136		
38	1.5	170	34	28	22	4	36.5	● 101917	● 102139		
38	2	170	34	28	22	4	36	● 101918			
39	2	170	34	32	24	4	37	● 101920			
39	3	200	45	32	24	4	36	● 101921			

MF ISO DIN 13

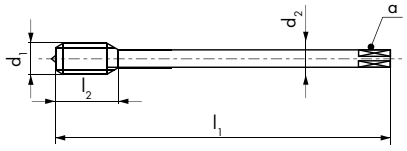
HSSE

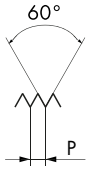
DIN 374



N410-3		31 62 73 74 91
N420-4		62 63 64 72 73 74 81 91
N420-3		62 63 64 72 73 74 81 91

N410-3	N420-4	N420-3



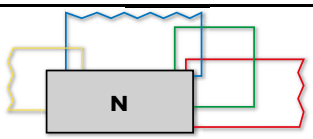


Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	N410-3 ID	N420-4 ID	N420-3 ID
40	1	170	34	32	24	5	39	● 101925		
40	1.5	170	34	32	24	5	38.5	● 101926	● 102152	● 143813
40	2	170	34	32	24	5	38	● 101927	● 102153	
40	3	200	45	32	24	4	37	✱ 101928		
42	1.5	170	34	32	24	5	40.5	● 101929	● 102155	
42	2	170	34	32	24	5	40	● 101930	● 102156	
42	3	200	45	32	24	4	39	● 101931	● 102157	
45	1.5	180	34	36	29	5	43.5	● 101933	● 102159	
45	2	180	34	36	29	5	43	● 101934		
45	3	200	45	36	29	4	42	● 101935		
48	1.5	190	36	36	29	5	46.5	● 101937	● 102163	
48	2	190	36	36	29	5	46	● 101938	● 102164	
48	3	220	48	36	29	5	45	● 101939	● 102165	
50	1.5	190	36	36	29	5	48.5	● 101943	● 102176	● 143814
50	2	190	36	36	29	5	48	● 101944	✱ 102177	
52	2	190	36	40	32	5	50	● 101947		
60	2	220	42	45	35	5	58	● 105132		
63	1.5	220	38	45	35	5	61.5			● 143815

MF ISO DIN 13

HSSE

DIN 374



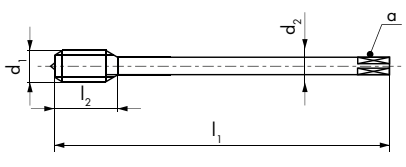
N410-3 LH | N420-4 LH

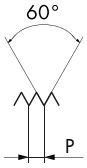
N410-3 LH LH

31 62 73 74 91

N420-4 LH LH

62 63 64 72 73 74 81 91





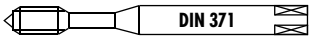
ISO 2 6H | ISO 2 6H

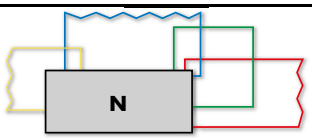
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
4	0.5	63	14	2.8	2.1	3	3.5	• 104844	
5	0.5	70	15	3.5	2.7	3	4.5	• 104845	
6	0.5	80	17	4.5	3.4	3	5.5	• 104846	• 104870
6	0.75	80	17	4.5	3.4	3	5.25	• 104847	• 105133
7	0.75	80	17	5.5	4.3	3	6.25	• 104848	
8	0.5	90	20	6	4.9	3	7.5	• 104849	
8	0.75	90	20	6	4.9	3	7.25	• 104850	• 104871
8	1	90	20	6	4.9	3	7	• 104851	• 104872
10	0.75	100	22	7	5.5	3	9.25	• 104852	
10	1	100	22	7	5.5	3	9	• 104853	• 104873
10	1.25	100	22	7	5.5	3	8.8		• 104874
12	1	100	24	9	7	3	11	• 104854	• 104875
12	1.25	100	24	9	7	3	10.8	• 104855	• 104876
12	1.5	100	24	9	7	3	10.5	• 104856	• 104877
14	1	100	24	11	9	3	13	• 104857	• 104878
14	1.25	100	24	11	9	3	12.8	• 104858	
14	1.5	100	24	11	9	3	12.5	• 104859	• 104879
16	1	100	26	12	9	* 3	15	• 104860	• 104880
16	1.5	100	26	12	9	* 3	14.5	• 104861	• 104881
18	1	110	26	14	11	4	17	• 104862	
18	1.5	110	26	14	11	4	16.5	• 104863	• 104882
20	1	125	28	16	12	4	19	• 104864	
20	1.5	125	28	16	12	4	18.5	• 104865	• 104883
22	1.5	125	28	18	14.5	4	20.5	• 104866	• 104884
24	1.5	140	30	18	14.5	4	22.5	• 104867	• 104885
24	2	140	34	18	14.5	4	22	• 104868	• 104886
28	1.5	140	30	20	16	4	26.5	• 105166	
30	1.5	150	32	22	18	4	28.5	• 105167	• 105165
30	2	150	32	22	18	4	28	• 105168	

* N410-3 LH = 4

MF ISO DIN 13

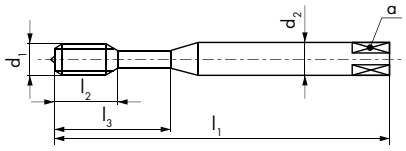
HSSE

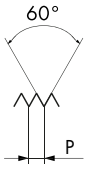




N360-3	R40		63 / 72 / 73 / 74 / 81 / 91
N360V-3	R40	V	11 / 12 / 32
N360TN-3	R40	TiN	11 / 12 / 13 / 14 / 32

N360-3	N360V-3	N360TN-3	N360-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G



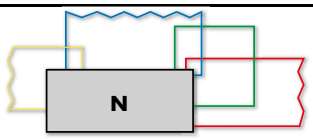


Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID	ID 6H + mm
4	0.5	63	7.5	21	4.5	3.4	3	3.5	● 101632	● 101712	● 111618	● 101631 0.020
5	0.5	70	9	25	6	4.9	3	4.5	● 101641	● 101714	● 111617	● 101640 0.020
6	0.5	80	11	30	6	4.9	3	5.5	● 101648	● 143990		
6	0.75	80	11	30	6	4.9	3	5.25	● 101650	● 101716	● 101702	● 101649 0.022
8	0.75	90	12.5	35	8	6.2	3	7.25	● 101658	● 101719		● 101657 0.022
8	1	90	12.5	35	8	6.2	3	7	● 101660	● 101720	● 101704	● 101659 0.026
10	0.75	100	14	39	10	8	3	9.25	● 101606	● 144401		
10	1	100	14	39	10	8	3	9	● 101608	● 101706	● 101695	● 101607 0.026
10	1.25	100	14	39	10	8	3	8.8	● 101609	● 105134	● 110965	

MF ISO DIN 13

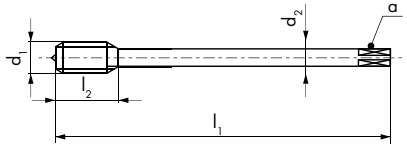
HSSE

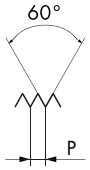
DIN 374



N460-3	R40		63 72 73 74 81 91
N460V-3	R40	V	11 12 32
N460TN-3	R40	TiN	11 12 13 14 32

N460-3	N460V-3	N460TN-3	N460-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D





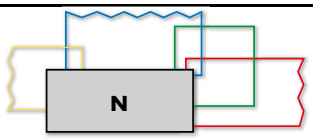
N460-3	N460V-3	N460TN-3	N460-3
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	ID	ID 6H + mm
12	1	100	14	9	7	3	11	● 102353	● 102462	● 102447	● 102352 0.026
12	1.25	100	14	9	7	3	10.8	● 102354	● 102463	● 144202	
12	1.5	100	14	9	7	3	10.5	● 102356	● 102464	● 102448	● 102355 0.032
13	1	100	14	11	9	3	12	● 102364			
14	1	100	14	11	9	3	13	● 102365	● 102466		
14	1.5	100	14	11	9	3	12.5	● 102367	● 102467	● 102450	● 102366 0.032
15	1	100	14	12	9	3	14	● 102370			
15	1.5	100	18	12	9	3	13.5	● 102371			
16	1	100	14	12	9	4	15	● 102372	● 102469		
16	1.5	100	14	12	9	4	14.5	● 102374	● 102470	● 102452	● 102373 0.032
18	1	110	18	14	11	4	17	● 102380	● 143926		
18	1.5	110	18	14	11	4	16.5	● 102382	● 102472	● 145346	● 102381 0.032
20	1	125	20	16	12	4	19	● 102384	● 146377		
20	1.5	125	20	16	12	4	18.5	● 102386	● 102474	● 148780	
20	2	140	24	16	12	4	18	● 102387	● 143566		
22	1	125	20	18	14.5	4	21	● 102392	● 147702		
22	1.5	125	20	18	14.5	4	20.5	● 102393	● 102476		
24	1.5	140	22	18	14.5	4	22.5	● 102396	● 102478		
24	2	140	22	18	14.5	4	22	● 102397	● 102479		
25	1.5	140	22	18	14.5	4	23.5	● 102399	● 143810		
26	1.5	140	22	18	14.5	4	24.5	● 102400	● 143952		
27	1.5	140	22	20	16	4	25.5	● 102401	● 143965		
27	2	140	22	20	16	4	25	● 102402	● 144201		
28	1.5	140	22	20	16	4	26.5	● 102403	● 144997		

MF ISO DIN 13

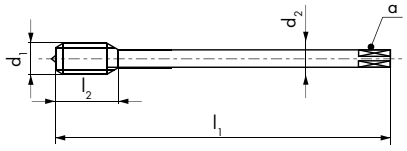
HSSE

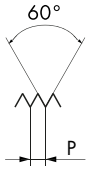
DIN 374



N460-3	R40		63 72 73 74 81 91			
N460V-3	R40	V	11 12 32			

N460-3	N460V-3		





N460-3	N460V-3		

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			N460-3 ID	N460V-3 ID
30	1.5	150	24	22	18	4	28.5	● 102404	● 142524
30	2	150	24	22	18	4	28	● 102405	● 142581
32	1.5	150	24	22	18	4	30.5	● 102406	● 143605
33	2	160	26	25	20	4	31	● 102407	● 147604
33	3	180	33	25	20	4	30	● 175437	● 150448
35	1.5	170	24	28	22	5	33.5	● 102408	● 146846
36	1.5	170	24	28	22	5	34.5	● 102409	● 143824
36	2	170	28	28	22	5	34	● 175436	● 164870
36	3	200	36	28	22	4	33	● 115072	● 150453
39	3	200	40	32	24	5	36	● 174995	● 122669
42	3	200	40	32	24	5	39	● 174996	● 150436

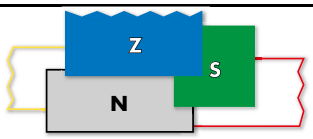
MF ISO DIN 13

Z320 Z360

PM HSSE

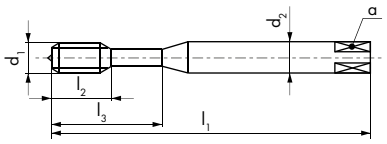
DIN 371

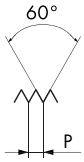
~DIN 371 (d_2 h6)



Z320V-4	V		11 12 13 21 32	
Z320VS-4	VS		11 12 13 14 21 22 23 32 61 63 94	
Z360V-3	R40 V		12 21 32	
Z370VS-3	R45 VS	CLASSIC	14 15 21 22 23 24 51 61 94	
Z370VS-3	R45 VS	SYNCHRO	13 14 15 21 22 23 24 51 52	

Z320V-4	Z320VS-4	Z360V-3	Z370VS-3
		< 2.5 x D	< 3 x D
			PM
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	6HX





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
* 3	0.35	56	12	18	3.5	2.7	3	2.65	• 115468	
6	0.75	80	17	30	6	4.9	3	5.25	• 142726	• 123691
8	1	90	20	35	8	6.2	3	7	• 142727	• 124289
10	1	100	22	39	10	8	3	9	• 142728	• 120060
10	1.25	100	22	39	10	8	3	8.8	• 196023	• 196024

Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.5	63	7.5	21	4.5	3.4	3	3.5	• 104675
5	0.5	70	9	25	6	4.9	3	4.5	• 104676
6	0.75	80	11	30	6	4.9	3	5.25	• 104677
8	1	90	12.5	35	8	6.2	3	7	• 104678
10	1	100	14	39	10	8	3	9	• 104674

Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
6	0.75	80	11	30	6	4.9	3	5.25	• 166117
8	1	90	12.5	35	8	6.2	3	7	• 166118
10	1	100	14	39	10	8	3	9	• 166119
10	1.25	100	14	39	10	8	3	8.8	• 196020

*Z320V-3 2.5 x P

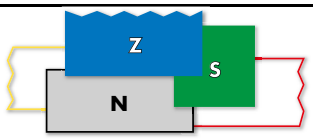
MF ISO DIN 13

Z420 Z460

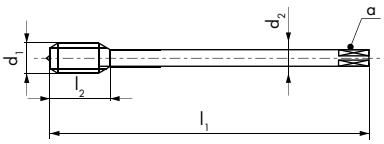
PM HSSE

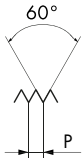
DIN 374

~DIN 376 (d_2 h6)



Z420V-4	V		11 12 13 21 32	
Z420VS-4	VS		11 12 13 14 21 22 23 32 61 63 94	
Z460V-3	R40 V		12 21 32	
Z470VS-3	R45 VS	CLASSIC	14 15 21 22 23 24 51 61 94	
Z470VS-3	R45 VS	SYNCHRO	13 14 15 21 22 23 24 51 52	





Z420V-4	Z420VS-4	Z460V-3	Z470VS-3
			PM
ISO 2 6H	ISO 2 6H	ISO 2 6H	6HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			Z420V-4 ID	Z420VS-4 ID	Z460V-3 ID	Z470VS-3 ID
12	1	100	24	9	7	3	11	● 142729			
12	1.5	100	24	9	7	3	10.5	● 142730	● 120421		
14	1.5	100	24	11	9	3	12.5	● 142731	● 120688		
16	1.5	100	26	12	9	3	14.5	● 142732	● 120878		
18	1.5	110	26	14	11	4	16.5	● 196025	● 196027		
20	1.5	125	28	16	12	4	18.5	● 163931	● 196026		

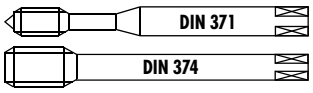
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			Z460V-3 ID	Z470VS-3 ID
12	1	100	14	9	7	3	11	● 104729	
12	1.5	100	14	9	7	3	10.5	● 104730	
14	1.5	100	14	11	9	3	12.5	● 104731	
16	1.5	100	14	12	9	4	14.5	● 104732	
18	1.5	110	18	14	11	4	16.5	● 104733	
20	1.5	125	20	16	12	4	18.5	● 104734	
22	1.5	125	20	18	14.5	4	20.5	● 104735	
24	1.5	140	22	18	14.5	4	22.5	● 104736	
24	2	140	22	18	14.5	4	22	● 104737	

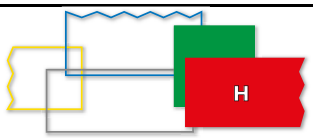
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			Z470VS-3 ID
12	1.5	110	14	* 10	* 8	4	10.5	● 166120
14	1.5	110	14	* 12	* 9	4	12.5	● 166121
16	1.5	110	18	12	9	4	14.5	● 166122
18	1.5	125	21	14	11	4	16.5	● 196021
20	1.5	140	24	16	12	4	18.5	● 196022

* Norme DC / * DC Norm/ * Norma DC

MF ISO DIN 13

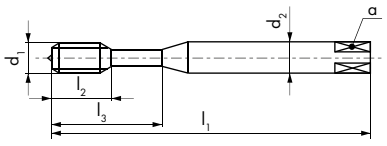
PM

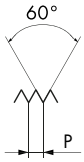




H320-4			15 16 62 64 82		
H420-4			15 16 62 64 82		
H320TC-4		TiCN	15 16 24 31 82 83 92 93		
H420TC-4		TiCN	15 16 24 31 82 83 92 93		

H320-4	H420-4	H320TC-4	H420TC-4
		NEW	NEW
B 4xP	B 4xP	B 4xP	B 4xP
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
6	0.75	80	17	30	6	4.9	3	5.25	● 101214		● 196035	
8	0.75	90	20	35	8	6.2	3	7.25	● 101216			
8	1	90	20	35	8	6.2	3	7	● 101217		● 196036	
10	1	100	22	39	10	8	3	9	● 101204		● 172963	
10	1.25	100	22	39	10	8	3	8.8	● 175213		● 173079	
12	1.25	100	24		9	7	4	10.8		● 101273		
12	1.5	100	24		9	7	4	10.5		● 101274		● 196037
14	1.5	100	24		11	9	4	12.5		● 101276		● 164053
16	1.5	100	26		12	9	4	14.5		● 101278		● 196038
18	1.5	110	26		14	11	4	16.5		● 101280		● 196039
20	1.5	125	28		16	12	4	18.5		● 101282		● 148362
24	2	140	34		18	14.5	4	22		● 101285		

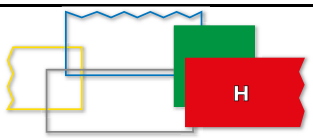
MF ISO DIN 13

≤ Ø 25.4 > Ø 25.4

PM | HSSE

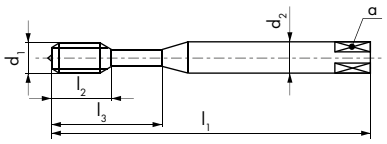
DIN 371

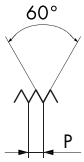
DIN 374



H350-3	R25		15 16 62 64 82
H450-3	R25		15 16 62 64 82
H350TC-3	R25	TiCN	15 16 24 31 82 83 92 93
H450TC-3	R25	TiCN	15 16 24 31 82 83 92 93

H350-3	H450-3	H350TC-3	H450TC-3
		NEW	NEW
< 1.5 x D	< 1.5 x D	< 1.5 x D	< 1.5 x D
C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H	C 2.5 x P ISO 2 6H

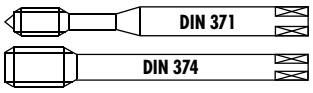


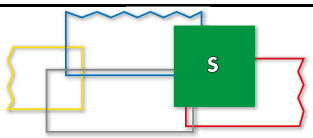


Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
6	0.75	80	11	30	6	4.9	3	5.25	• 101249		• 196033	
8	0.75	90	12.5	35	8	6.2	3	7.25	• 101252			
8	1	90	12.5	35	8	6.2	3	7	• 101253		• 150356	
10	1	100	14	39	10	8	3	9	• 101235		• 148753	
10	1.25	100	14	39	10	8	3	8.8	• 145590		• 196034	
12	1	100	14		9	7	4	11		• 101302		
12	1.5	100	14		9	7	4	10.5		• 101303		• 145561
14	1.5	100	14		11	9	4	12.5		• 101306		• 184003
16	1.5	100	14		12	9	4	14.5		• 101308		• 176013
18	1.5	110	18		14	11	4	16.5		• 101310		• 160146
20	1.5	125	20		16	12	4	18.5		• 101312		• 160147
22	1.5	125	20		18	14.5	4	20.5		• 101314		
24	1.5	140	22		18	14.5	4	22.5		• 101316		
24	2	140	22		18	14.5	4	22		• 101317		
27	2	140	22		20	16	4	25		• 101319		
30	1.5	150	24		22	18	4	28.5		• 101321		
30	2	150	24		22	18	4	28		• 101322		

MF ISO DIN 13

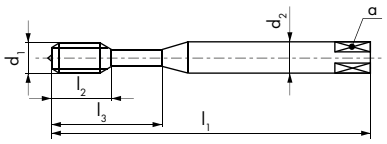
PM

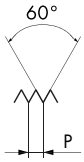




S320VS-4	VS	13 15 16 22 23 24 52	
S420VS-4	VS	13 15 16 22 23 24 52	
S360VS-3	R35 VS	13 15 16 22 23 24 52	
S460VS-3	R35 VS	13 15 16 22 23 24 52	

S320VS-4	S420VS-4	S360VS-3	S460VS-3
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	6HX	6HX





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	0.75	80	17	30	6	4.9	3	5.25	* 123690	
8	1	90	20	35	8	6.2	3	7	● 124288	
10	1	100	22	39	10	8	3	9	● 120059	
12	1.5	100	24		9	7	4	10.5		● 120420
14	1.5	100	24		11	9	4	12.5		● 120687
16	1.5	100	26		12	9	4	14.5		● 120877

Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
8	1	90	12.5	35	8	6.2	3	7	● 111528	
10	1	100	14	39	10	8	3	9	● 111529	
12	1.5	100	14		9	7	4	10.5		● 111540
14	1.5	100	14		11	9	4	12.5		● 111541
16	1.5	100	14		12	9	4	14.5		● 111542

MF ISO DIN 13

PM

~DIN 371

aero

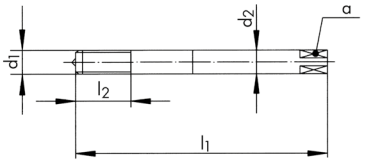
SA390-3

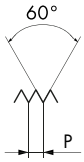
R10

16 / 53

< 1.5 x D

< 1.5 x D





C
2.5 x P

6HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
10	**1**	100	30	10	8	3	9	* **149751**
12	**1**	110	35	12	9	4	11	* **149769**
12	**1.5**	110	35	12	9	4	10.5	* **149773**
14	**1.5**	110	40	16	12	4	12.5	* **149790**

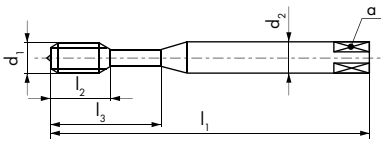
MF ISO DIN 13

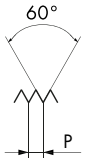
PM

~DIN 371

aero

SA320-4					15	16	52	64				
SA350-3		R15			15	16	52	64				
TL320VS-4			VS		41	42						
TL351VS-3		R15		VS	41	42						





	SA320-4	SA350-3	TL320VS-4	TL351VS-3
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	4HX	4HX	4HX	4HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
4	0.5	63	14		4.5	3.4	3	3.5		✱ 149079		● 152033
5	0.5	70	15		6	4.9	3	4.5		● 149144		● 152049
6	0.5	80	15	23	6	4.9	3	5.5	✱ 149193		✱ 152058	● 152059
8	1	90	18	29	8	6.2	3	7	● 149304	● 149306		● 152080
10	1	100	20	33	10	8	3	9	● 149362	● 149364		● 152093

									SA320-4	SA350-3	TL320VS-4	TL351VS-3
									6HX	6HX	6HX	6HX
Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
4	0.5	63	14		4.5	3.4	3	3.5	● 149081	● 149083		● 152035
5	0.5	70	15		6	4.9	3	4.5	● 149146	● 149148		● 152051
6	0.5	80	15	23	6	4.9	3	5.5		✱ 149199		● 152061
8	1	90	18	29	8	6.2	3	7	● 149308	● 149310		● 148019
10	1	100	20	33	10	8	3	9	● 149366	● 149368	✱ 152094	● 148026

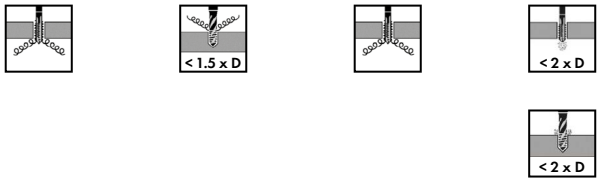
MF ISO DIN 13

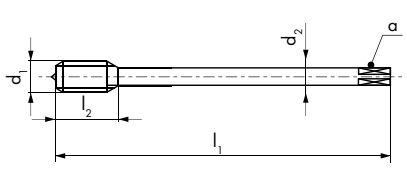
PM

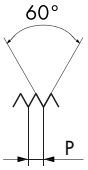
~DIN 374

aero

	SA420-4	SA450-3	TL420VS-4	TL451VS-3
	15 16 52 64	15 16 52 64	41 42	41 42
		R15	VS	R15 VS







								SA420-4	SA450-3	TL420VS-4	TL451VS-3
								B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
								4HX	4HX	4HX	4HX
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1	100	19	9	7	4	11	* 152209		* 152218	
12	1.5	100	24	9	7	4	10.5		* 152213		
16	1.5	100	26	12	9	4	14.5		* 152216		* 152226
								6HX	6HX	6HX	6HX
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1	100	19	9	7	4	11	* 152228		* 152237	
12	1.5	100	24	9	7	4	10.5	* 152227			
14	1.5	100	24	11	9	4	12.5		* 152233	* 152238	
16	1	100	23	12	9	4	15				* 152244
16	1.5	100	26	12	9	4	14.5		* 152235		

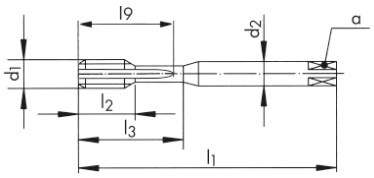
MF ISO DIN 13

CLASSIC SYNCHRO

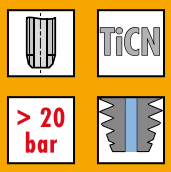
PM

DIN 371
DIN 376

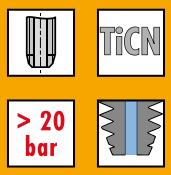
K

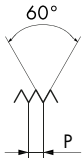
	K313TC-3	K413TC-3		
				

K313TC-3

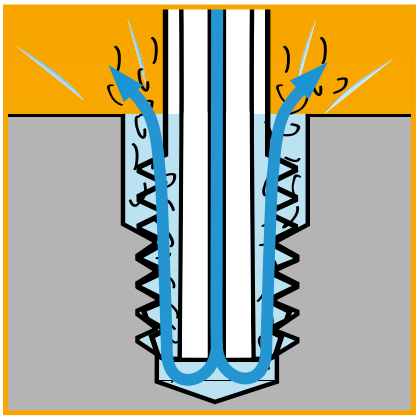


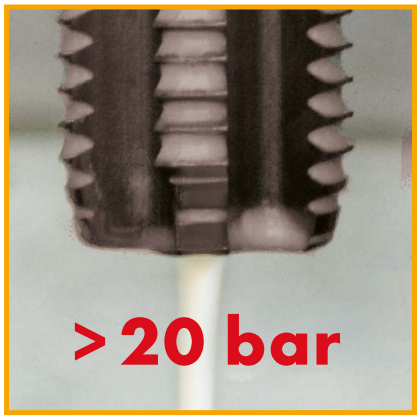
K413TC-3





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	l_9 mm	d_2 mm	a mm			ID	ID
10	1	100	22	39	37	10	8	3	9	● 175729	
10	1.25	100	22	39	37	10	8	3	8.8	● 196067	
12	1	110	24		42	9	7	3	11		● 175731
12	1.25	110	24		42	9	7	3	10.8		● 175733
12	1.5	110	24		42	9	7	3	10.5		● 175735
14	1.5	110	28		49	11	9	3	12.5		● 175737
16	1.5	110	30		56	12	9	3	14.5		● 175739
20	1.5	140	36		70	16	12	5	18.5		● 171205

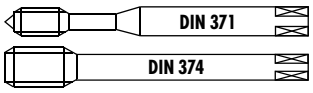




MF ISO DIN 13

CLASSIC SYNCHRO

PM



QTAP

Q320VS-4 VS

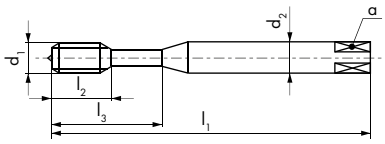
Q420VS-4 VS

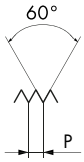
Q323VS-4 VS

Q423VS-4 VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q320VS-4	Q420VS-4	Q323VS-4	Q423VS-4
NEW	NEW	NEW	NEW
B 4xP	B 4xP	B 4xP	B 4xP
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
6	0.75	80	17	30	6	4.9	3	5.25	● 197661		● 197684	
8	1	90	20	35	8	6.2	3	7	● 197662		● 197685	
10	1	100	22	39	10	8	3	9	● 197663		● 197686	
12	1	100	24		9	7	3	11		● 197664		● 197687
12	1.5	100	24		9	7	3	10.5		● 197665		● 197688
14	1.5	100	24		11	9	3	12.5		● 197666		● 197689
16	1.5	100	26		12	9	3	14.5		● 197667		● 197690
18	1.5	110	26		14	11	4	16.5		● 197668		● 197691
20	1.5	125	28		16	12	4	18.5		● 197669		● 197692

MF ISO DIN 13

CLASSIC SYNCHRO

≤ Ø 16 > Ø 16

PM HSSE

DIN 371

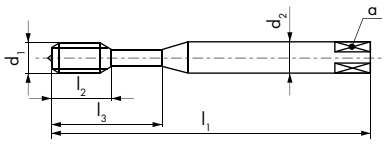
DIN 374

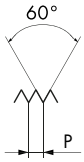
QTAP

Q360VS-3	R40	VS		
Q460VS-3	R40	VS		
Q363VS-3	R40		VS	
Q463VS-3	R40		VS	

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q360VS-3	Q460VS-3	Q363VS-3	Q463VS-3
NEW	NEW	NEW	NEW





C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
4	0.5	63	7.5	21	4.5	3.4	3	3.5	● 197670		● 197693	
5	0.5	70	9	25	6	4.9	3	4.5	● 197671		● 197694	
6	0.75	80	11	30	6	4.9	3	5.25	● 197672		● 197695	
8	1	90	12.5	35	8	6.2	3	7	● 197673		● 197696	
10	1	100	14	39	10	8	3	9	● 197674		● 197697	
12	1	100	14		9	7	3	11		● 197675		● 197698
12	1.5	100	14		9	7	3	10.5		● 197676		● 197699
14	1.5	100	14		11	9	3	12.5		● 197677		● 197700
16	1.5	100	14		12	9	4	14.5		● 197678		● 197701
18	1.5	110	18		14	11	4	16.5		● 197679		● 197702
20	1.5	125	20		16	12	4	18.5		● 197680		● 197703
22	1.5	125	20		18	14.5	4	20.5		● 197681		● 197704
24	1.5	140	22		18	14.5	4	22.5		● 197682		● 197705
24	2	140	22		18	14.5	4	22		● 197683		● 197706

MF ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

	RTS320VS-4	RTS420VS-4	RTS362VS-3	RTS462VS-3
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX

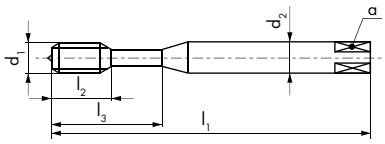
RTS320VS-4 — VS

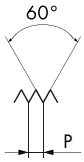
RTS420VS-4 — VS

RTS362VS-3 — R40 — VS

RTS462VS-3 — R40 — VS

11 12 13 14 / 15 21 31 32 / 51 61 63 64 / 72 73 74 81 / 82 83 91 92 / 94





Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
8	1	90	12.5	35	8	6.2	3	7	● 150615	
10	1	100	14	39	10	8	3	9	● 150630	
12	1.5	110	14		* 10	* 8	3	10.5		● 150640
14	1.5	110	14		* 12	* 9	3	12.5		● 150655
16	1.5	110	18		12	9	3	14.5		● 150665

* Norme DC / * DC Norm/ * Norma DC

Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
8	1	90	12.5	35	8	6.2	3	7	● 150617	
10	1	100	14	39	10	8	3	9	● 150632	
12	1.5	110	14		* 10	* 8	3	10.5		● 151862
14	1.5	110	14		* 12	* 9	3	12.5		● 151869
16	1.5	110	18		12	9	3	14.5		● 151871

* Norme DC / * DC Norm/ * Norma DC

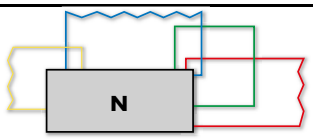
sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

MF ISO DIN 13

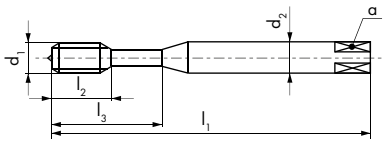
≤ Ø 2.8 > Ø 2.8

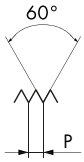
PM | HSS

~ISO 529



	N1110-1	N1110-3	N1110-S
		ISO 2 6H	ISO 2 6H





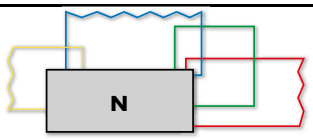
Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N1110-1 ID	N1110-3 ID	N1110-S ID
2	0.25	45	8		2.8	2.1	3	1.75		● 102933	
2.2	0.25	45	9.5		2.8	2.1	3	1.95		● 102936	
2.5	0.35	45	9.5		2.8	2.1	3	2.15		● 102940	
3	0.35	48	11	18	3.15	2.5	3	2.65		● 102945	
3.5	0.35	50	13	20	3.55	2.8	3	3.15		● 102949	
4	0.35	53	13	21	4	3.15	3	3.65		● 102952	
4	0.5	53	13	21	4	3.15	3	3.5	● 102773	● 102953	● 111040
4.5	0.5	53	13	21	4.5	3.55	3	4		● 102958	
5	0.35	58	16	25	5	4	3	4.65		● 102960	
5	0.5	58	16	25	5	4	3	4.5	● 102778	● 102961	● 111045
5	0.75	58	16	25	5	4	3	4.25		● 102963	
5.5	0.5	62	17	26	5.6	4.5	3	5		● 102967	
6	0.5	66	19	30	6.3	5	3	5.5	● 102783	● 102969	● 111050
6	0.75	66	19	30	6.3	5	3	5.25	● 102784	● 102971	● 111051
7	0.5	66	19	30	7.1	5.6	3	6.5		● 102975	
8	0.75	72	22	35	8	6.3	3	7.25	● 102790	● 102982	● 111057
8	1	72	22	35	8	6.3	3	7	● 102791	● 102984	● 111058
9	0.5	72	22	36	9	7.1	3	8.5		● 102988	
9	0.75	72	22	36	9	7.1	3	8.25		● 102989	
9	1	72	22	36	9	7.1	3	8		● 102990	
10	0.5	80	24	39	10	8	3	9.5		● 102925	
10	1	80	24	39	10	8	3	9	● 102756	● 102928	● 111024
10	1.25	80	24	39	10	8	3	8.8	● 102758	● 102930	● 111025

P 0.25 ISO 1 4H

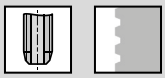
MF ISO DIN 13

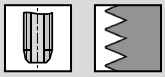
HSS

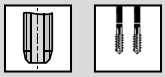
~ISO 529

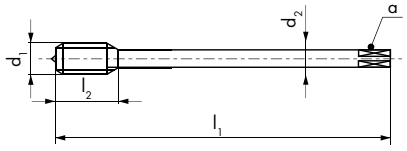


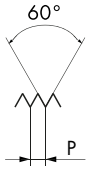
	N1210-1	N1210-3	N1210-S
		< 1.5 x D	< 2.5 x D
	5 x P	C 2 x P	
		ISO 2 6H	ISO 2 6H

N1210-1 

N1210-3  31 62 73 74 91

N1210-S 



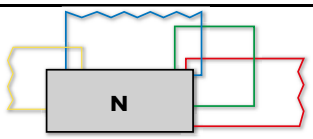


Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
11	0.5	85	22	8	6.3	3	10.5		• 103485	
11	0.75	85	22	8	6.3	3	10.25		• 103486	
11	1	85	22	8	6.3	3	10		• 103487	
11	1.25	85	22	8	6.3	3	9.8		• 103488	
12	0.5	89	24	9	7.1	3	11.5		• 103490	
12	0.75	89	24	9	7.1	3	11.25		• 103491	
12	1	89	24	9	7.1	3	11	• 103305	• 103493	• 111169
12	1.25	89	24	9	7.1	3	10.8	• 103307	• 103495	• 111171
12	1.5	89	24	9	7.1	3	10.5	• 103308	• 103497	• 111172
14	0.5	95	24	11.2	9	3	13.5		• 103502	
14	0.75	95	24	11.2	9	3	13.25		• 103503	
14	1	95	24	11.2	9	3	13	• 103312	• 103504	• 111175
14	1.25	95	24	11.2	9	3	12.8	• 103314	• 103506	• 111177
14	1.5	95	24	11.2	9	3	12.5	• 103315	• 103508	• 111178
15	0.75	90	23	11.2	9	3	14.25		• 103512	
15	1	90	23	11.2	9	3	14		• 103513	
16	0.5	102	32	12.5	10	4	15.5		• 103515	
16	0.75	102	32	12.5	10	4	15.25		• 103516	
16	1	102	32	12.5	10	4	15	• 103321	• 103517	• 111183
16	1.5	102	32	12.5	10	4	14.5	• 103322	• 103520	• 111184
17	1	95	23	12.5	10	4	16		• 103525	
18	0.75	112	30	14	11.2	4	17.25		• 103527	
18	1	112	30	14	11.2	4	17	• 103326	• 103528	• 111187
18	1.5	112	30	14	11.2	4	16.5	• 103327	• 103531	• 111188
18	2	112	30	14	11.2	3	16		• 103533	
19	1	112	33	14	11.2	4	18		• 103536	

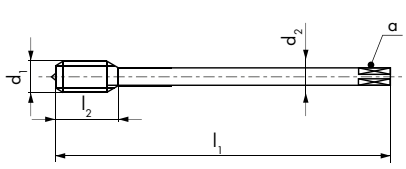
MF ISO DIN 13

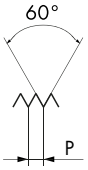
HSS

~ISO 529

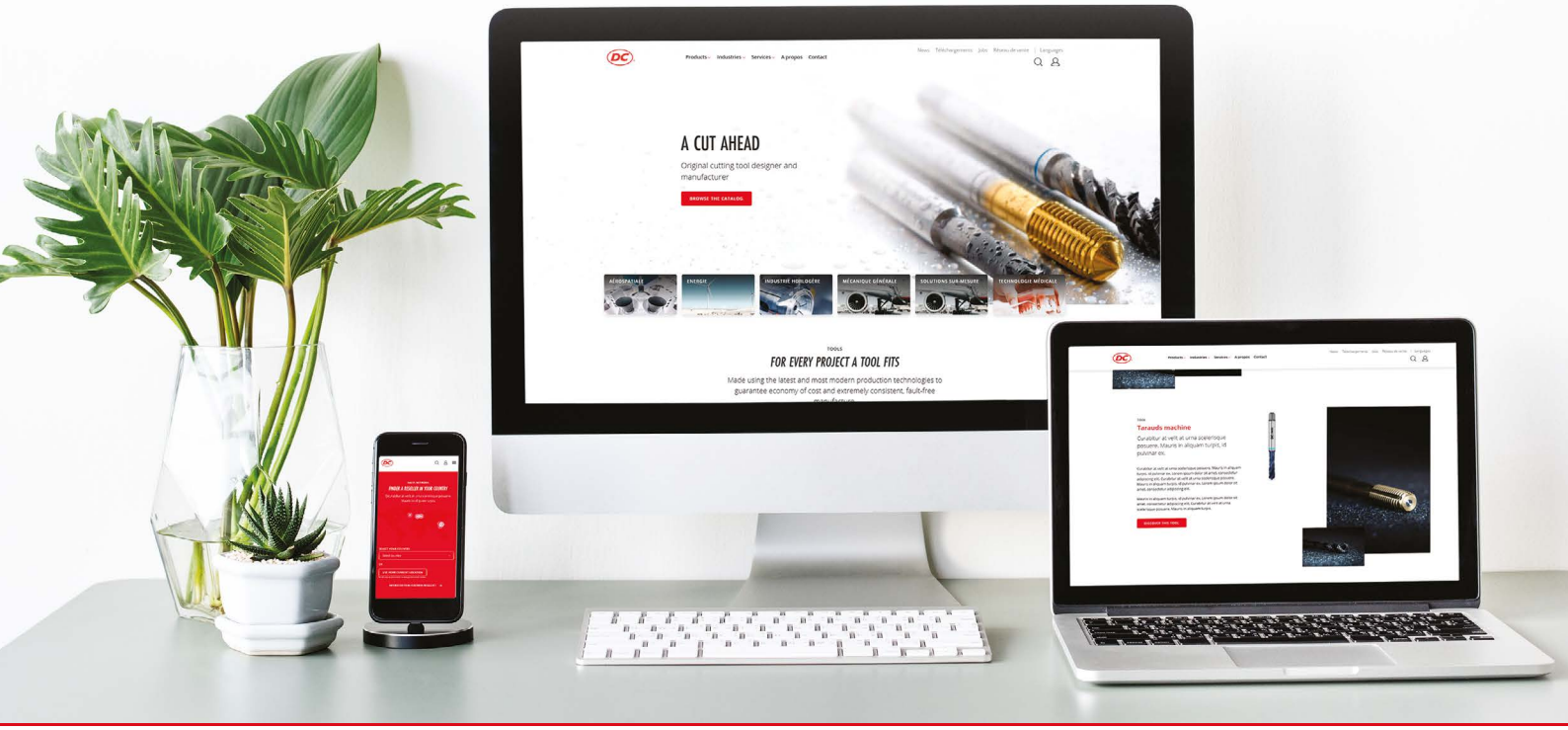


	N1210-1	N1210-3	N1210-S
		< 1.5 x D	< 2.5 x D
	5 x P	C 2 x P	
		ISO 2 6H	ISO 2 6H





Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
20	1	112	37	14	11.2	4	19	● 103332	● 103537	● 111198
20	1.25	112	37	14	11.2	4	18.8		● 103539	
20	1.5	112	37	14	11.2	4	18.5	● 103334	● 103540	● 111195
22	1	115	32	16	12.5	4	21		● 103545	
22	1.5	115	32	16	12.5	4	20.5	● 103340	● 103546	● 121669
22	2	115	32	16	12.5	3	20		● 103548	
24	1	120	30	18	14	4	23		● 103552	
24	1.5	120	30	18	14	4	22.5	● 103343	● 103553	● 111202
24	2	130	45	18	14	4	22	● 103344	● 103555	● 111203
25	1	120	30	18	14	4	24		● 103559	
25	1.5	120	30	18	14	4	23.5		● 103560	
25	2	120	30	18	14	4	23		● 103561	
26	1	120	30	18	14	4	25		● 103562	
26	1.5	120	30	18	14	4	24.5	● 103346	● 103563	● 111207
26	2	120	30	18	14	4	24		● 103564	
27	1	127	30	20	16	4	26		● 103565	
27	1.5	127	30	20	16	4	25.5		● 103566	
27	2	135	45	20	16	4	25	✱ 103351	✱ 103567	✱ 111210
28	1	127	30	20	16	4	27		● 103570	
28	1.5	127	30	20	16	4	26.5		● 103571	
30	1.5	127	32	20	16	4	28.5	● 103355	● 103575	● 111214
30	2	127	32	20	16	4	28	● 103356	● 103577	● 111215



NEUE WEBSITE

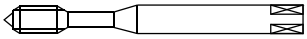
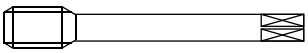
IM AUFBAU — FREIGABE IM SOMMER 2021.

NEW WEBSITE

UNDER CONSTRUCTION — RELEASED IN SUMMER 2021.

UNC

Inhaltsverzeichnis — Maschinengewindebohrer ASME B1.1
Directory — Machine taps ASME B1.1

	N						
Merkmale **Characteristics**			V	TiN	R40	R40 V	R40 TiN
				NEW			NEW
Lochart **Hole type**							
	**N310-3**	**N320-3 N320-4**	**N320V-4**	**N320TN-4**	**N360-3**	**N360V-3**	**N360TN-3**
DIN lang **DIN long** **DIN 371**	154	154	154	154	156	156	156
ISO kurz **ISO short** **ISO 529**							
Toleranz **Tolerance** **UNC 2B**	154	154	154	154	156	156	156
Toleranz **Tolerance** **UNC 3B**							
Toleranz **Tolerance** **UNC(J) 3B**		154			156		
	**N410-3**	**N420-4**	**N420V-4**	**N420TN-4**	**N460-3**	**N460V-3**	**N460TN-3**
DIN lang **DIN long** **DIN 376**	155	155	155	155	157	157	157
ISO kurz **ISO short** **ISO 529**							
Toleranz **Tolerance** **UNC 2B**	155	155	155	155	157	157	157
Toleranz **Tolerance** **UNC 3B**							
Toleranz **Tolerance** **UNC(J) 3B**							

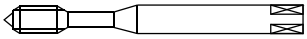
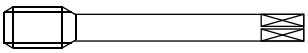
UNC

Inhaltsverzeichnis — Maschinen- und Handgewindebohrer ASME B1.1
Directory — Machine and hand taps ASME B1.1

N	Z				H			
	V	VS	R40 V	R45 VS		TiCN	R25	R25 TiCN
						NEW		NEW
N1110 -1 -2 -3 -S	**Z320V-3 Z320V-4**	**Z320VS-4**	**Z360V-3 Z362V-3**	**Z370VS-3**	**H320-4**	**H320TC-4**	**H350-3**	**H350TC-3**
	158	158	159	160	161	161	162	162
170								
170	158	158	159	160	161	161	162	162
				160				
N1210 -1 -2 -3 -S	**Z420V-4**	**Z420VS-4**	**Z462V-3**	**Z470VS-3**	**H420-4**	**H420TC-4**	**H450-3**	**H450TC-3**
	158	158	159	160	161	161	162	162
171								
171	158	158	159	160	161	161	162	162

UNC

Inhaltsverzeichnis — Maschinengewindebohrer ASME B1.1
Directory — Machine taps ASME B1.1

	S		SA			TL	
Merkmale **Characteristics**	VS	R35 VS		R15	R10	VS	R15 VS
Lochart **Hole type**							
	**S320VS-4**	**S360VS-3**	**SA320-4**	**SA350-3**	**SA390-3**	**TL320VS-4**	**TL351VS-3**
DIN lang **DIN long** **DIN 371**	163	164	165	165	166	165	165
ISO kurz **ISO short** **ISO 529**							
Toleranz **Tolerance** **UNC 2B**	163	164	165	165		165	165
Toleranz **Tolerance** **UNC 3B**							
Toleranz **Tolerance** **UNC(J) 3B**	163		165	165	166	165	165
	**S420VS-4**	**S460VS-3**	**SA420-4**	**SA450-3**			
DIN lang **DIN long** **DIN 376**	163	164	166	166			
ISO kurz **ISO short** **ISO 529**							
Toleranz **Tolerance** **UNC 2B**	163	164	166	166			
Toleranz **Tolerance** **UNC 3B**							
Toleranz **Tolerance** **UNC(J) 3B**							

UNC

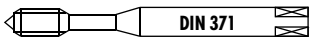
Inhaltsverzeichnis — Maschinengewindebohrer ASME B1.1
Directory — Machine taps ASME B1.1

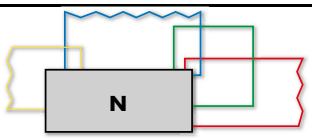
Q				RTS	
VS	VS	R40 VS	R40 VS	VS	R40 VS
NEW	NEW	NEW	NEW		
Q320VS-4	**Q323VS-4**	**Q360VS-3**	**Q363VS-3**	**RTS320VS-4**	**RTS362VS-3**
167	167	168	168	169	169
167	167	168	168	169	169
Q420VS-4	**Q423VS-4**	**Q460VS-3**	**Q463VS-3**	**RTS420VS-4**	**RTS462VS-3**
167	167	168	168	169	169
167	167	168	168	169	169

UNC ASME B1.1

≤ Ø 2.8 > Ø 2.8

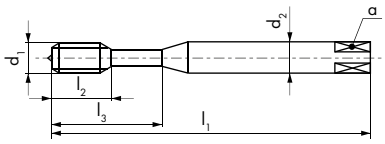
PM | HSSE

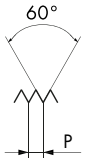




N310-3			31	62	73	74	91
N320-4			62	63	64	72	73	74	81	91
N320V-4		V	11	12	31	32	
N320TN-4		TiN	11	12	13	14	32

N310-3	N320-4	N320V-4	N320TN-4
			NEW
< 1.5 x D			
C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
2B	2B	2B	2B





Ø" d1 UNC	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 mm	a mm			ID	ID	ID	ID
* 2	56	2.18	45	9		2.8	2.1	2	1.75		● 101469	● 143690	
* 3	48	2.51	50	10		2.8	2.1	2	2		● 101470		
4	40	2.84	56	12	18	3.5	2.7	3	2.25	● 101450	● 101511	● 142738	
5	40	3.17	56	12	18	3.5	2.7	3	2.55		● 101512		
6	32	3.5	56	13	20	4	3	3	2.75	● 101451	● 101514	● 144402	● 196003
8	32	4.16	63	14	21	4.5	3.4	3	3.4	● 101452	● 101515	● 142739	● 196004
10	24	4.82	70	15	25	6	4.9	3	3.8	● 101449	● 101508	● 142740	● 196005
12	24	5.48	80	17	30	6	4.9	3	4.4		● 101509		
1/4	20	6.35	80	17	30	7	5.5	3	5.1	● 101448	● 101507	● 142741	● 196006

3B UNC(J)

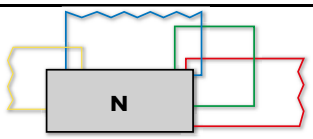
Ø d1 UNC	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 mm	a mm		UNJC	ID
4	40	2.84	56	12	18	3.5	2.7	3	2.3	● 145656
6	32	3.5	56	13	20	4	3	3	2.8	● 155317
8	32	4.16	63	14	21	4.5	3.4	3	3.45	● 155319

*N320-3 / N320V-3 2.5 x P

UNC ASME B1.1

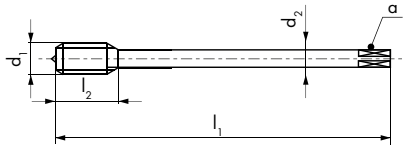
HSSE

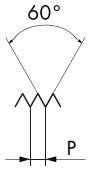
DIN 376



N410-3			31 62 73 74 91
N420-4			62 63 64 72 73 74 81 91
N420V-4		V	11 12 31 32
N420TN-4		TiN	11 12 13 14 32

N410-3	N420-4	N420V-4	N420TN-4
			NEW
< 1.5 x D			
C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
2B	2B	2B	2B



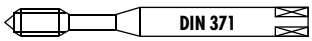


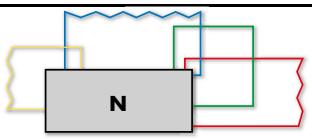
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
5/16	18	7.93	90	20	6	4.9	3	6.5	• 101997	• 102213	• 142742	• 196007
3/8	16	9.52	100	22	7	5.5	3	8	• 101996	• 102212	• 142743	• 158317
7/16	14	11.11	100	19	8	6.2	3	9.3		• 102215	• 142744	• 196008
1/2	13	12.7	110	24	9	7	3	10.8	• 101993	• 102208	• 142745	• 143827
9/16	12	14.28	110	28	11	9	3	12.2		• 102217		
5/8	11	15.87	110	30	12	9	3	13.6	• 101998	• 102214	• 142746	• 146391
3/4	10	19.05	125	33	14	11	3	16.6	• 101995	• 102211	• 142747	• 146054
7/8	9	22.22	140	36	18	14.5	3	19.5		• 102216	• 142748	
1	8	25.4	160	39	18	14.5	4	22.3	• 101994	• 102209	• 142749	
1 1/8	7	28.57	180	45	22	18	4	25		• 102205		
1 1/4	7	31.75	180	45	22	18	4	28.2		• 102204		
1 1/2	6	38.1	200	55	32	24	4	34		• 102203		
1 3/4	5	44.45	220	59	36	29	4	39.5	* 101992	• 102206		
2	4.5	50.8	250	67	40	32	4	45.3		• 102210		

UNC ASME B1.1

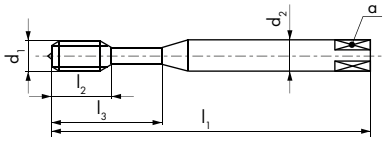
≤ Ø 2.8 > Ø 2.8

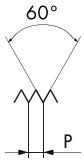
PM | HSSE





	N360-3	N360V-3	N360TN-3	N360-3
			NEW	
	R40	R40 V	R40 TiN	R40
	63 72 73 74 81 91	11 12 32	11 12 13 14 32	63 72 73 74 81 91
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	2B	2B	2B	3B UNC(J)





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	56	2.18	45	8		2.8	2.1	2	1.75	● 101673	● 148887		
3	48	2.51	50	9		2.8	2.1	2	2	● 101674			
4	40	2.84	56	5.5	18	3.5	2.7	3	[1] 2.25	● 101676	● 101725		● 155316
5	40	3.17	56	5.5	18	3.5	2.7	3	2.55	● 101677			
6	32	3.5	56	6.5	20	4	3	3	[2] 2.75	● 101679	● 101727	● 195998	● 155318
8	32	4.16	63	7.5	21	4.5	3.4	3	[3] 3.4	● 101680	● 101728	● 150558	● 155320
10	24	4.82	70	9	25	6	4.9	3	3.8	● 101671	● 101723	● 195999	
12	24	5.48	80	11	30	6	4.9	3	4.4	● 101672			
1/4	20	6.35	80	11	30	7	5.5	3	5.1	● 101670	● 101722	● 196000	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	● 101678	● 101726	● 196001	
3/8	16	9.52	100	14	39	10	8	3	8	● 101675	● 101724	● 164171	

UNJC

[1] 2.3

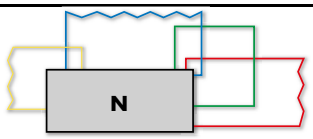
[2] 2.8

[3] 3.45

UNC ASME B1.1

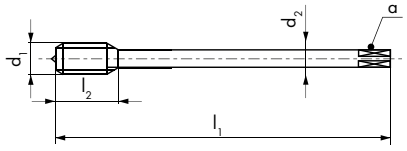
HSSE

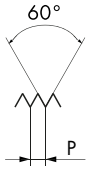
DIN 376



N460-3	R40		63 72 73 74 81 91
N460V-3	R40	V	11 12 32
N460TN-3	R40	TiN	11 12 13 14 32

N460-3	N460V-3	N460TN-3
		NEW
< 2.5 x D	< 2.5 x D	< 2.5 x D



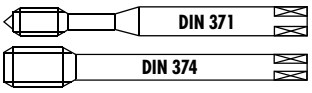


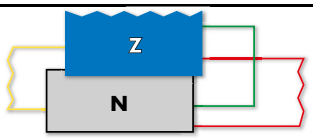
C 2.5 x P	C 2.5 x P	C 2.5 x P	
2B	2B	2B	

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			N460-3 ID	N460V-3 ID	N460TN-3 ID
7/16	14	11.11	100	14	8	6.2	3	9.3	102424	105135	196002
1/2	13	12.7	110	14	9	7	3	10.8	102420	102497	157376
9/16	12	14.28	110	14	11	9	3	12.2	102426	102502	
5/8	11	15.87	110	18	12	9	3	13.6	102423	102500	128252
3/4	10	19.05	125	21	14	11	3	16.6	102422	102499	143519
7/8	9	22.22	140	24	18	14.5	4	19.5	102425	102501	
1	8	25.4	160	27	18	14.5	4	22.3	102421	102498	
1 1/8	7	28.57	180	30	22	18	4	25	102418	102495	
1 1/4	7	31.75	180	30	22	18	4	28.2	102417	102494	
1 1/2	6	38.1	200	40	32	24	5	34	102416	102493	
1 3/4	5	44.45	220	44	36	29	5	39.5		128062	
2	4.5	50.8	250	52	40	32	5	45.3		128084	

UNC ASME B1.1

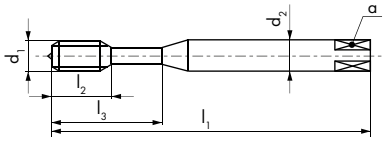
PM

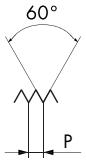




Z320V-4	V	11 12 13 21 32	
Z320VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	
Z420V-4	V	11 12 13 21 32	
Z420VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	

Z320V-4	Z320VS-4	Z420V-4	Z420VS-4





B 4 x P	B 4 x P	B 4 x P	B 4 x P
2B	2B	2B	2B

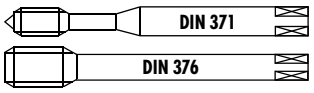
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
* 2	56	2.18	45	9		2.8	2.1	2	1.75	● 142750			
4	40	2.84	56	12	18	3.5	2.7	3	2.25	● 142751			
6	32	3.5	56	13	20	4	3	3	2.75	● 142752	● 111560		
8	32	4.16	63	14	21	4.5	3.4	3	3.4	● 142753	● 111561		
10	24	4.82	70	15	25	6	4.9	3	3.8	● 142754	● 111562		
1/4	20	6.35	80	17	30	7	5.5	3	5.1	● 142755	● 111563		
5/16	18	7.93	90	20	35	8	6.2	3	6.5	● 142756	● 111564		
3/8	16	9.52	100	22	39	10	8	3	8	● 142757	● 111565		
7/16	14	11.11	100	19		8	6.2	3	9.3				● 196028
1/2	13	12.7	110	24		9	7	3	10.8			● 142758	● 111566
5/8	11	15.87	110	30		12	9	3	13.6			● 142759	● 111567
3/4	10	19.05	125	33		14	11	4	16.6			● 142760	● 111568
7/8	9	22.22	140	36		18	14.5	4	19.5			● 142761	
1	8	25.4	160	39		18	14.5	4	22.3			● 142762	

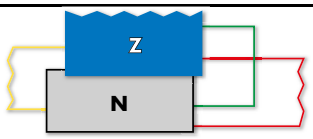
*Z320V-3 2.5 x P

UNC ASME B1.1

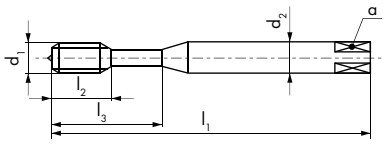
≤ Ø 2.8 > Ø 2.8

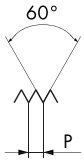
PM | HSSE





	Z362V-3	Z462V-3		
	2B	2B		





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
* 2	56	2.18	45	8		2.8	2.1	2	1.75	● 104695	
* 4	40	2.84	56	5.5	18	3.5	2.7	3	2.25	● 104697	
6	32	3.5	56	6.5	20	4	3	3	2.75	● 104699	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.4	● 104700	
10	24	4.82	70	9	25	6	4.9	3	3.8	● 104694	
1/4	20	6.35	80	11	30	7	5.5	3	5.1	● 104693	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	● 104698	
3/8	16	9.52	100	14	39	10	8	3	8	● 104696	
7/16	14	11.11	100	14		8	6.2	3	9.3		● 104757
1/2	13	12.7	110	14		9	7	3	10.8		● 104753
5/8	11	15.87	110	18		12	9	3	13.6		● 104756
3/4	10	19.05	125	21		14	11	3	16.6		● 104755
7/8	9	22.22	140	24		18	14.5	3	19.5		● 104758
1	8	25.4	160	27		18	14.5	4	22.3		● 104754

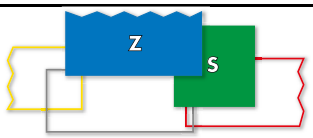
*Z360V-3

UNC ASME B1.1

PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)



Z370VS-3	R45	VS	CLASSIC
Z470VS-3	R45	VS	CLASSIC
Z370VS-3	R45	VS	SYNCHRO
Z470VS-3	R45	VS	SYNCHRO

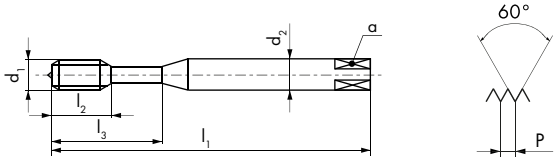
14 15 21 22 23 24 51 61 94

13 14 15 21 22 23 24 51 52

Z370VS-3	Z470VS-3		

< 3 x D

< 3 x D



C 2.5 x P

2BX

C 2.5 x P

2BX

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
6	32	3.5	56	6.5	20	4 (h9)	3	3	2.75	● 166123	
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.4	● 166124	
10	24	4.82	70	9	25	6	4.9	3	3.8	● 166125	
1/4	20	6.35	80	11	30	* 6	* 4.9	3	5.1	● 166126	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	● 166127	
3/8	16	9.52	100	14	39	10	8	3	8	● 166128	
7/16	14	11.11	100	14		8	6.2	3	9.3		● 166129
1/2	13	12.7	110	14		* 10	* 8	4	10.8		● 166130
5/8	11	15.87	110	18		12	9	4	13.6		● 166131
3/4	10	19.05	125	21		14	11	4	16.6		● 166132
1	8	25.4	160	27		16	12	4	22.3		● 175703

* Norme DC / * DC Norm/ * Norma DC

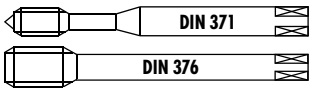
3B UNC(J)

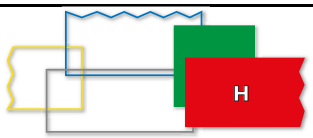
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		UNJC	ID
4	40	2.84	56	5.5	18	3.5(h9)	2.7	3	2.3	● 165114
6	32	3.5	56	6.5	20	4 (h9)	3	3	2.8	● 165115
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.45	● 165116
1/4	20	6.35	80	11	30	* 6	* 4.9	3	5.2	● 165117
5/16	18	7.93	90	12.5	35	8	6.2	3	6.7	● 165118

* Norme DC / * DC Norm/ * Norma DC

UNC ASME B1.1

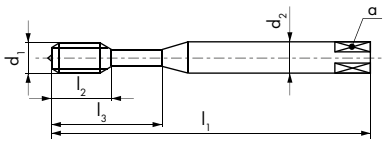
PM

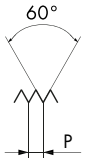




H320-4		15 16 62 64 82			
H420-4		15 16 62 64 82			
H320TC-4	TiCN	15 16 24 31 82 83 92 93			
H420TC-4	TiCN	15 16 24 31 82 83 92 93			

H320-4	H420-4	H320TC-4	H420TC-4
		NEW	NEW
B 4xP 2B	B 4xP 2B	B 4xP 2B	B 4xP 2B

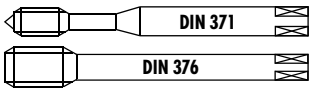


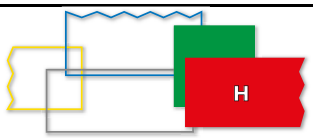


Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	56	2.18	45	8		2.8	2.1	2	1.75	● 101221			
4	40	2.84	56	10	18	3.5	2.7	3	2.25	● 101223			
6	32	3.5	56	13	20	4	3	3	2.75	● 101225		● 196046	
8	32	4.16	63	14	21	4.5	3.4	3	3.4	● 101226		● 196047	
10	24	4.82	70	15	25	6	4.9	3	3.8	● 101220		● 196048	
1/4	20	6.35	80	17	30	7	5.5	3	5.1	● 101219		● 196049	
5/16	18	7.93	90	20	35	8	6.2	3	6.5	● 101224		● 143730	
3/8	16	9.52	100	22	39	10	8	3	8	● 101222		● 196050	
7/16	14	11.11	100	19		8	6.2	3	9.3		● 196051		● 196052
1/2	13	12.7	110	24		9	7	4	10.8		● 101290		● 143731
5/8	11	15.87	110	30		12	9	4	13.6		● 163741		● 196053
3/4	10	19.05	125	33		14	11	4	16.6		● 163743		● 196054

UNC ASME B1.1

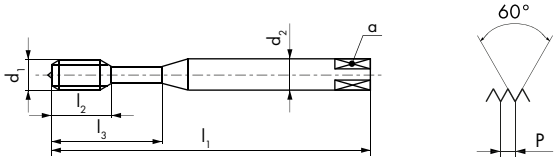
PM





H350-3	R25		15 16 62 64 82	
H450-3	R25		15 16 62 64 82	
H350TC-3	R25	TiCN	15 16 24 31 82 83 92 93	
H450TC-3	R25	TiCN	15 16 24 31 82 83 92 93	

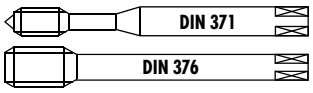
H350-3	H450-3	H350TC-3	H450TC-3
		NEW	NEW
< 1.5 x D	< 1.5 x D	< 1.5 x D	< 1.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
2B	2B	2B	2B

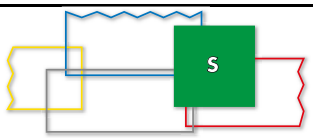


Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	56	2.18	45	8		2.8	2.1	2	1.75	● 101258			
4	40	2.84	56	5.5	18	3.5	2.7	3	2.25	● 101260			
6	32	3.5	56	6.5	20	4	3	3	2.75	● 101262		● 196040	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.4	● 101263		● 196041	
10	24	4.82	70	9	25	6	4.9	3	3.8	● 101257		● 196042	
1/4	20	6.35	80	11	30	7	5.5	3	5.1	● 101256		● 160585	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	● 101261		● 160587	
3/8	16	9.52	100	14	39	10	8	3	8	● 101259		● 162106	
7/16	14	11.11	100	14		8	6.2	3	9.3		● 101330		● 196043
1/2	13	12.7	110	14		9	7	4	10.8		● 101326		● 160586
5/8	11	15.87	110	18		12	9	4	13.6		● 101329		● 196044
3/4	10	19.05	125	21		14	11	4	16.6		● 101328		● 196045
1	8	25.4	160	27		18	14.5	4	22.3		● 101327		

UNC ASME B1.1

PM

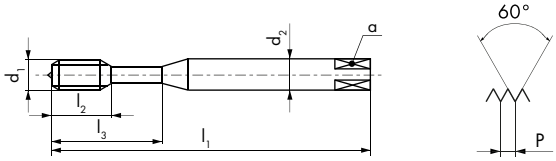




S320VS-4 VS 13 15 16 22 23 24 52

S420VS-4 VS 13 15 16 22 23 24 52

S320VS-4	S420VS-4		



B 4xP — 2B

B 4xP — 2B

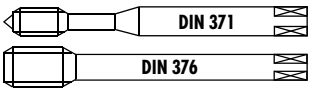
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	32	3.5	56	13	20	4	3	3	2.75	● 111587	
8	32	4.16	63	14	21	4.5	3.4	3	3.4	● 111588	
1/4	20	6.35	80	17	30	7	5.5	3	5.1	● 111590	
5/16	18	7.93	90	20	35	8	6.2	3	6.5	● 111591	
3/8	16	9.52	100	22	39	10	8	3	8	● 111592	
1/2	13	12.7	110	24		9	7	4	10.8		● 111593
5/8	11	15.87	110	30		12	9	4	13.6		● 111594
3/4	10	19.05	125	33		14	11	4	16.6		● 111595

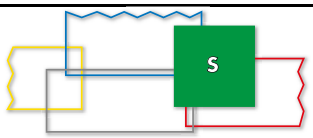
3B UNC(J)

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	40	2.84	56	12	18	3.5	2.7	3	2.3	● 165314
6	32	3.5	56	13	20	4	3	3	2.8	● 165315
8	32	4.16	63	14	21	4.5	3.4	3	3.45	● 165316
1/4	20	6.35	80	17	30	7	5.5	3	5.2	● 165317
5/16	18	7.93	90	20	35	8	6.2	3	6.7	✱ 143761

UNC ASME B1.1

PM

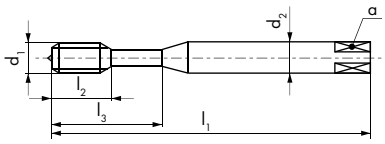


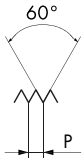


	S360VS-3	S460VS-3		

S360VS-3 — R35 — VS — 13 15 16 22 23 24 52

S460VS-3 — R35 — VS — 13 15 16 22 23 24 52

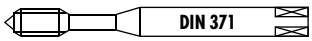




Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			S360VS-3 ID	S460VS-3 ID
6	32	3.5	56	6.5	20	4	3	3	2.75	● 111530	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.4	● 111531	
1/4	20	6.35	80	11	30	7	5.5	3	5.1	● 111533	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	● 111534	
3/8	16	9.52	100	14	39	10	8	3	8	● 111535	
1/2	13	12.7	110	14		9	7	4	10.8		● 111537

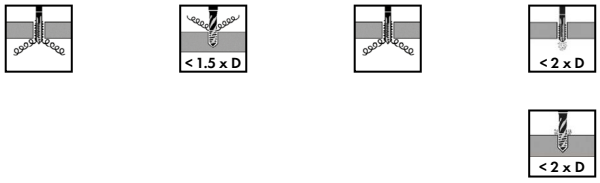
UNC ASME B1.1

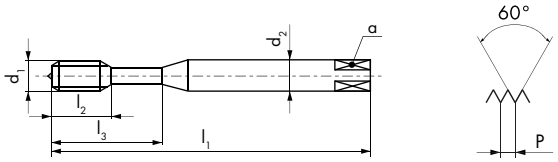
PM



aero

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
	15 16 52 64	15 16 52 64	41 42	41 42
		R15	VS	R15 VS





										SA320-4	SA350-3	TL320VS-4	TL351VS-3
										B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
										2B	2B	2B	2B
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
4	40	2.84	56	12		3.5	2.7	3	2.25	● 147271	● 149003		● 152018
5	40	3.17	56	12		3.5	2.7	3	2.55			✱ 152023	✱ 152024
6	32	3.5	56	13		4	3	3	2.75	● 149055	● 149057	✱ 152027	● 152028
8	32	4.16	63	14		4.5	3.4	3	3.4	● 149093	● 149095		● 152037
10	24	4.82	70	15		6	4.9	3	3.8	● 149125	✱ 149127		
1/4	20	6.35	80	15	23	7	5.5	3	5.1	● 149222	● 149224		● 127972
5/16	18	7.93	90	18	29	8	6.2	3	6.5	● 149269	● 149271		● 152068
3/8	16	9.52	100	20	33	10	8	3	8	● 149346	● 149348	✱ 152084	● 152085

										SA320-4	SA350-3	TL320VS-4	TL351VS-3
										3B UNC(J)	3B UNC(J)	3B UNC(J)	3B UNC(J)
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJC	ID	ID	ID	ID
4	40	2.84	56	12		3.5	2.7	3	2.3	● 149005	● 149007	✱ 148804	● 150194
6	32	3.5	56	13		4	3	3	2.8	● 149059	● 149061	✱ 152029	● 150210
8	32	4.16	63	14		4.5	3.4	3	3.45	● 149097	● 149099		● 152039
10	24	4.82	70	15		6	4.9	3	3.9				✱ 152045
1/4	20	6.35	80	15	23	7	5.5	3	5.2	● 149226	● 149228	✱ 152063	● 152064
5/16	18	7.93	90	18	29	8	6.2	3	6.7	● 149273	● 149275	✱ 152069	● 152070
3/8	16	9.52	100	20	33	10	8	3	8.1	● 149350	● 149352		● 152087

UNC ASME B1.1

PM

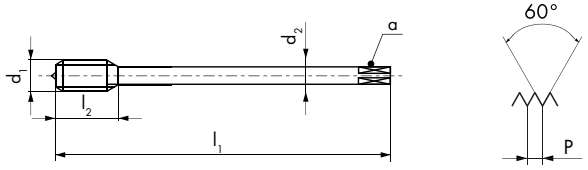
~ DIN 371

DIN 376

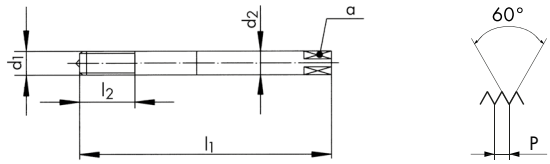
aero

SA420-4		15 16 52 64
SA450-3	R15	15 16 52 64
SA390-3	R10	16 53

SA420-4	SA450-3		SA390-3
	< 1.5 x D		< 1.5 x D
			< 1.5 x D
B 4 x P	C 2.5 x P		C 2.5 x P
2B	2B		



Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1/2	13	12.7	110	24	9	7	4	10.8	● 152247	● 152252
5/8	11	15.87	110	30	12	9	4	13.6	● 152249	● 152254



3B UNC(J)

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		UNJC	ID
4	40	2.84	56	12	3.5	2.7	3	2.3	● 149652
6	32	3.5	56	13	4	3	3	2.8	● 149666
8	32	4.16	63	14	4.5	3.4	3	3.45	● 149677
10	24	4.82	70	15	6	4.9	3	3.9	● 149685
1/4	20	6.35	80	20	7	5.5	3	5.2	● 149713
5/16	18	7.93	90	25	8	6.2	3	6.7	● 149726
3/8	16	9.52	100	30	10	8	3	8.1	● 149747

UNC ASME B1.1

CLASSIC SYNCHRO

PM

DIN 371

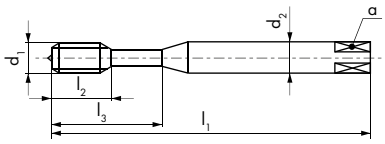
DIN 376

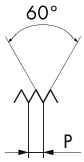
QTAP

Q320VS-4		VS		
Q420VS-4		VS		
Q323VS-4			VS	
Q423VS-4			VS	

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q320VS-4	Q420VS-4	Q323VS-4	Q423VS-4
NEW	NEW	NEW	NEW
B 4xP	B 4xP	B 4xP	B 4xP
2B	2B	2B	2B





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
6	32	3.5	56	13	20	4	3	3	2.75	● 196275		● 196320	
8	32	4.16	63	14	21	4.5	3.4	3	3.4	● 196276		● 196321	
10	24	4.82	70	15	25	6	4.9	3	3.8	● 196277		● 196322	
1/4	20	6.35	80	17	30	7	5.5	3	5.1	● 196278		● 196323	
5/16	18	7.93	90	20	35	8	6.2	3	6.5	● 196279		● 196324	
3/8	16	9.52	100	22	39	10	8	3	8	● 196280		● 196325	
1/2	13	12.7	110	24		9	7	3	10.8		● 196281		● 196326
5/8	11	15.87	110	30		12	9	3	13.6		● 196282		● 196327
3/4	10	19.05	125	33		14	11	4	16.6		● 196283		● 196328
7/8	9	22.22	140	36		18	14.5	4	19.5		● 196284		● 196329
1	8	25.4	160	39		18	14.5	4	22.3		● 196285		● 196330

UNC ASME B1.1

CLASSIC | SYNCHRO

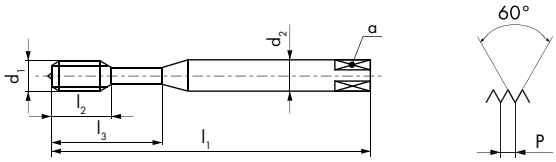
≤ Ø 16 PM | > Ø 16 HSSE

DIN 371 | DIN 376

QTAP

Q360VS-3	R40	VS	
Q460VS-3	R40	VS	
Q363VS-3	R40		VS
Q463VS-3	R40		VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94



Q360VS-3	Q460VS-3	Q363VS-3	Q463VS-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
2B	2B	2B	2B

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Q360VS-3 ID	Q460VS-3 ID	Q363VS-3 ID	Q463VS-3 ID
6	32	3.5	56	6.5	20	4	3	3	2.75	196286		196331	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.4	196287		196332	
10	24	4.82	70	9	25	6	4.9	3	3.8	196288		196333	
1/4	20	6.35	80	11	30	7	5.5	3	5.1	196289		197622	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	196290		197623	
3/8	16	9.52	100	14	39	10	8	3	8	196291		197624	
7/16	14	11.11	100	14		8	6.2	3	9.3		196292		197625
1/2	13	12.7	110	14		9	7	3	10.8		196293		197626
5/8	11	15.87	110	18		12	9	3	13.6		196294		197627
3/4	10	19.05	125	21		14	11	3	16.6		196295		197628
7/8	9	22.22	140	24		18	14.5	3	19.5		196296		197629
1	8	25.4	160	27		18	14.5	4	22.3		196297		197630

UNC ASME B1.1

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

PM

~DIN 371 (d_2 h6)
~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

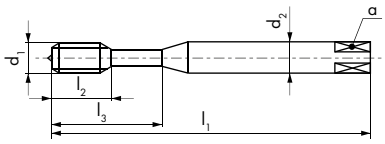
RTS320VS-4		VS													
RTS420VS-4		VS													
RTS362VS-3	R40		VS												
RTS462VS-3	R40		VS												

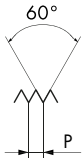
11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94

11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94

RTS320VS-4	RTS420VS-4	RTS362VS-3	RTS462VS-3

		< 2.5 x D	< 2.5 x D
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
2BX	2BX	2BX	2BX





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID	ID
6	32	3.5	56	6.5	20	4 (h9)	3	3	2.75	• 157395		• 157402	
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.4	• 157396		• 157403	
10	24	4.82	70	9	25	6	4.9	3	3.8	• 157397		• 157404	
1/4	20	6.35	80	11	30	* 6	* 4.9	3	5.1	• 157398		• 157405	
5/16	18	7.93	90	12.5	35	8	6.2	3	6.5	• 157399		• 157406	
3/8	16	9.52	100	14	39	10	8	3	8	• 157400		• 157407	
1/2	13	12.7	110	14		* 10	* 8	3	10.8		• 157401		• 157408

* Norme DC / * DC Norm/ * Norma DC

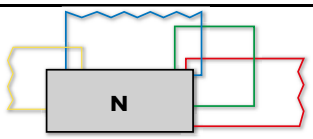
≥ Ø 6 mm
sur demande
auf Anfrage
on request
su richiesta
sobre pedido
no запросу

UNC ASME B1.1

≤ Ø 2.8 > Ø 2.8

PM | HSS

~ISO 529



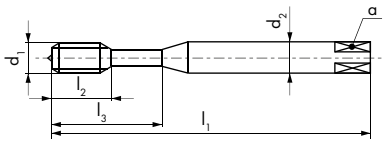
	N1110-1	N1110-2	N1110-3	N1110-S
			2B	2B
ID	● 102799	● 102885	● 102998	● 111067
ID	✱ 102800	✱ 102886	✱ 102999	✱ 111068
ID	● 102802	● 102888	● 103001	● 111070
ID			● 103002	
ID	● 102805	● 102891	● 103004	● 111073
ID	● 102806	● 102892	● 103005	● 111074
ID	● 102797	● 102883	● 102996	● 111065
ID	● 102796	● 102882	● 102995	● 111064
ID	● 102804	● 102890	● 103003	● 111072
ID	● 102801	● 102887	● 103000	● 111069

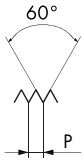
N1110-1

N1110-2

N1110-3 31 62 73 74 91

N1110-S



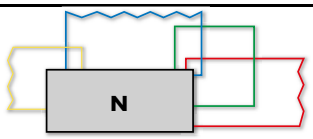


Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
2	56	2.18	45	9.5		2.8	2.1	3	1.75
3	48	2.51	45	9.5		2.8	2.1	3	2
4	40	2.84	48	11	18	3.15	2.5	3	2.25
5	40	3.17	48	11	18	3.15	2.5	3	2.55
6	32	3.5	50	13	20	3.55	2.8	3	2.75
8	32	4.16	53	13	21	4.5	3.55	3	3.4
10	24	4.82	58	16	25	5	4	3	3.8
1/4	20	6.35	66	19	30	6.3	5	3	5.1
5/16	18	7.93	72	22	35	8	6.3	3	6.5
3/8	16	9.52	80	24	39	10	8	3	8

UNC ASME B1.1

HSS

~ISO 529



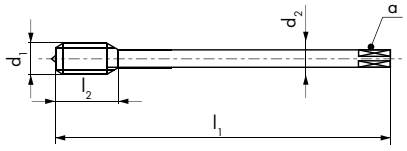
	N1210-1	N1210-2	N1210-3	N1210-S
			2B	2B
ID	● 103392	● 103466	● 103606	● 111236
ID	● 103387	● 103461	● 103601	● 111229
ID	● 103391	● 103465	● 103605	● 111235
ID	● 103390	● 103464	● 103604	● 111234
ID	● 103388	● 103462	● 103602	● 111230

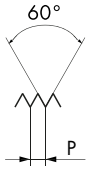
N1210-1

N1210-2

N1210-3 31 62 73 74 91

N1210-S

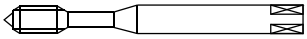
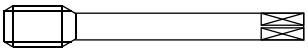




Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		
7/16	14	11.11	85	22	8	6.3	3	9.3
1/2	13	12.7	89	24	9	7.1	3	10.8
5/8	11	15.87	102	32	12.5	10	3	13.6
3/4	10	19.05	112	33	14	11.2	3	16.6
1	8	25.4	130	45	18	14	4	22.3

UNF, UNEF
UNS, UN

Inhaltsverzeichnis — Maschinengewindebohrer ASME B1.1
Directory — Machine taps ASME B1.1

		N						
Merkmale **Characteristics**				V	TiN	R40	R40 V	R40 TiN
					NEW			NEW
Lochart **Hole type**								
		**N310-3**	**N320-3 N320-4**	**N320V-4**	**N320TN-4**	**N360-3**	**N360V-3**	**N360TN-3**
DIN lang **DIN long**	**DIN 371**	176	176	176	176	178	178	178
ISO kurz **ISO short**	**ISO 529**							
Toleranz **Tolerance**	**UNF 2B**	176	176	176	176	178	178	178
Toleranz **Tolerance**	**UNF(J) 3B**		176			178		
Toleranz **Tolerance**	**UNEF 2B**							
Toleranz **Tolerance**	**UNS 2B**							
Toleranz **Tolerance**	**UN 2B**							
		**N410-3**	**N420-4**	**N420V-4**	**N420TN-4**	**N460-3**	**N460V-3**	**N460TN-3**
DIN lang **DIN long**	**DIN 374/~DIN 376**	177 / 199	177	177	177	179 / 199	179 / 199	179
ISO kurz **ISO short**	**ISO 529**							
Toleranz **Tolerance**	**UNF 2B**	177	177	177	177	179	179	179
Toleranz **Tolerance**	**UNF(J) 3B**		177			179		
Toleranz **Tolerance**	**UNEF 2B**							
Toleranz **Tolerance**	**UNS 2B**	199				199	199	
Toleranz **Tolerance**	**UN 2B**					199	199	

UNF, UNEF

Inhaltsverzeichnis — Maschinen- und Handgewindebohrer ASME B1.1
Directory — Machine and hand taps ASME B1.1

N		Z				H		
		V	VS	R40 V	R45 VS		TiCN	R25
			NEW				NEW	
N1110 -1 -3 -S	**N1120-4**	**Z320V-4**	**Z320VS-4**	**Z360V-3**	**Z370VS-3**	**H320-4**	**H320TC-4**	**H350-3**
		180	180	181	182	184	184	185
196 / 198	198							
196		180	180	181	182	184	184	185
					182			
198	198							
N1210 -1 -3 -S	**N1220-4**	**Z420V-4**	**Z420VS-4**	**Z460V-3**	**Z470VS-3**	**H420-4**	**H420TC-4**	**H450-3**
		180	180	181	182	184	184	185
197 / 198	198							
197		180	180	181	182	184	184	185
198	198							

UNF

Inhaltsverzeichnis — Maschinengewindebohrer ASME B1.1
Directory — Machine taps ASME B1.1

	H	S		SA			TL
Merkmale **Characteristics**	R25 TiCN	VS	R35 VS		R15	R10	R15 VS
	NEW						
Lochart **Hole type**							
	H350TC-3	**S320VS-4**	**S360VS-3**	**SA320-4**	**SA350-3**	**SA390-3**	**TL351VS-3**
DIN lang **DIN long** **DIN 371**	185	186	186	188	188	190	188
ISO kurz **ISO short** **ISO 529**							
Toleranz **Tolerance** **UNF 2B**	185			188	188		188
Toleranz **Tolerance** **UNF(J) 3B**		186	186	188	188	190	188
Toleranz **Tolerance** **UNEF 2B**							
Toleranz **Tolerance** **UNS 2B**							
Toleranz **Tolerance** **UN 2B**							
	H450TC-3	**S420VS-4**	**S460VS-3**	**SA420-4**	**SA450-3**		**TL451VS-3**
DIN lang **DIN long** **DIN 374/~DIN 376**	185	186	186	189	189		189
ISO kurz **ISO short** **ISO 529**							
Toleranz **Tolerance** **UNF 2B**	185			189	189		
Toleranz **Tolerance** **UNF(J) 3B**		186	186	189	189		189
Toleranz **Tolerance** **UNEF 2B**							
Toleranz **Tolerance** **UNS 2B**							
Toleranz **Tolerance** **UN 2B**							

UNF

Inhaltsverzeichnis — Maschinengewindebohrer ASME B1.1

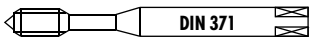
Directory — Machine taps ASME B1.1

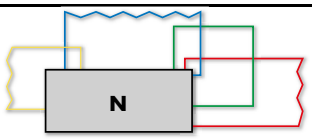
QTAP				RTS	
VS	VS	R40 VS	R40 VS	VS	R40 VS
NEW	NEW	NEW	NEW		
Q320VS-4	**Q323VS-4**	**Q360VS-3**	**Q363VS-3**	**RTS320VS-4**	**RTS362VS-3**
192	192	193	193	194	194
192	192	193	193	194	194
Q420VS-4	**Q423VS-4**	**Q460VS-3**	**Q463VS-3**	**RTS420VS-4**	**RTS462VS-3**
192	192	193	193	194	194
192	192	193	193	194	194

UNF ASME B1.1

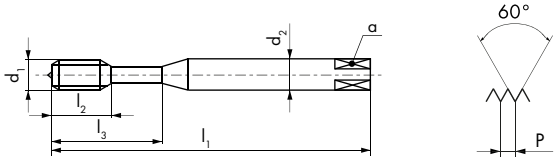
≤ Ø 2.8 > Ø 2.8

PM | HSSE





	N310-3	N320-4	N320V-4	N320TN-4
				NEW
	C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
	2B	2B	2B	2B
Ø" d_1 UNF	ID	ID	ID	ID
* 0		● 101475		
* 2		● 101477		
4		● 128847		
5		● 142764		
6		● 101519	● 142765	
8		● 101520		
10		● 101517	● 142766	● 196014
12		● 101518		
1/4	● 101453	● 101516	● 142767	● 158791



Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
* 0	80	1.52	40	7		2.5	2.1	2	1.2
* 2	64	2.18	45	9		2.8	2.1	2	1.8
4	48	2.84	56	12	18	3.5	2.7	3	2.35
5	44	3.17	56	12	18	3.5	2.7	3	2.6
6	40	3.5	56	13	20	4	3	3	2.9
8	36	4.16	63	14	21	4.5	3.4	3	3.5
10	32	4.82	70	15	25	6	4.9	3	4.05
12	28	5.48	80	17	30	6	4.9	3	4.6
1/4	28	6.35	80	17	30	7	5.5	3	5.5

	3B UNF(J)
Ø" d_1 UNF	ID
10	● 135506
1/4	● 155323

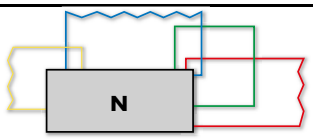
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF
10	32	4.82	70	15	25	6	4.9	3	4.15
1/4	28	6.35	80	17	30	7	5.5	3	5.55

*N320-3 2.5 x P

UNF ASME B1.1

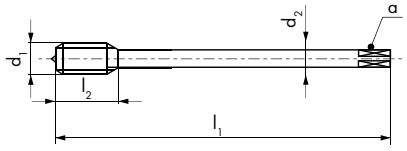
HSSE

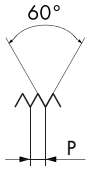
DIN 374



N410-3			31 62 73 74 91
N420-4			62 63 64 72 73 74 81 91
N420V-4		V	11 12 31 32
N420TN-4		TiN	11 12 13 14 32

N410-3	N420-4	N420V-4	N420TN-4
			NEW
< 1.5 x D			





N410-3	N420-4	N420V-4	N420TN-4
C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
2B	2B	2B	2B

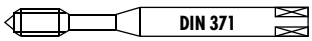
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			N410-3 ID	N420-4 ID	N420V-4 ID	N420TN-4 ID
5/16	24	7.93	90	20	6	4.9	3	6.9	● 102004	● 102223	● 142774	● 196015
3/8	24	9.52	100	22	7	5.5	3	8.5	● 102003	● 102222	● 142775	● 196016
7/16	20	11.11	100	19	8	6.2	3	9.8	● 102006	● 102225	● 142776	● 196017
1/2	20	12.7	100	24	9	7	3	11.4	● 102000	● 102219	● 142777	● 196018
9/16	18	14.28	100	24	11	9	3	12.9		● 102227		
5/8	18	15.87	100	26	12	9	3	14.5	● 102005	● 102224	● 142778	● 196019
3/4	16	19.05	125	33	14	11	4	17.5	● 102002	● 102221	● 142779	● 185919
7/8	14	22.22	140	36	18	14.5	4	20.4		● 102226		
1	12	25.4	160	39	18	14.5	4	23.3		● 102220	● 142780	
1 1/8	12	28.57	180	39	22	18	4	26.5		● 142773		
1 1/4	12	31.75	180	39	22	18	4	29.7		● 102218		
1 3/8	12	34.92	200	36	28	22	4	32.8		● 105137		
1 1/2	12	38.1	200	41	32	24	4	36		● 105138		

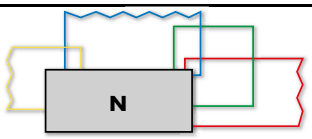
3B UNF(J)

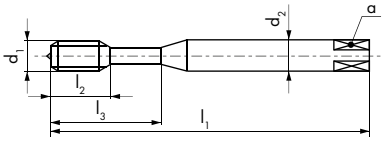
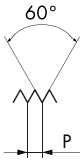
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		UNJF	ID
5/16	24	7.93	90	20	6	4.9	3	7	● 155328
3/8	24	9.52	100	22	7	5.5	3	8.6	● 155326
7/16	20	11.11	100	19	8	6.2	3	10	● 155330
1/2	20	12.7	100	24	9	7	3	11.55	● 155321

UNF ASME B1.1

HSSE





	N360-3	N360V-3	N360TN-3
			NEW
	< 2.5 x D	< 2.5 x D	< 2.5 x D
			C 2.5 x P
			2B
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
6	40	3.5	56	6.5	20	4	3	3	2.9	● 101686		
10	32	4.82	70	9	25	6	4.9	3	4.05	● 101682	● 101730	● 196009
12	28	5.48	80	11	30	6	4.9	3	4.6	● 101683		
1/4	28	6.35	80	11	30	7	5.5	3	5.5	● 101681	● 101729	● 146137
5/16	24	7.93	90	12.5	35	8	6.2	3	6.9	● 101685	● 101732	● 196010
3/8	24	9.52	100	14	39	10	8	3	8.5	● 101684	● 101731	● 196011

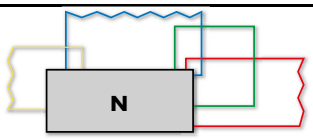
3B UNF(J)

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF	ID
10	32	4.82	70	9	25	6	4.9	3	4.15	● 155325
1/4	28	6.35	80	11	30	7	5.5	3	5.55	● 155324
5/16	24	7.93	90	12.5	35	8	6.2	3	7	● 155329
3/8	24	9.52	100	14	39	10	8	3	8.6	● 155327

UNF ASME B1.1

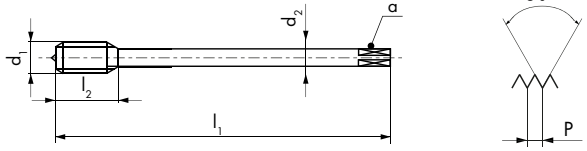
HSSE

DIN 374



N460-3	R40		63 72 73 74 81 91	
N460V-3	R40	V	11 12 32	
N460TN-3	R40	TiN	11 12 13 14 32	

N460-3	N460V-3	N460TN-3
		NEW
< 2.5 x D	< 2.5 x D	< 2.5 x D



C 2.5 x P	C 2.5 x P	C 2.5 x P
2B	2B	2B

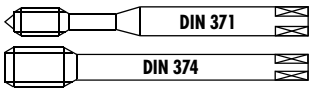
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
7/16	20	11.11	100	14	8	6.2	3	9.8	● 102434	● 142781	● 158885
1/2	20	12.7	100	14	9	7	3	11.4	● 102430	● 102503	● 196012
9/16	18	14.28	100	14	11	9	3	12.9	● 102436	● 143422	
5/8	18	15.87	100	14	12	9	3	14.5	● 102433	● 143097	● 196013
3/4	16	19.05	125	18	14	11	4	17.5	● 102432	● 102505	● 142568
7/8	14	22.22	140	20	18	14.5	4	20.4	● 102435	● 144714	
1	12	25.4	160	27	18	14.5	4	23.3	● 102431	● 102504	
1 1/8	12	28.57	180	24	22	18	4	26.5	● 102429	● 144414	
1 1/4	12	31.75	180	24	22	18	4	29.7	● 102428	● 151709	
1 1/2	12	38.1	200	30	32	24	5	36	● 102427	● 148793	

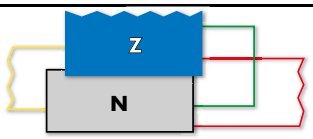
3B UNF(J)

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		UNJF	ID
7/16	20	11.11	100	14	8	6.2	3	10	● 155331
1/2	20	12.7	100	14	9	7	3	11.55	● 155322

UNF ASME B1.1

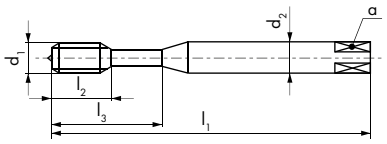
PM

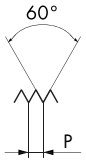




Z320V-4	V	11 12 13 21 32	
Z420V-4	V	11 12 13 21 32	
Z320VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	
Z420VS-4	VS	11 12 13 14 21 22 23 32 61 63 94	

Z320V-4	Z420V-4	Z320VS-4	Z420VS-4
		NEW	NEW
B 4xP 2B	B 4xP 2B	B 4xP 2B	B 4xP 2B





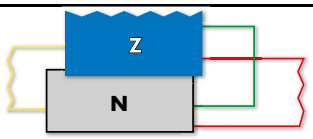
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
10	32	4.82	70	15	25	6	4.9	3	4.05	● 142783		● 128685	
1/4	28	6.35	80	17	30	7	5.5	3	5.5	● 142784		● 128596	
5/16	24	7.93	90	20	35	8	6.2	3	6.9	● 142785		● 128869	
3/8	24	9.52	100	22	39	10	8	3	8.5	● 142786		● 128814	
7/16	20	11.11	100	19		8	6.2	3	9.8		● 142787		● 128960
1/2	20	12.7	100	24		9	7	3	11.4		● 142788		● 128556
5/8	18	15.87	100	26		12	9	3	14.5				● 196031
3/4	16	19.05	125	33		14	11	4	17.5				● 196032

UNF ASME B1.1

HSSE

DIN 371

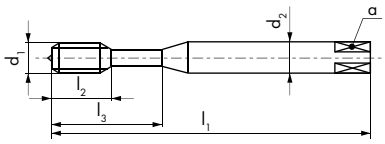
DIN 374

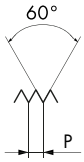


	Z360V-3	Z460V-3		
	2B	2B		

Z360V-3 — R40 — V — 12 / 21 / 32

Z460V-3 — R40 — V — 12 / 21 / 32





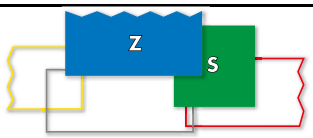
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
10	32	4.82	70	9	25	6	4.9	3	4.05	● 104680	
1/4	28	6.35	80	11	30	7	5.5	3	5.5	● 104679	
5/16	24	7.93	90	12.5	35	8	6.2	3	6.9	● 104682	
3/8	24	9.52	100	14	39	10	8	3	8.5	● 104681	
7/16	20	11.11	100	14		8	6.2	3	9.8		● 104741
1/2	20	12.7	100	14		9	7	3	11.4		● 104738
5/8	18	15.87	100	14		12	9	3	14.5		● 104740
3/4	16	19.05	125	18		14	11	4	17.5		● 104739

UNF ASME B1.1

PM

~DIN 371 (d_2 h6)

~DIN 376 (d_2 h6)

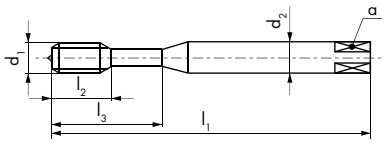


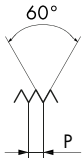
Z370VS-3	R45	VS	CLASSIC
Z470VS-3	R45	VS	CLASSIC
Z370VS-3	R45	VS	SYNCHRO
Z470VS-3	R45	VS	SYNCHRO

14 15 21 22 23 24 51 61 94

13 14 15 21 22 23 24 51 52

Z370VS-3	Z470VS-3		
< 3 x D	< 3 x D		





C 2.5 x P — 2BX

C 2.5 x P — 2BX

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
10	32	4.82	70	9	25	6	4.9	3	4.05	● 166136	
1/4	28	6.35	80	11	30	* 6	* 4.9	3	5.5	● 166135	
5/16	24	7.93	90	12.5	35	8	6.2	3	6.9	● 166134	
3/8	24	9.52	100	14	39	10	8	3	8.5	● 166133	
7/16	20	11.11	100	14		8	6.2	3	9.8		● 166138
1/2	20	12.7	110	14		* 10	* 8	4	11.4		● 166137
5/8	18	15.87	110	18		12	9	4	14.5		● 196029
3/4	16	19.05	125	21		14	11	4	17.5		● 196030

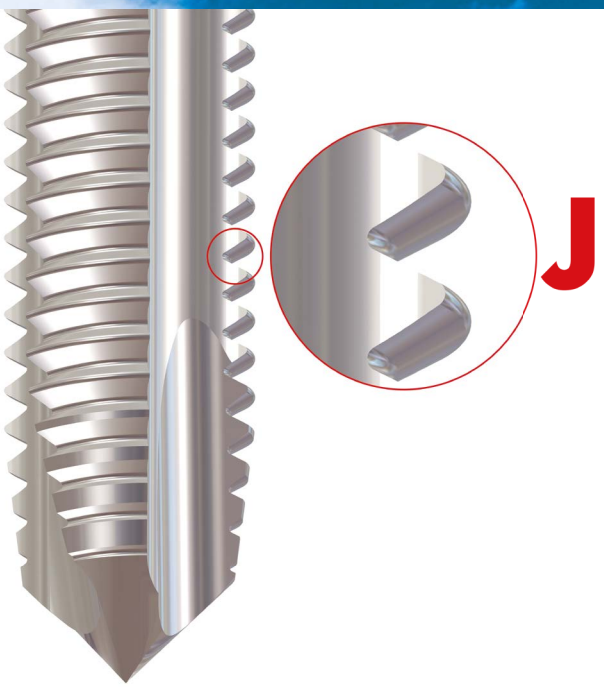
* Norme DC / * DC Norm/ * Norma DC

3B UNF(J)

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		UNJF	ID
10	32	4.82	70	9	25	6	4.9	3	4.15	● 165121
1/4	28	6.35	80	11	30	* 6	* 4.9	3	5.55	● 165122
5/16	24	7.93	90	12.5	35	8	6.2	3	7	● 165123
3/8	24	9.52	100	14	39	10	8	3	8.6	● 165124

* Norme DC / * DC Norm/ * Norma DC

MJ, UNJC, UNJF

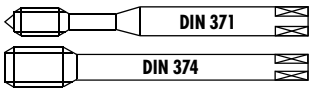


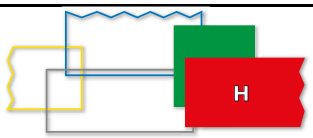
Unsere Maschinen-Gewindebohrer mit Radius auf dem Aussendurchmesser zusammengefasst in einem separaten Kapitel ab Seite 44.

Our machine taps with radius on the outside diameter summarised in a separate chapter from page 44.

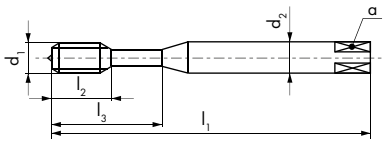
UNF ASME B1.1

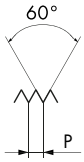
PM

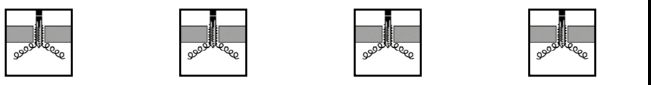




H320-4			15 16 62 64 82	H320-4	H420-4	H320TC-4	H420TC-4
H420-4			15 16 62 64 82			
H320TC-4		TiCN	15 16 24 31 82 83 92 93			NEW
H420TC-4		TiCN	15 16 24 31 82 83 92 93				NEW



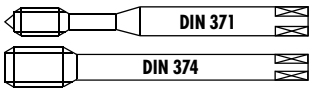


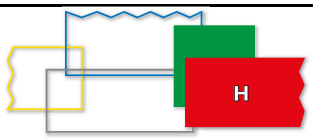


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
10	32	4.82	70	15	25	6	4.9	3	4.05	● 101228		● 196060	
1/4	28	6.35	80	17	30	7	5.5	3	5.5	● 101227		● 142613	
5/16	24	7.93	90	20	35	8	6.2	3	6.9	● 105139		● 196061	
3/8	24	9.52	100	22	39	10	8	3	8.5	● 101229		● 196062	
7/16	20	11.11	100	19		8	6.2	3	9.8		● 147253		● 196063
1/2	20	12.7	100	24		9	7	4	11.4		● 101291		● 196064
5/8	18	15.87	100	26		12	9	4	14.5		● 101293		● 196065
3/4	16	19.05	125	33		14	11	4	17.5		● 101292		● 196066

UNF ASME B1.1

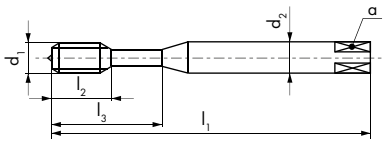
PM

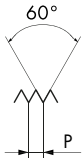




H350-3	R25		15 16 62 64 82		
H450-3	R25		15 16 62 64 82		
H350TC-3	R25	TiCN	15 16 24 31 82 83 92 93		
H450TC-3	R25	TiCN	15 16 24 31 82 83 92 93		

H350-3	H450-3	H350TC-3	H450TC-3
		NEW	NEW
< 1.5 x D	< 1.5 x D	< 1.5 x D	< 1.5 x D
2.5 x P	2.5 x P	2.5 x P	2.5 x P
2B	2B	2B	2B

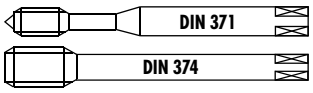


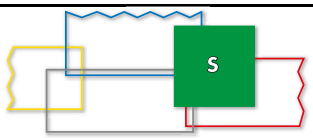


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
10	32	4.82	70	9	25	6	4.9	3	4.05	● 101265		● 196055	
1/4	28	6.35	80	11	30	7	5.5	3	5.5	● 101264		● 146714	
5/16	24	7.93	90	12.5	35	8	6.2	3	6.9	● 101267		● 196056	
3/8	24	9.52	100	14	39	10	8	3	8.5	● 101266		● 196057	
7/16	20	11.11	100	14		8	6.2	3	9.8		● 101334		● 196058
1/2	20	12.7	100	14		9	7	4	11.4		● 101331		● 196059
5/8	18	15.87	100	14		12	9	4	14.5		● 101333		● 174297
3/4	16	19.05	125	18		14	11	4	17.5		● 101332		● 158882

UNF ASME B1.1

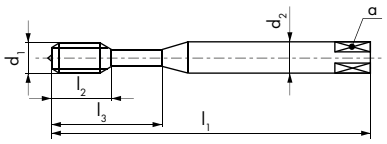
PM

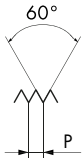




S320VS-4	VS	13 15 16 22 23 24 52	
S420VS-4	VS	13 15 16 22 23 24 52	
S360VS-3	R35 VS	13 15 16 22 23 24 52	
S460VS-3	R35 VS	13 15 16 22 23 24 52	

S320VS-4	S420VS-4	S360VS-3	S460VS-3
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
3B UNF(J)	3B UNF(J)		





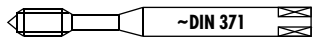
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF	ID	ID
10	32	4.82	70	15	25	6	4.9	3	4.15	● 111814	
1/4	28	6.35	80	17	30	7	5.5	3	5.55	● 111813	
5/16	24	7.93	90	20	35	8	6.2	3	7	● 111816	
3/8	24	9.52	100	22	39	10	8	3	8.6	● 111818	
7/16	20	11.11	100	22		8	6.2	3	10		● 111837

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF	3B UNF(J) ID	3B UNF(J) ID
10	32	4.82	70	9	25	6	4.9	3	4.15	● 111815	
1/4	28	6.35	80	11	30	7	5.5	3	5.55	● 111820	
5/16	24	7.93	90	12.5	35	8	6.2	3	7	● 111817	
3/8	24	9.52	100	14	39	10	8	3	8.6	● 111819	
7/16	20	11.11	100	14		8	6.2	3	10		● 111833

RESPECTING
THREADING

UNF ASME B1.1

PM

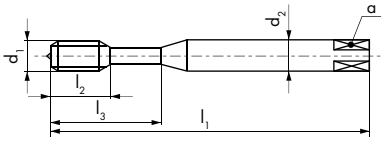


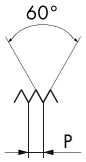
aero

SA320-4		15 16 52 64
SA350-3	R15	15 16 52 64
TL351VS-3	R15 VS	41 42

SA320-4	SA350-3		TL351VS-3

	< 1.5 x D	< 2 x D
		< 2 x D





B 4 x P	C 2.5 x P	C 2.5 x P
2B	2B	2B

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
10	32	4.82	70	15		6	4.9	3	4.05	149133	149135	152047
1/4	28	6.35	80	15	23	7	5.5	3	5.5	149230	149232	152066
5/16	24	7.93	90	18	29	8	6.2	3	6.9	149277	149279	152072
3/8	24	9.52	100	20	33	10	8	3	8.5	149339	149341	152083

3B UNF(J)	3B UNF(J)	3B UNF(J)

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF	ID	ID	ID
4	48	2.84	56	12		3.5	2.7	3	2.35		149015	
10	32	4.82	70	15		6	4.9	3	4.15	146098	149138	148004
1/4	28	6.35	80	15	23	7	5.5	3	5.55	146404	149235	148012
5/16	24	7.93	90	18	29	8	6.2	3	7	146393	149282	148016
3/8	24	9.52	100	20	33	10	8	3	8.6	147165	149344	148023

UNF ASME B1.1

PM

~DIN 374

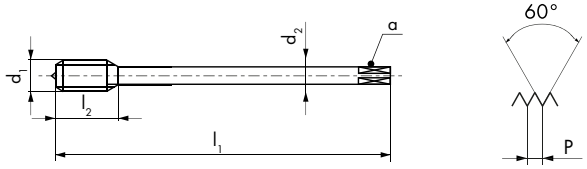
aero

	SA420-4	SA450-3		TL451VS-3

SA420-4 — 15 16 52 64

SA450-3 — R15 — 15 16 52 64

TL451VS-3 — R15 — VS — 41 42



Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			SA420-4 ID	SA450-3 ID	TL451VS-3 ID
									B 4 x P	C 2.5 x P	C 2.5 x P
									2B	2B	
7/16	20	11.11	100	22	8	6.2	* 4	9.8	● 152286	● 152290	
1/2	20	12.7	100	24	9	7	4	11.4	● 152287	● 152291	
5/8	18	15.87	100	26	12	9	4	14.5	★ 152289		

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		UNJF	SA420-4 ID	SA450-3 ID	TL451VS-3 ID
									3B UNF(J)	3B UNF(J)	3B UNF(J)
7/16	20	11.11	100	22	8	6.2	* 4	10	● 147187	● 152302	● 148031
1/2	20	12.7	100	24	9	7	4	11.55	● 147189	● 152303	● 152310
9/16	18	14.28	100	24	11	9	4	13.05	● 146395		
5/8	18	15.87	100	26	12	9	4	14.6	● 147169		

* SA420-4= 3

UNF ASME B1.1

PM

~DIN 371

aero

SA390-3

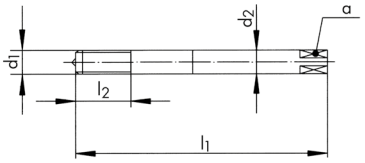
SA390-3

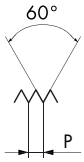
R10

16 53

< 1.5 x D

< 1.5 x D





C
2.5 x P

3B
UNF(J)

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		UNJF	ID
10	32	4.82	70	15	6	4.9	3	4.15	149687
1/4	28	6.35	80	20	7	5.5	3	5.55	149715
5/16	24	7.93	90	25	8	6.2	3	7	149728
3/8	24	9.52	100	30	10	8	3	8.6	149745

QTAP

NEW

DER PERFEKTE "ALLROUNDER"

Lieferbar für M-, MF-, UNC-, UNF- und G-Gewinde

THE PERFECT "ALLROUNDER"

Available for M, MF, UNC, UNF and G threads

UNF ASME B1.1

CLASSIC SYNCHRO

PM

DIN 371

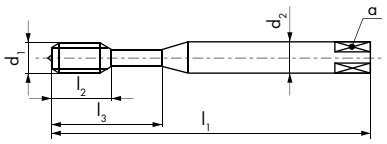
DIN 374

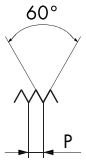
QTAP

Q320VS-4		VS	
Q420VS-4		VS	
Q323VS-4			VS
Q423VS-4			VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94

Q320VS-4	Q420VS-4	Q323VS-4	Q423VS-4
NEW	NEW	NEW	NEW
B 4xP	B 4xP	B 4xP	B 4xP
2B	2B	2B	2B





Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
10	32	4.82	70	15	25	6	4.9	3	4.05	● 196298		● 197631	
1/4	28	6.35	80	17	30	7	5.5	3	5.5	● 196299		● 197632	
5/16	24	7.93	90	20	35	8	6.2	3	6.9	● 196300		● 197633	
3/8	24	9.52	100	22	39	10	8	3	8.5	● 196301		● 197634	
7/16	20	11.11	100	19		8	6.2	3	9.8		● 196302		● 197635
1/2	20	12.7	100	24		9	7	3	11.4		● 196303		● 197636

UNF ASME B1.1

CLASSIC | SYNCHRO

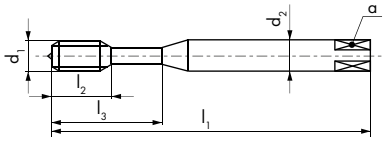
≤ Ø 16 PM | > Ø 16 HSSE

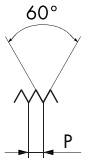
DIN 371 | DIN 374

QTAP

Q360VS-3	R40	VS
Q460VS-3	R40	VS
Q363VS-3	R40	VS
Q463VS-3	R40	VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94





Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Q360VS-3 ID	Q460VS-3 ID	Q363VS-3 ID	Q463VS-3 ID
10	32	4.82	70	9	25	6	4.9	3	4.05	● 196304		● 197637	
1/4	28	6.35	80	11	30	7	5.5	3	5.5	● 196305		● 197638	
5/16	24	7.93	90	12.5	35	8	6.2	3	6.9	● 196306		● 197639	
3/8	24	9.52	100	14	39	10	8	3	8.5	● 196307		● 197640	
7/16	20	11.11	100	14		8	6.2	3	9.8		● 196308		● 197641
1/2	20	12.7	100	14		9	7	3	11.4		● 196309		● 197642
5/8	18	15.87	100	14		12	9	3	14.5		● 196310		● 197643
3/4	16	19.05	125	18		14	11	4	17.5		● 196311		● 197644

< 2.5 x D | < 2.5 x D | < 2.5 x D | < 2.5 x D

C 2.5 x P | C 2.5 x P | C 2.5 x P | C 2.5 x P

2B | 2B | 2B | 2B

UNF ASME B1.1

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Sychronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM

~DIN 371 (d_2 h6)

~DIN 374 (d_2 h6)

RTS
Rigid Tapping Synchro

	RTS320VS-4	RTS420VS-4	RTS362VS-3	RTS462VS-3
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	2BX	2BX	2BX	2BX
	ID	ID	ID	ID
10	● 157409		● 157413	
1/4	● 157410		● 157414	
5/16	● 157411		● 157415	
3/8	● 157412		● 157416	
1/2		● 157417		● 157418

RTS320VS-4 VS

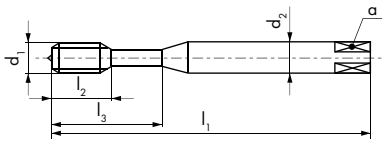
RTS420VS-4 VS

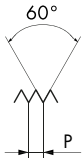
RTS362VS-3 R40 VS

RTS462VS-3 R40 VS

11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94

11 12 13 14 15 21 31 32 51 61 63 64 72 73 74 81 82 83 91 92 94





Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		
10	32	4.82	70	9	25	6	4.9	3	4.05
1/4	28	6.35	80	11	30	* 6	* 4.9	3	5.5
5/16	24	7.93	90	12.5	35	8	6.2	3	6.9
3/8	24	9.52	100	14	39	10	8	3	8.5
1/2	20	12.7	110	14		* 10	* 8	3	11.4

* Norme DC / * DC Norm/ * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

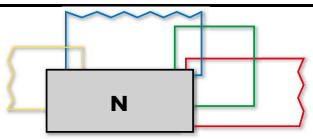
DC
W
IMPROVING
THREADING

UNF ASME B1.1

≤ Ø 2.8 > Ø 2.8

PM | HSS

~ISO 529

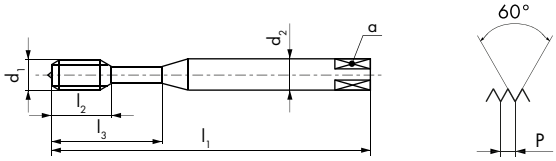


	N1110-1	N1110-3	N1110-S
		2B	2B

N1110-1

N1110-3

N1110-S

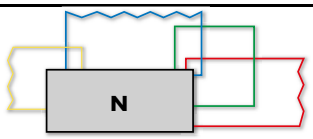


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N1110-1 ID	N1110-3 ID	N1110-S ID
0	80	1.52	40	7		2.5	2.1	3	1.2	● 102811	● 103010	● 111079
1	72	1.85	40	8		2.5	2.1	3	1.5	● 102812	● 103011	● 111080
8	36	4.16	53	13	21	4.5	3.55	3	3.5		* 103022	
10	32	4.82	58	16	25	5	4	3	4.05	● 102814	● 103013	● 111082
12	28	5.48	62	17	26	5.6	4.5	3	4.6		* 103014	
1/4	28	6.35	66	19	30	6.3	5	3	5.5	● 102813	● 103012	● 111081
5/16	24	7.93	72	22	35	8	6.3	3	6.9	● 102821	● 103020	● 111089
3/8	24	9.52	80	24	39	10	8	3	8.5	● 102818	● 103017	● 111086

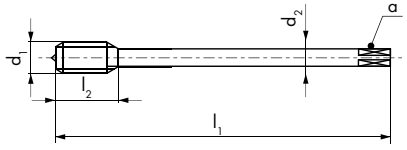
UNF ASME B1.1

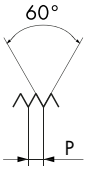
HSS

~ISO 529



	N1210-1	N1210-3	N1210-S
		31 62 73 74 91	
		< 1.5 x D	< 2.5 x D
	5 x P	C 2 x P	
		2B	2B

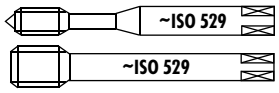


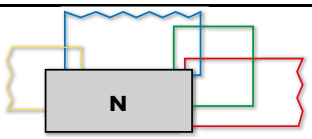


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
7/16	20	11.11	85	22	8	6.3	3	9.8	103411	103626	111255
1/2	20	12.7	89	24	9	7.1	3	11.4	103407	103622	111251
5/8	18	15.87	102	32	12.5	10	3	14.5	103410	103625	111254
3/4	16	19.05	112	33	14	11.2	4	17.5	103409	103624	111253
7/8	14	22.22	115	32	16	12.5	4	20.4	103412	103627	111256
1	12	25.4	130	45	18	14	4	23.3	103408	103623	111252

UNEF ASME B1.1

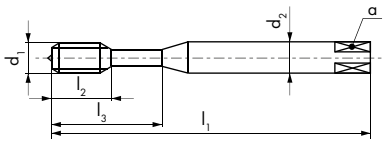
HSS

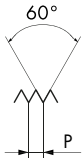




N1110-3		31 62 73 74 91
N1120-4		62 63 64 72 73 74 81 91
N1210-3		31 62 73 74 91
N1220-4		62 63 64 72 73 74 81 91

N1110-3	N1120-4	N1210-3	N1220-4
< 1.5 x D		< 1.5 x D	





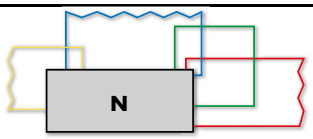
N1110-3	N1120-4	N1210-3	N1220-4
C 2 x P	B 4 x P	C 2 x P	B 4 x P
2B	2B	2B	2B

Ø" d_1 UNEF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N1110-3 ID	N1120-4 ID	N1210-3 ID	N1220-4 ID
12	32	5.48	62	17	26	5.6	4.5	3	4.7	● 103007	● 103118		
1/4	32	6.35	66	19	30	6.3	5	3	5.6	● 103006	● 103117		
5/16	32	7.93	72	22	35	8	6.3	3	7.2	● 103009	● 103120		
3/8	32	9.52	80	24	39	10	8	3	8.75	● 103008	● 103119		
7/16	28	11.11	85	22		8	6.3	3	10.25			● 103615	● 103754
1/2	28	12.7	89	24		9	7.1	3	11.85			● 103609	● 103749
9/16	24	14.28	95	24		11.2	9	3	13.2			● 103617	● 103756
5/8	24	15.87	102	32		12.5	10	3	14.8			● 103614	● 103753
11/16	24	17.46	104	26		14	11.2	4	16.4			● 103611	
3/4	20	19.05	112	33		14	11.2	4	17.8			● 103613	
7/8	20	22.22	115	32		16	12.5	4	21			● 103616	
1	20	25.4	120	30		18	14	4	24.1			● 103610	

UNS, UN ASME B1.1

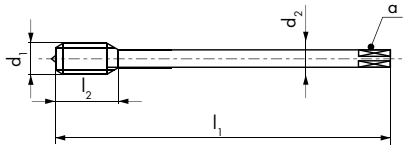
HSSE

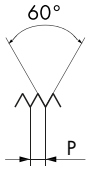
DIN 374



N410-3			31	62	73	74	91
N460-3	R40		63	72	73	74	81	91
N460V-3	R40	V	11	12	32			

N410-3	N460-3	N460V-3
2B	2B	2B

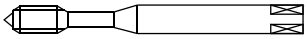
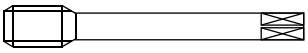




Ø" d_1 UNS	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
1/4	36	6.35	80	17	4.5	3.4	3	5.65	● 104899		
1/2	24	12.7	100	24	9	7	3	11.6	● 104900		
1	14	25.4	140	34	18	14.5	4	23.6	● 104898		
1	14	25.4	140	22	18	14.5	4	23.6		● 102437	● 142789

Ø" d_1 UN	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1 1/8	8	28.57	180	30	22	18	4	25.5	● 102415	● 142790
1 1/4	8	31.75	180	30	22	18	4	28.7	● 102414	● 142520
1 3/8	8	34.92	200	36	28	22	5	31.8	● 104896	● 142792
1 1/2	8	38.1	200	40	32	24	5	35	● 102413	● 142793
1 3/4	8	44.45	220	44	36	29	5	41.4		● 115198
2	8	50.8	250	38	40	32	5	47.7		● 111622

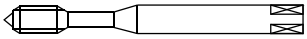
G *Inhaltsverzeichnis — Maschinengewindebohrer G (Rohr) DIN EN ISO 228*
Directory — Machine taps G (BSP) DIN EN ISO 228

	N						
Merkmale **Characteristics**		V	TiN	R40	R40 V	R40 TiN	R40 V
Lochart **Hole type**							
							
	**N410-3**	**N420-4 N420V-4**	**N420TN-4**	**N460-3**	**N460V-3**	**N460TN-3**	**N462V-3**
DIN lang **DIN long** **DIN 5156**	204	205	205	206	206	206	206
DIN lang **DIN long** **~ DIN 376**							
DIN kurz **DIN short** **DIN 5157**							
LH Linksgewinde **LH Left-hand thread** **DIN 5156**	204						

G *Inhaltsverzeichnis — Maschinen- und Handgewindebohrer G (Rohr) DIN EN ISO 228*
Directory — Machine and hand taps G (BSP) DIN EN ISO 228

N			W		Z			
			R40 E 1.5xP	R40 E 1.5xP DLC	V	VS	R40 V	R45 VS
N210-1	**N210-3**	**N210-S**	**W460-5**	**W460DL-5**	**Z420V-4**	**Z420VS-4**	**Z460V-3**	**Z470VS-3**
			207	207	208	208	208	
								209
213	213	213						

G *Inhaltsverzeichnis — Maschinengewindebohrer G (Rohr) DIN EN ISO 228*
Directory — Machine taps G (BSP) DIN EN ISO 228

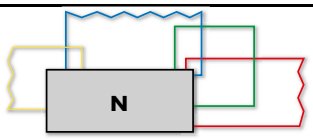
	H	GG	QTAP		RTS	
Merkmale **Characteristics**	R25	R15 NV	VS	R40 VS	R40 VS	R40 E 1.5 x P VS
			NEW NEW	NEW NEW		
Lochart **Hole type**						
						
	H450-3	**GG450NV-3**	**Q420VS-4 Q423VS-4**	**Q460VS-3 Q463VS-3**	**RTS462VS-3**	**RTS462VS-5**
DIN lang **DIN long** **DIN 5156**	207	207	210	211		
DIN lang **DIN long** **~ DIN 376**					212	212
DIN kurz **DIN short** **DIN 5157**						
LH Linksgewinde **LH Left-hand thread** **DIN 5156**						

	N					
Merkmale **Characteristics**		1:16	1:16			HSS 1.75 x P ≥ Ø 3
Lochart **Hole type**						
				N1110-3	**N1120-4**	
ISO kurz **ISO short**	**ISO 529**			216 - 217	216	
W	**ISO 529**			216 - 217	216	
SV	**ISO 529**			217		
	N420-3	**N410-3**	**D5800**	**N1210-3**	**N1220-4**	**N5120**
DIN lang **DIN long**	**DIN 5156**	214					
DIN lang **DIN long**	**DC**		214	215			
ISO kurz **ISO short**	**ISO 529**				216 - 217	216	
Rp	**DIN 5156**	214					
Rc	**DC**		214	215			
W	**ISO 529**				216	216	
SV	**ISO 529 / DC**				217		217

G DIN EN ISO 228 (BSP)

HSSE

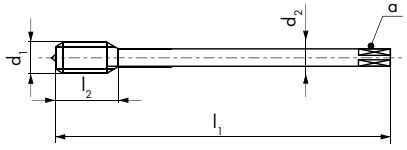
DIN 5156

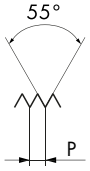


	N410-3	N410-3 LH		

N410-3 31 62 73 74 91

N410-3 LH LH 31 62 73 74 91



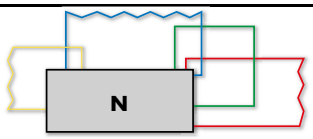


Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			N410-3 ID	N410-3 LH ID
1/8	28	9.72	90	22	7	5.5	3	8.75	101855	
1/4	19	13.15	100	20	11	9	3	11.6	101853	101854
3/8	19	16.66	100	20	12	9	4	15.2	101861	101862
1/2	14	20.95	125	22	16	12	4	18.9	101851	101852
3/4	14	26.44	140	28	20	16	4	24.4	101859	
1	11	33.24	160	32	25	20	4	30.7	101857	
1 1/4	11	41.91	170	32	32	24	5	39.3	101850	
1 1/2	11	47.8	190	32	36	29	5	45.2	101849	

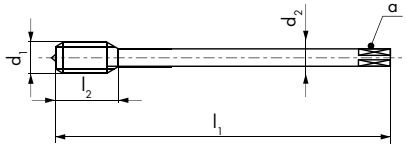
G DIN EN ISO 228 (BSP)

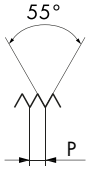
HSSE

DIN 5156



	N420-4	N420V-4	N420TN-4
	62 63 64 72 73 74 81 91	11 12 31 32	11 12 13 14 32



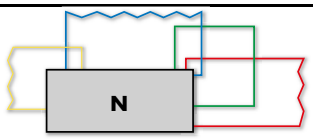


Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			N420-4 ID	N420V-4 ID	N420TN-4 ID
1/16	28	7.72	90	18	6	4.9	3	6.75	102045		
1/8	28	9.72	90	22	7	5.5	3	8.75	102048	102258	102236
1/4	19	13.15	100	20	11	9	3	11.6	102047	102257	102235
3/8	19	16.66	100	20	12	9	3	15.2	102053	102261	102238
1/2	14	20.95	125	22	16	12	4	18.9	102046	102256	102234
5/8	14	22.91	125	25	18	14.5	4	20.9	102054	144722	
3/4	14	26.44	140	28	20	16	4	24.4	102052	102260	102237
1	11	33.24	160	32	25	20	4	30.7	102049	102259	
1 1/4	11	41.91	170	32	32	24	5	39.3	102043		
1 1/2	11	47.8	190	32	36	29	5	45.2	102042		
2	11	59.61	220	36	45	35	5	57	102051		
2 1/2	11	75.18	280	36	50	39	6	72.6	102050		

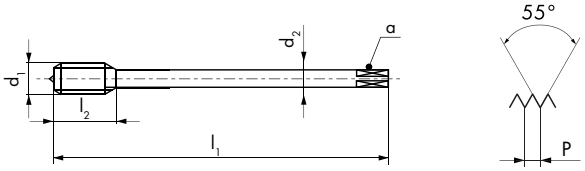
G DIN EN ISO 228 (BSP)

HSSE

DIN 5156



N460-3	R40		63 72 73 74 81 91
N460V-3	R40	V	11 12 32
N460TN-3	R40	TiN	11 12 13 14 32
N462V-3	R40	V	11 12 32

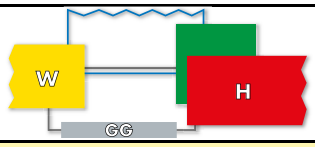


	N460-3	N460V-3	N460TN-3	N462V-3
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P

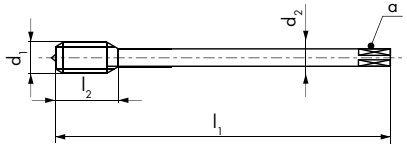
Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1/16	28	7.72	90	12.5	6	4.9	3	6.75	102341			
1/8	28	9.72	90	14	7	5.5	3	8.75	102344	102457	102444	143687
1/4	19	13.15	100	14	11	9	3	11.6	102343	102456	102443	143600
3/8	19	16.66	100	14	12	9	4	15.2	102348	102460	102446	143431
1/2	14	20.95	125	20	16	12	4	18.9	102342	102455	102442	143921
5/8	14	22.91	125	20	18	14.5	4	20.9	102349	143711		
3/4	14	26.44	140	22	20	16	4	24.4	102347	102459	102445	143688
1	11	33.24	160	26	25	20	4	30.7	102345	102458		
1 1/4	11	41.91	170	30	32	24	5	39.3	102340	111608		
1 1/2	11	47.8	190	35	36	29	5	45.2	102339	111609		
2	11	59.61	220	41	45	35	6	57	102346	111503		

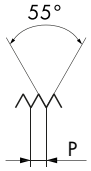
G DIN EN ISO 228 (BSP)

HSSE W | ≤ Ø 25.4 PM H/GG | > Ø 25.4 HSSE H/GG | DIN 5156



	W460-5	W460DL-5	H450-3	GG450NV-3
	R40	R40 DLC	R25	R15 NV
	71 72 81	71 72 73	15 16 62 64 82	31
	< 2.5 x D	< 2.5 x D	< 1.5 x D	< 2.5 x D
	E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P





Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
1/8	28	9.72	90	14	7	5.5	3	8.75	● 119350	● 176728	● 101298
1/4	19	13.15	100	14	11	9	* 4	11.6	● 119300	● 176729	● 101297
3/8	19	16.66	100	14	12	9	4	15.2	● 119682	● 176730	● 101301
1/2	14	20.95	125	20	16	12	4	18.9	● 119199	● 176731	● 101296
3/4	14	26.44	140	22	20	16	4	24.4			● 101300
1	11	33.24	160	26	25	20	4	30.7			● 101299

* W460-5 = 3
* W460DL-5 =

Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
1/8	28	9.72	90	22	7	5.5	4	8.75	● 102309
1/4	19	13.15	100	20	11	9	4	11.6	● 102308
3/8	19	16.66	100	20	12	9	4	15.2	● 102312
1/2	14	20.95	125	22	16	12	4	18.9	● 102307
3/4	14	26.44	140	28	20	16	4	24.4	● 102311
1	11	33.24	160	32	25	20	4	30.7	● 102310

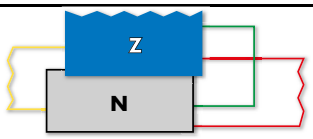
G

DIN EN ISO 228 (BSP)

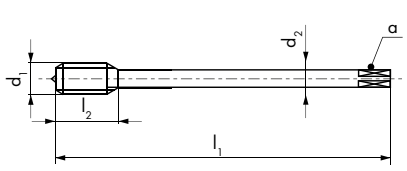
< Ø 25.4 > Ø 25.4

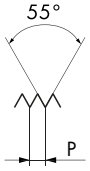
PM	HSSE	HSSE
Z420	Z420	Z460

DIN 5156



	Z420V-4	Z420VS-4	Z460V-3
Tolerance	6H	6H	6H
Coating	Bright	Bright	Bright
Material	HSSE	HSSE	HSSE
Standard	DIN 5156	DIN 5156	DIN 5156
Application	Through holes	Through holes	Through holes
Thread	Right hand	Right hand	Right hand
Cut	Spiral point	Spiral point	Spiral point
Shape	Form V	Form VS	Form V
Shank	R40		R40
	11 12 13 21 32	11 12 13 14 21 22 23 32 61 63 94	12 21 32





Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1/8	28	9.72	90	22	7	5.5	3	8.75	● 142794	● 142800
1/4	19	13.15	100	20	11	9	3	11.6	● 142795	● 119303
3/8	19	16.66	100	20	12	9	3	15.2	● 142796	● 142802
1/2	14	20.95	125	22	16	12	4	18.9	● 142797	● 142803
3/4	14	26.44	140	28	20	16	4	24.4	● 142798	
1	11	33.24	160	32	25	20	4	30.7	● 142799	

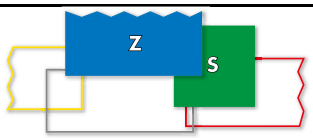
Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
1/8	28	9.72	90	14	7	5.5	3	8.75	● 104726
1/4	19	13.15	100	14	11	9	3	11.6	● 104725
3/8	19	16.66	100	14	12	9	4	15.2	● 104728
1/2	14	20.95	125	20	16	12	4	18.9	● 104724
3/4	14	26.44	140	22	20	16	4	24.4	● 104727
1	11	33.24	160	26	25	20	4	30.7	● 105142

G

DIN EN ISO 228 (BSP)

PM

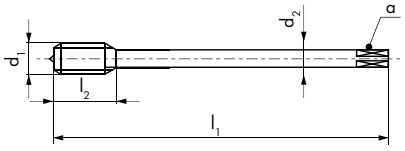
~DIN 376 (d_2 h6)

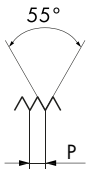


Z470VS-3 R45 VS CLASSIC — 14 15 21 22 23 24 51 61 94

Z470VS-3 R45 VS SYNCHRO — 13 14 15 21 22 23 24 51 52

Z470VS-3			





Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID
1/8	28	9.72	100	14	* 8	* 6.2	3	8.75	● 165198
1/4	19	13.15	110	14	* 12	* 9	4	11.6	● 165199
3/8	19	16.66	110	18	12	9	4	15.2	● 165200
1/2	14	20.95	125	20	16	12	4	18.9	● 165201

* Norme DC / * DC Norm/ * Norma DC

G DIN EN ISO 228 (BSP)

CLASSIC SYNCHRO

PM

DIN 5156

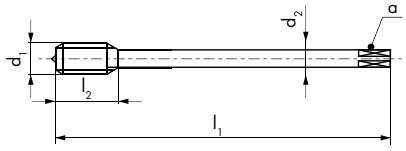
QTAP

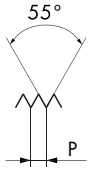
	Q420VS-4	Q423VS-4		
	NEW	NEW		
	B 4xP	B 4xP		

Q420VS-4 VS

Q423VS-4 VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94





Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1/8	28	9.72	90	22	7	5.5	3	8.75	● 196312	● 197645
1/4	19	13.15	100	20	11	9	3	11.6	● 196313	● 197646
3/8	19	16.66	100	20	12	9	3	15.2	● 196314	● 197647
1/2	14	20.95	125	22	16	12	4	18.9	● 196315	● 197648

G

DIN EN ISO 228 (BSP)

CLASSIC | SYNCHRO

≤ Ø 16 | > Ø 16

PM | HSSE

DIN 5156

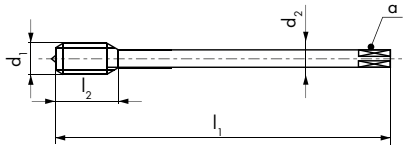
QTAP

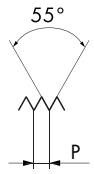
	Q460VS-3	Q463VS-3		
	NEW	NEW		
	<2.5 x D	<2.5 x D		
	C 2.5 x P	C 2.5 x P		

Q460VS-3 — R40 — VS

Q463VS-3 — R40 — VS

11 12 13 14
15 21 22 23
24 31 32 51
52 61 62 63
64 71 72 73
74 81 82 83
91 92 94





Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1/8	28	9.72	90	14	7	5.5	3	8.75	● 196316	● 197649
1/4	19	13.15	100	14	11	9	3	11.6	● 196317	● 197650
3/8	19	16.66	100	14	12	9	4	15.2	● 196318	● 197651
1/2	14	20.95	125	20	16	12	4	18.9	● 196319	● 197652

G DIN EN ISO 228 (BSP)

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Synchronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado / Только для ridgid tapping

PM

~DIN 376 (d_2 h6)

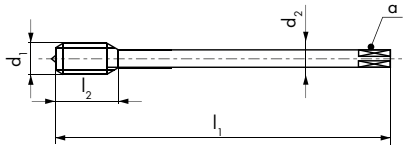
RTS
Rigid Tapping Synchro

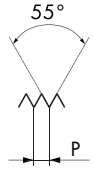
RTS462VS-3	RTS462VS-5		

RTS462VS-3 — R40 — VS

RTS462VS-5 — R40 — VS

11 12 13 14
15 21 31 32
51 61 63 64
72 73 74 81
82 83 91 92
94





Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID	ID
1/8	28	9.72	100	14	* 8	* 6.2	3	8.75	● 151861	● 170629
1/4	19	13.15	110	14	* 12	* 9	3	11.6	● 151868	● 170631
3/8	19	16.66	110	18	12	9	4	15.2	● 151872	● 170633
1/2	14	20.95	125	20	16	12	4	18.9	● 150685	● 170635

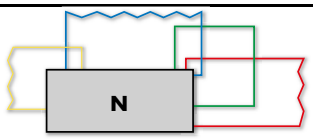
* Norme DC / * DC Norm/ * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido / по запросу

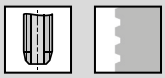
G DIN EN ISO 228 (BSP)

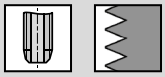
HSSE

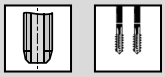
DIN 5157

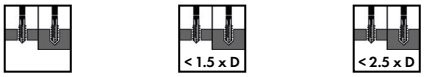


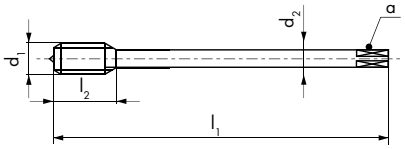
N210-1	N210-3	N210-S	

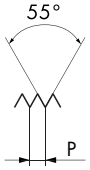
N210-1 

N210-3  31 62 73 74 91

N210-S 







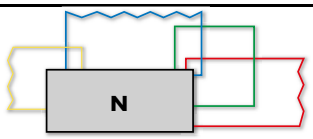
Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
1/16	28	7.72	63	18	6	4.9	3	6.75		● 101418	
1/8	28	9.72	63	22	7	5.5	3	8.75	● 101404	● 101421	● 119386
1/4	19	13.15	70	20	11	9	3	11.6	● 101403	● 101420	● 119336
3/8	19	16.66	70	20	12	9	4	15.2	● 101409	● 101427	● 110938
1/2	14	20.95	80	22	16	12	4	18.9	● 101402	● 101419	● 119264
5/8	14	22.91	80	25	18	14.5	4	20.9	● 101411	● 105140	● 110940
3/4	14	26.44	90	28	20	16	4	24.4	● 101408	● 101426	● 110937
1	11	33.24	100	32	25	20	4	30.7	● 101405	● 101422	● 110933
1 1/8	11	37.89	125	32	28	22	4	35.3		● 101415	
1 1/4	11	41.91	125	32	32	24	5	39.3	● 101400	● 101414	● 111425
1 1/2	11	47.8	140	32	36	29	5	45.2	● 101399	● 101413	● 110934
2	11	59.61	160	36	45	35	5	57	● 101407	● 101425	● 110935
2 1/2	11	75.18	160	36	50	39	6	72.6		● 101423	

Rp, Rc DIN EN 10226

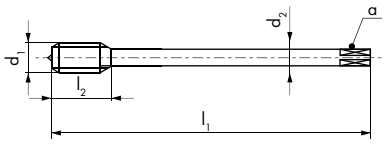
HSSE

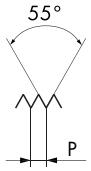
DIN 5156 (Rp)

DC (Rc)



	N420-3			N410-3
N420-3	62 63 64 72 73 74 81 91			
N410-3	31 62 74			1:16
	2.5 x P			C 2 x P





Ø" d_1 Rp	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
1/8	28	9.72	90	22	7	5.5	3	8.6	104911
1/4	19	13.15	100	20	11	9	3	11.5	104912
3/8	19	16.66	100	20	12	9	3	15	104913
1/2	14	20.95	125	22	16	12	4	18.5	104914
3/4	14	26.44	140	28	20	16	4	24	104915
1	11	33.24	160	32	25	20	4	30.25	104916

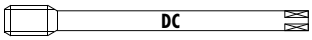
Ø" d_1 Rc	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID
1/8	28	9.72	71	13	8	6.2	5	104917
1/4	19	13.15	80	20	11	9	5	104918
3/8	19	16.66	90	20	12	9	5	104919
1/2	14	20.95	100	26	16	12	5	104920
3/4	14	26.44	110	26	20	16	5	104921
1	11	33.24	125	32	25	20	5	104922

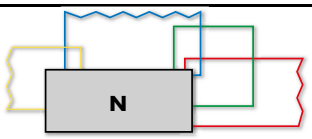
Vc (m/min) Ø d1 - Guide Line

Rc	1/16" - 1/4"	3/8" - 1/2"	3/4" - 1"	1.1/4" - 2"
31 74	10	8	7	5
62	18	15	13	10

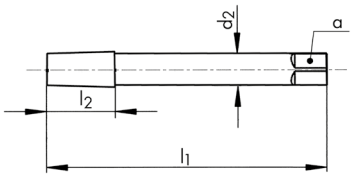
Rc DIN EN 10226

HSSE





D5800

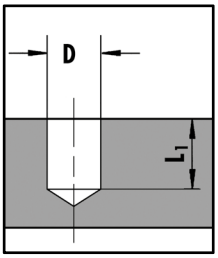


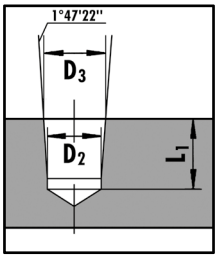
D5800

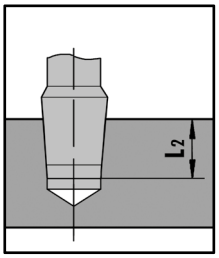
Ø" Rc	l_1 mm	l_2 mm	d_2 mm	a mm	ID
1/16	70	17	6	4.9	● 118701
1/8	70	17	8	6.2	● 110531
1/4	80	27	10	8	● 110530
3/8	85	27	12	9	● 110535
1/2	95	35	16	12	● 110529
3/4	105	35	20	16	● 110534
1	130	43	25	20	● 110532

Kernloch-Durchmesser für kegeliges Rohrgewinde nach DIN EN 10226
Core hole diameters for tapered pipe thread to DIN EN 10226

Bohrung zylindrisch	***Bohrung konisch 1:16***	***Gewindeschneiden***
Vermeiden, da schnellere Abnützung des Gewindebohrers und Klemmen	*Zylindrisch bohren nach Ø D_2 und konisch aufreiben auf Ø D_3*	*Gewindebohrer auf Nennmass L_2 eindrehen*
Parallel hole	**Tapered hole 1:16**	**Tapped hole**
Increased tap wear, not recommended	Pre-drill at ∅ D_2 and taper-ream to ∅ D_3	Engage tap to hole depth L_2 = nominal ∅



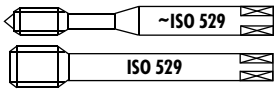


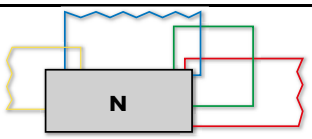


Ø" Rc	L_1 min. mm	D_1 mm	D_2 mm	D_3 mm	L_2 mm
1/16	11.9	6.2	6.1	6.56	10.6
1/8	11.9	8.2	8.1	8.57	10.6
1/4	17.7	11	10.75	11.45	15.7
3/8	18.1	14.5	14.25	14.95	16.1
1/2	24	18	17.75	18.63	21.4
3/4	25.3	23.5	23	24.12	21.5
1	30.6	29.5	29	30.29	26.3

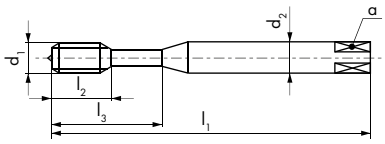
W BS 84 (BSW)

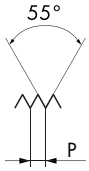
HSS





	N1110-3	N1210-3	N1120-4	N1220-4
	31 62 73 74 91	31 62 73 74 91	62 63 64 72 73 74 81 91	62 63 64 72 73 74 81 91
	< 1.5 x D	< 1.5 x D		
	C 2 x P	C 2 x P	B 4 x P	B 4 x P

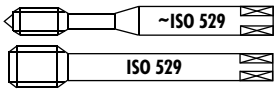




Ø" d_1 W	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
1/8	40	3.17	48	11	18	3.15	2.5	3	2.5	● 103025		● 103126	
5/32	32	3.96	53	13	21	4	3.15	3	3.1	● 103031		● 103130	
3/16	24	4.76	58	16	25	5	4	3	3.6	● 103026		● 103127	
1/4	20	6.35	66	19	30	6.3	5	3	4.9	● 103024		● 103125	
5/16	18	7.93	72	22	35	8	6.3	3	6.4	● 103030		● 103129	
3/8	16	9.52	80	24	39	10	8	3	7.7	● 103028		● 103128	
7/16	14	11.11	85	22		8	6.3	3	9.1		● 103642		● 103771
1/2	12	12.7	89	24		9	7.1	3	10.3		● 103634		● 103767
5/8	11	15.87	102	32		12.5	10	3	13.3		● 103641		● 103770
3/4	10	19.05	112	33		14	11.2	3	16.2		● 103640		● 103769

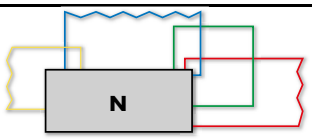
W, SV Schaublin

HSSE



HSS

DC



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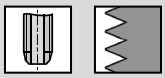
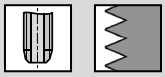
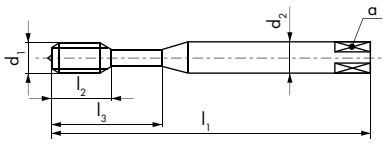
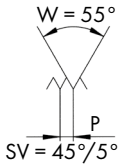
N1110-3  31 62 73 74 91

N1210-3  31 62 73 74 91

N5120

11 12

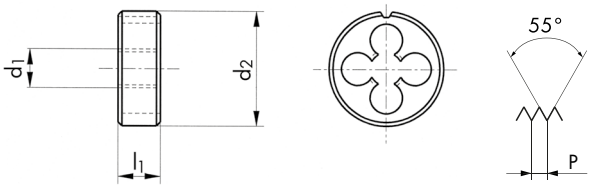




Ø d_1 W	P TPI/mm		l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
5	36/TPI/1"	B6	58	16	25	5	4	3	4.3*	● 103029
6.82	0.625	B8	66	19	30	7.1	5.6	3	6.2*	● 111143

Ø d_1 SV	P mm		l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
10	0.833	W10	80	24	39	10	8	3	* 8.9	● 130429	
12	1.25	W12	89	24		9	7.1	3	* 10.5		● 103591
15	1.25	W15	90	23		11.2	9	3	* 13.5		● 103592
20	1.666	W20	112	37		14	11.2	4	* 17.9		● 103593
25	1.693	W25	120	30		18	14	4	* 22.75		● 103594

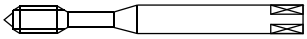
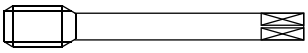
*** Tol.** θ .1 mm / 0



Ø d_1 W	P mm		d_2 mm	l_1 mm			ID
6.82	0.625	B6	25	9	4	6.75	● 130215

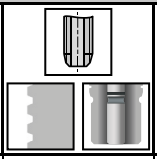
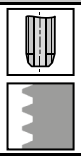
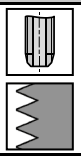
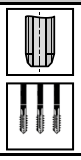
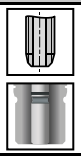
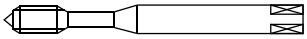
NPT, NPTF

Maschinengewindebohrer, NPT ASME B1.20.1 und NPTF ANSI B1.20.3
Machine taps, NPT ASME B1.20.1 and NPTF ANSI B1.20.3

	N			
Merkmale **Characteristics**		V	V	1:16
Lochart **Hole type**				
				
	**N410-3**	**N410V-3**	**N411V-3**	**D5800**
NPT DIN lang **NPT DIN long** **DC**	220	220	220	221
NPTF DIN lang **NPTF DIN long** **DC**	220			

PG, TR

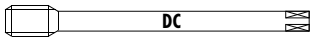
Maschinen- und Handgewindebohrer, PG DIN 40430, TR ISO 2901-2904, DIN 103
Machine and hand taps, PG DIN 40430, TR ISO 2901-2904, DIN 103

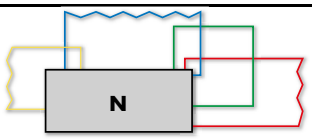
		N					
Merkmale **Characteristics**							
Lochart **Hole type**							
							
		N420-3	**N410-1**	**N410-2**	**N410-3**	**N410-S**	**N410-8**
PG DIN lang **PG DIN long**	**DIN 40433**	222					
TR DIN lang **TR DIN long**	**DC**		223	223	223	223	222
Toleranz **Tolerance**	**TR 7H**				223	223	222

NPT, NPTF

ASME B1.20.1, ANSI B1.20.3

HSSE





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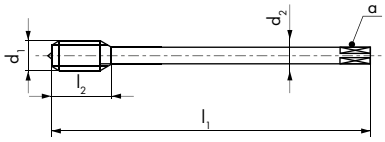
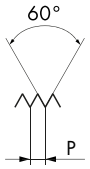
N410V-3		11 12 14 21 32		
N411V-3			11 12 14 21 32	
N410-3	31 62 74			





Ø" d_1 NPT, NPTF	P TPI	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID	ID	ID
1/16	27	71	13	7	5.5	3	• 101961	• 102021	• 102031	• 101971
1/8	27	71	13	8	6.2	5	• 101964	• 102024	• 102034	• 101974
1/4	18	80	20	11	9	5	• 101963	• 102023	• 102033	• 101973
3/8	18	90	20	12	9	5	• 101968	• 102028	• 102038	• 101978
1/2	14	100	26	16	12	5	• 101962	• 102022	• 102032	• 101972
3/4	14	110	26	20	16	5	• 101967	• 102027	• 102037	• 101977
1	11.5	125	32	25	20	5	• 101965	• 102025	• 102035	• 101975
1 1/4	11.5	125	32	32	24	5	• 101960	• 102020		
1 1/2	11.5	140	32	36	29	5	• 101959	• 102019		
2	11.5	160	32	36	29	7	• 101966	• 102026		

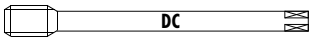
Vc (m/min) Ø d1 - Guide Line

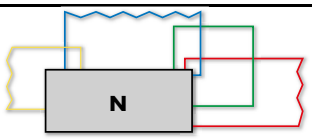
NPT, NPTF	1/16" - 1/4"	3/8" - 1/2"	3/4" - 1"	1.1/4" - 2"
11 12 14 32	6	5	4	3
21	5	4	3	2
31 74	10	8	7	5
62	18	15	13	10

NPT, NPTF

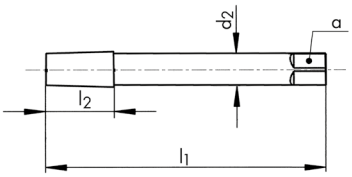
ASME B1.20.1, ANSI B1.20.3

HSSE





D5800



D5800

Ø" NPT, NPTF	l_1 mm	l_2 mm	d_2 mm	a mm	ID
1/16	70	17	6	4.9	● 118701
1/8	70	17	8	6.2	● 110531
1/4	80	27	10	8	● 110530
3/8	85	27	12	9	● 110535
1/2	95	35	16	12	● 110529
3/4	105	35	20	16	● 110534
1	130	43	25	20	● 110532

Kernloch-Durchmesser für NPT- und NPTF-Gewinde

Core hole diameters for NPT and NPTF threads

Bohrung zylindrisch

Vermeiden, da schnellere Abnützung des Gewindebohrers und Klemmen

Parallel hole

Increased tap wear, not recommended

Bohrung konisch 1:16

Zylindrisch bohren nach Ø D_2 und konisch aufreiben auf Ø D_3

Tapered hole 1:16

Pre-drill at ∅ D_2 and taper-ream to ∅ D_3

Gewindeschneiden

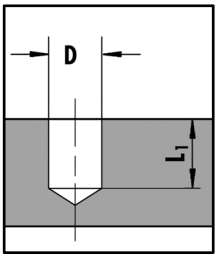
Gewindebohrer auf Nennmass L_3 eindrehen

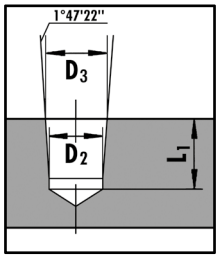
Tapped hole

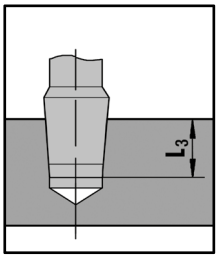
Engage tap to hole depth L_3 = nominal ∅

**Es wird empfohlen, das Kernloch auf D_3 maxi konisch aufzureiben.*

**Taper-ream at upper limit D_3 is recommended*







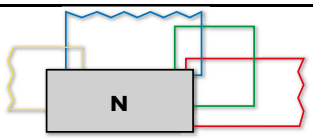
Ø" NPT, NPTF	D mm	L_1 mm	D_2 mm	NPT D_3 (+0.05) mm	NPTF D_3 (+0.05) mm	L_3 mm
1/16	6.15	12	6	6.39	6.41	10.2
1/8	8.5	12	8.3	8.74	8.76	10.3
1/4	11	17.5	10.8	11.36	11.4	15.1
3/8	14.5	17.5	14.2	14.8	14.84	15.3
1/2	17.9	23	17.5	18.32	18.33	20
3/4	23.2	23	22.8	23.67	23.68	20.5
1	29	28	28.6	29.69	29.72	24.6

PG DIN 40430 TR ISO 2901-2904, DIN 103

HSSE

DIN 40433

DC



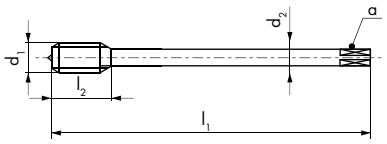
N420-3			N410-8

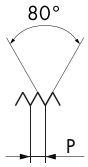
N420-3

61 63 71 72 73 81

N410-8

31 62 74





Ø d_1 PG	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		
7	20	12.5	100	24	9	7	3	11.3
9	18	15.2	100	26	12	9	3	13.9
11	18	18.6	110	26	14	11	4	17.3
13.5	18	20.4	125	28	16	12	4	19.1
16	18	22.5	125	28	18	14.5	4	21.2
21	16	28.3	150	36	22	18	4	26.8
29	16	37	170	38	28	22	4	35.5
36	16	47	190	38	36	29	5	45.5

ID
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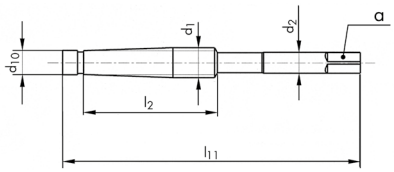
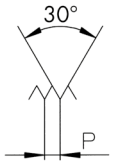
104902
104903
104904
104905
104906
104907
104908





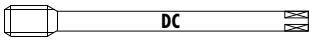
7H

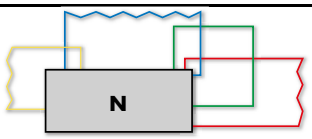
Ø d_1 TR	P mm	l_{11} mm	l_2 mm	d_{10} mm	d_2 mm	a mm		
10	2	100	45	8.2	7	5.5	3	8.2
12	3	140	75	9.25	8	6.2	3	9.25
14	3	150	75	11.25	10	8	3	11.25
16	4	180	100	12.25	11	9	3	12.25
18	4	180	100	14.25	12	9	3	14.25
20	4	190	100	16.25	14	11	3	16.25
22	5	220	110	17.25	16	12	4	17.25
24	5	220	110	19.25	18	14.5	4	19.25

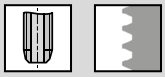
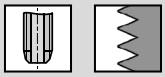
ID
102008
102009
102010
102011
102012
102013
111616
102015

TR ISO 2901-2904, DIN 103

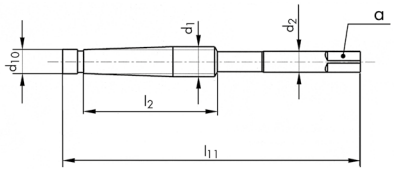
HSSE

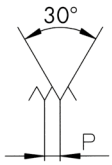




	N410-1	N410-2	N410-3	N410-S
				

	N410-1	N410-2	N410-3	N410-S





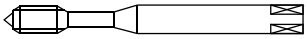
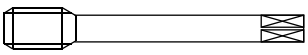
7H 7H

Ø d_1 TR	P mm	l_{11} mm	l_2 mm	d_{10} mm	d_2 mm	a mm			ID	ID	ID	ID
10	2	85	30	8.2	7	5.5	3	8.2	* 101827	* 101838	* 101979	* 110972
16	4	165	65	12.25	11	9	3	12.25	* 101830	* 101841	* 101982	* 110975

Zufolge der geringen Nachfrage führen wir TR-Gewindebohrer-Sätze nicht mehr im Standard-Programm.
Auf Wunsch bieten wir Ihnen diese gerne als Spezialanfertigung an, Preis und Lieferfrist auf Anfrage.

Due to low demand, we no longer keep TR tap sets in our standard programme.
On request, we will be pleased to offer these as custom-made products, price and delivery time on demand.

EG *Maschinengewindebohrer, Aufnahmegewinde für Gewindeeinsätze EG M, EG UNC, EG UNF*
Machine taps for wire screw thread inserts EG M, EG UNC, EG UNF

	N				Z	S	
Merkmale **Characteristics**		V	R40	R40 V	R45 VS	VS	R35 VS
Lochart **Hole type**							
	**N320-4**	**N320V-4**	**N360-3**	**N360V-3**	**Z370VS-3**	**S320VS-4**	**S360VS-3**
DIN lang **DIN long** **~DIN 40435**	226	226	227	227			
DIN lang **DIN long** **~DIN 2184-1**	230 / 233		230 / 233		231 / 234	234	234
Gewinde **Thread** **EG M**	226	226	227	227			
Gewinde **Thread** **EG UNC**	230		230		231		
Gewinde **Thread** **EG UNF**	233		233		234	234	234
	**N420-4**	**N420V-4**	**N460-3**	**N460V-3**			
DIN lang **DIN long** **~DIN 40435**	226	226	227	227			
DIN lang **DIN long** **~DIN 2184-1**	230 / 233		230 / 233				
Gewinde **Thread** **EG M**	226	226	227	227			
Gewinde **Thread** **EG UNC**	230		230				
Gewinde **Thread** **EG UNF**	233		233				

EG

Maschinengewindebohrer, Aufnahmegewinde für Gewindeeinsätze EG M, EG UNC, EG UNF
Machine taps for wire screw thread inserts EG M, EG UNC, EG UNF

SA			TL	
	R15	R10	VS	R15 VS
SA320-4	**SA350-3**	**SA390-3**	**TL320VS-4**	**TL351VS-3**
228	228	229		228
232 / 235	232 / 235	234	232	232 / 235
228	228	229		228
232	232		232	232
235	235	234		235

...MEHR INFORMATIONEN AUF UNSERER WEBSITE
...MORE INFORMATION ON OUR WEBSITE
www.dcswiss.com

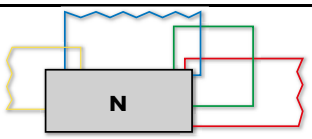
EG M ISO DIN 8140

≤ Ø 2.8 > Ø 2.8

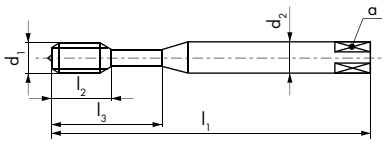
PM | HSSE

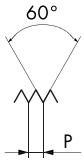
~DIN 40435

~DIN 40435



	N320-4	N320V-4	N420-4	N420V-4		
N320-4			62 63 64 72 73 74 81 91			
N320V-4		V	11 12 31 32			
N420-4			62 63 64 72 73 74 81 91			
N420V-4		V	11 12 31 32			
	B 4 x P	B 4 x P	B 4 x P	B 4 x P		
	6H mod	6H mod	6H mod	6H mod		





Ø d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.4	2.52	50	10		2.8	2.1	3	2.1	● 101537	● 118788		
2.5	0.45	3.08	56	12	18	3.5	2.7	3	2.65	● 101538			
3	0.5	3.65	56	13	20	4	3	3	3.15	● 101539	● 142804		
4	0.7	4.91	70	15	25	6	4.9	3	4.2	● 101540	● 142805		
5	0.8	6.04	80	17	30	6	4.9	3	5.25	● 101541	● 142806		
6	1	7.3	80	17	30	7	5.5	3	6.3	● 101542	● 142807		
8	1.25	9.62	100	22	39	10	8	3	8.4	● 101543	● 142808		
10	1.5	11.94	100	24		9	7	3	10.4			● 102252	● 142809
12	1.75	14.27	110	28		11	9	3	12.5			● 102253	● 142810
16	2	18.59	125	33		14	11	3	16.6			● 102255	● 142812

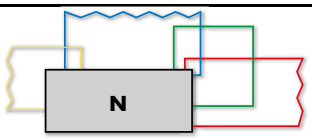
EG M ISO DIN 8140

≤ Ø 2.8 > Ø 2.8

PM | HSSE

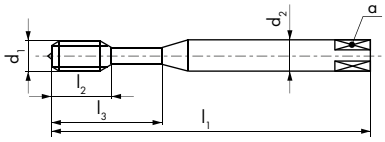
~DIN 40435

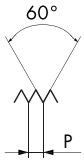
~DIN 40435



N360-3	R40		63	72	73	74	81	91
N360V-3	R40	V	11	12	32			
N460-3	R40		63	72	73	74	81	91
N460V-3	R40	V	11	12	32			

N360-3	N360V-3	N460-3	N460V-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D





N360-3	N360V-3	N460-3	N460V-3
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6H mod	6H mod	6H mod	6H mod

Ø d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			N360-3 ID	N360V-3 ID	N460-3 ID	N460V-3 ID
2	0.4	2.52	50	9		2.8	2.1	2	2.1	● 101599			
2.5	0.45	3.08	56	5.5	18	3.5	2.7	3	2.65	● 101600			
3	0.5	3.65	56	6.5	20	4	3	3	3.15	● 101601	● 142813		
4	0.7	4.91	70	9	25	6	4.9	3	4.2	● 101602	● 142814		
5	0.8	6.04	80	11	30	6	4.9	3	5.25	● 101603	● 142815		
6	1	7.3	80	11	30	7	5.5	3	6.3	● 101604	● 142816		
8	1.25	9.62	100	14	39	10	8	3	8.4	● 101605	● 142817		
10	1.5	11.94	100	14		9	7	3	10.4			● 102335	● 142818
12	1.75	14.27	110	14		11	9	3	12.5			● 102336	● 142819
14	2	16.59	110	18		12	9	3	14.6			● 102337	● 142820
16	2	18.59	125	21		14	11	3	16.6			● 102338	● 142821

EG M ISO DIN 8140

PM

~DIN 40435

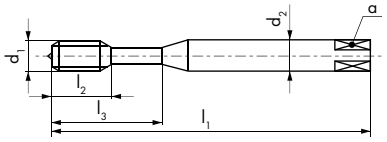
aero

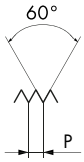
	SA320-4	SA350-3		TL351VS-3
	B 4 x P	C 2.5 x P		C 2.5 x P
	6H mod	6H mod		6H mod

SA320-4 — 15 16 52 64

SA350-3 — R15 — 15 16 52 64

TL351VS-3 — R15 — VS — 41 42





Ø d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
3	0.5	3.65	56	13		4	3	3	3.15	● 147676	● 147682	● 150478
4	0.7	4.91	70	15		6	4.9	3	4.2	● 147678	● 147684	● 152003
5	0.8	6.04	80	15	23	6	4.9	3	5.25	● 147680	● 147686	● 150184
6	1	7.3	80	15	23	7	5.5	3	6.3	● 147688	● 147692	● 152005
8	1.25	9.62	100	20	33	10	8	3	8.4	● 149354	● 149356	● 152089

EG M ISO DIN 8140

PM

~DIN 40435

aero

SA390-3

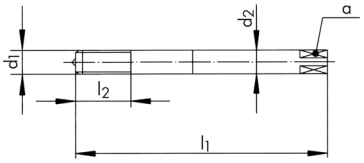
R10

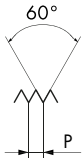
16 53

SA390-3

< 1.5 x D

< 1.5 x D





C
2.5 x P

6H
mod

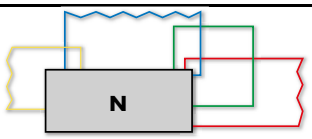
Ø d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
3	0.5	3.65	56	13	4	3	3	3.15	149669
4	0.7	4.91	70	15	6	4.9	3	4.2	149688
5	0.8	6.04	80	20	6	4.9	3	5.25	149710
6	1	7.3	80	20	7	5.5	3	6.3	149723
8	1.25	9.62	100	30	10	8	3	8.4	149748
10	1.5	11.94	110	35	12	9	3	10.4	149767

EG UNC ASME B18.29.1

HSSE

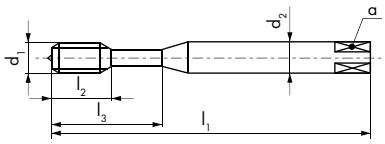
~DIN 2184-1

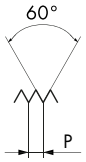
~DIN 2184-1



N320-4		62 63 64 72 73 74 81 91
N420-4		62 63 64 72 73 74 81 91
N360-3	R40	63 72 73 74 81 91
N460-3	R40	63 72 73 74 81 91

N320-4	N420-4	N360-3	N460-3
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
3B	3B	3B	3B





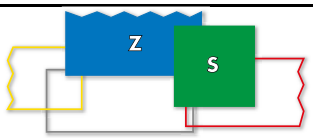
Ø" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
4	40	3.67	56	13	20	4	3	3	3.05	● 110946	
6	32	4.53	70	15	25	6	4.9	3	3.75	● 110948	
8	32	5.19	70	15	25	6	4.9	3	4.45	● 110949	
1/4	20	8	90	20	35	8	6.2	3	6.7	● 110944	
5/16	18	9.77	100	22	39	10	8	3	8.4	● 110947	
3/8	16	11.58	110	24		9	7	3	10		● 110033
1/2	13	15.23	110	30		12	9	3	13.3		● 104935

Ø" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
4	40	3.67	56	6.5	20	4	3	3	3.05	● 110018	
6	32	4.53	70	9	25	6	4.9	3	3.75	● 110019	
8	32	5.19	70	9	25	6	4.9	3	4.45	● 110956	
10	24	6.2	80	11	30	7	5.5	3	5.1	● 110954	
1/4	20	8	90	12.5	35	8	6.2	3	6.7	● 110024	
5/16	18	9.77	100	14	39	10	8	3	8.4	● 111759	
3/8	16	11.58	110	14		9	7	3	10		● 111715
1/2	13	15.23	110	18		12	9	3	13.3		● 111558

EG UNC ASME B18.29.1

PM

~DIN 2184-1 (d_2 h6)



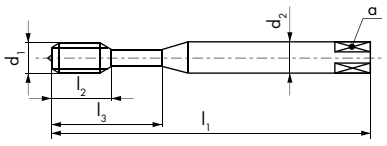
Z370VS-3			

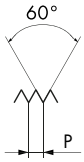
Z370VS-3 — R45 — VS — CLASSIC

14 15 21 22 23 24 51 61 94

Z370VS-3 — R45 — VS — SYNCHRO

13 14 15 21 22 23 24 51 52





3B

Ø d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
4	40	3.67	56	6.5	20	4(h9)	3	3	3.05	● 165126
6	32	4.53	70	9	25	6	4.9	3	3.75	● 165127
8	32	5.19	70	9	25	6	4.9	3	4.45	● 165128

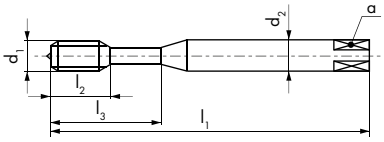
EG UNC ASME B18.29.1

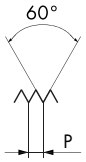
PM

~DIN 2184-1

aero

SA320-4		15 16 52 64
SA350-3	R15	15 16 52 64
TL320VS-4	VS	41 42
TL351VS-3	R15 VS	41 42





SA320-4	SA350-3	TL320VS-4	TL351VS-3
	< 1.5 x D		< 2 x D
			< 2 x D
B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
3B	3B	3B	3B

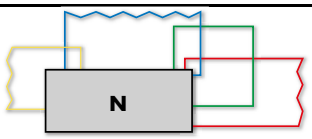
Ø" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
4	40	3.67	56	13		4	3	3	3.05	• 149073	• 149075		• 152031
6	32	4.53	70	15		6	4.9	3	3.75	• 149121	• 149123	* 152040	• 152041
8	32	5.19	70	15		6	4.9	3	4.45	• 149170	• 149172		• 152053
1/4	20	8	90	18	29	8	6.2	3	6.7	• 149284	• 149286	* 152073	• 152074
5/16	18	9.77	100	20	33	10	8	3	8.4		* 149360		

EG UNF ASME B18.29.1

HSSE

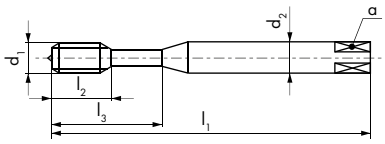
~DIN 2184-1

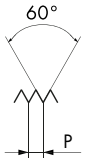
~DIN 2184-1



N320-4		62 63 64 72 73 74 81 91
N420-4		62 63 64 72 73 74 81 91
N360-3	R40	63 72 73 74 81 91
N460-3	R40	63 72 73 74 81 91

N320-4	N420-4	N360-3	N460-3
B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
3B	3B	3B	3B





Ø" d1 EG UNF	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 mm	a mm			N320-4 ID	N420-4 ID	N360-3 ID	N460-3 ID
6	40	4.33	63	14	21	4.5	3.4	3	3.7	● 118879			
8	36	5.08	70	15	25	6	4.9	3	4.4	● 118882			
10	32	5.85	80	17	30	6	4.9	3	5.1	● 104941			
1/4	28	7.52	90	20	35	8	6.2	3	6.65	● 110234			
5/16	24	9.31	90	20	35	9	7	3	8.2	● 118876			
3/8	24	10.89	100	19		8	6.2	3	9.8		● 118873		
1/2	20	14.35	100	24		11	9	3	13.1		● 118865		

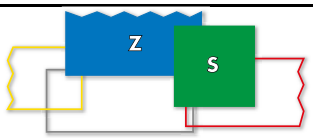
Ø" d1 EG UNF	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 mm	a mm			N320-4 ID	N420-4 ID	N360-3 ID	N460-3 ID
6	40	4.33	63	7.5	21	4.5	3.4	3	3.7			● 110959	
8	36	5.08	70	9	25	6	4.9	3	4.4			● 110960	
10	32	5.85	80	11	30	6	4.9	3	5.1			● 104946	
1/4	28	7.52	90	12.5	35	8	6.2	3	6.65			● 110020	
5/16	24	9.31	90	12.5	35	9	7	3	8.2			● 111619	
3/8	24	10.89	100	19		8	6.2	3	9.8				● 110027
1/2	20	14.35	100	14		11	9	3	13.1				● 104951

EG UNF ASME B18.29.1

PM

~DIN 2184-1 (d_2 h6)

~DIN 2184-1



	Z370VS-3	S320VS-4	S360VS-3	SA390-3
	< 3 x D		< 2 x D	< 1.5 x D
				< 1.5 x D
	C 2.5 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	3B	3B	3B	3B

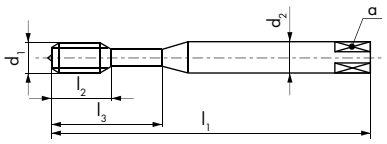
Z370VS-3 R45 VS CLASSIC 14 15 21 22 23 24 51 61 94

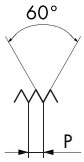
Z370VS-3 R45 VS SYNCHRO 13 14 15 21 22 23 24 51 52

S320VS-4 VS 13 15 16 22 23 24 52

S360VS-3 R35 VS 13 15 16 22 23 24 52

SA390-3 R10 aero 16 53





Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
10	32	5.85	80	11	30	6	4.9	3	5.1	● 165129
1/4	28	7.52	90	12.5	35	8	6.2	3	6.65	● 165130
5/16	24	9.31	90	12.5	35	* 8	* 6.2	3	8.2	● 165131

* Norme DC / * DC Norm/ * Norma DC

Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
10	32	5.85	80	17	30	6	4.9	3	5.1	● 111821
1/4	28	7.52	90	20	35	8	6.2	3	6.65	● 111822
5/16	24	9.31	90	20	35	9	7	3	8.2	● 111823

Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
10	32	5.85	80	11	30	6	4.9	3	5.1	● 111811
1/4	28	7.52	90	12.5	35	8	6.2	3	6.65	● 111812
5/16	24	9.31	90	12.5	35	9	7	3	8.2	● 111824

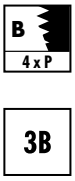
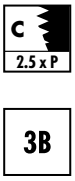
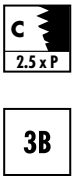
Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm		d_2 mm	a mm			ID
10	32	5.85	80	20		6	4.9	3	5.1	● 149702
1/4	28	7.52	90	25		8	6.2	3	6.65	● 149724

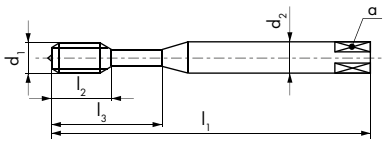
EG UNF ASME B18.29.1

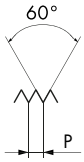
PM

~DIN 2184-1

aero

	SA320-4	SA350-3		TL351VS-3
				
SA320-4	15 16 52 64			
SA350-3 R15	15 16 52 64			
TL351VS-3 R15 VS	41 42			





Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
10	32	5.85	80	15	23	6	4.9	3	5.1	• 149190	• 149192	• 148008
1/4	28	7.52	90	18	29	8	6.2	3	6.65	• 146099	• 149268	• 148014
5/16	24	9.31	90	20	31	9	7	3	8.2	• 149336	• 149338	• 148021

KRONENGEWINDEBOHRER CROWN TAPS

Allgemeines
Der DC-Kronengewindebohrer mit "V"-Oberflächenbehandlung ist ein Hochleistungswerkzeug, das eine sichere Toleranzhaltigkeit und eine sehr saubere Oberflächenqualität garantiert.

Anwendungsbereich
Dank der stirnseitigen Aussparung, die die Spanaufnahme erlaubt, kann der Kronengewindebohrer sowohl für das Schneiden von Durchgangs- als auch von Sacklöchern verwendet werden. Er ist bestimmt für die Bearbeitung von Werkstoffen mit einer Zugfestigkeit von bis zu 850 N/mm² und einer Bruchdehnung von maximal 30 %.

Einsatz
Für einwandfreie Sacklochgewinde muss die Tiefe der Kernlochbohrung jeweils entsprechend angepasst und die nachstehenden Hinweise müssen befolgt werden:
- *Gewinde schneiden, bis Rutschkupplung anspricht*
- *Gewindebohrer zurückdrehen und Späne entfernen*
- *Gewinde fertig schneiden.*

Spezielle Anforderungen
Das einwandfreie Funktionieren der DC-Kronengewindebohrer und der damit erzielten Gewindequalität ist abhängig von folgenden Voraussetzungen:
- *Zentrierfehler darf 0.1 mm nicht überschreiten*
- *Einsatz eines entsprechenden Gewindeschneidfutters, das einen einwandfreien Rundlauf ermöglicht*
- *korrekte Schnittgeschwindigkeit wählen*
- *Schneidöl dem Werkstoff anpassen*
- *einspannen in einem Gewindeschneidfutter mit Längenausgleich und Überlastungskupplung*
- *Überlastungskupplung so einstellen, dass das Ansprechdrehmoment nur leicht höher liegt als das Schneiddrehmoment.*

Es ist empfehlenswert, beim ersten Gewinde die Rutschkupplung bis zum Gleiten zu entlasten und dann schrittweise anzuziehen, bis der Gewindebohrer mitgenommen wird.

Spanaufnahme
Die Spanaufnahmekapazität der stirnseitigen Krone ist ausreichend für:

Gewindedurchmesser	*Ø 20 - 29 mm*	*≥ Ø 30 mm*
M	*-*	*1.4 x D*
MF	*1.2 x D*	*1.4 x D*
UN-8	*-*	*1.4 x D*
G	*1.2 x D*	*1.4 x D*

General information
The DC crown tap with "V" surface treatment to prevent cold welding is a tool of high performance, which offers a very high quality surface finish of the tapped threads.

Application rang
Thanks to the front recess providing space for the chip collection, the DC crown tap is suitable for both, through and blind hole tapping. The crown tap can be used for materials with a tensile strength up to 850 N/mm² and an elongation of maximum 30 %.

Utilization
For an optimal blind hole threading, the core hole depth must be adapted accordingly and the following application instructions must be followed:
- tap until tapping head clutch slips
- retract tap and clear chips
- tap to the full depth.

General hints
The efficient operation of DC crown taps, as well as the quality of the cut threads, depend on observation of the following rules:
- do not exceed the maximum permissible centering error of 0.1 mm
- the tap must run concentrically, use a suitable tapping head
- tap at the correct cutting speed
- select a coolant to suit the material being tapped
- use a tapping head with axial compensation and safety clutch
- set the safety clutch so that it will slip at just above the tapping torque.

When tapping the first hole, slacken the clutch until it slips, then gradually tighten it until the tap is driven.

Chip accumulation
The chip accumulation capacity of the recess is the following:

Thread diameter	Ø 20 - 29 mm	≥ Ø 30 mm
M	-	1.4 x D
MF	1.2 x D	1.4 x D
UN-8	-	1.4 x D
G	1.2 x D	1.4 x D

Schnittgeschwindigkeiten und Drehzahlen (Richtwerte) - Cutting and spindle speeds (guide values)

M	P	V_c (m/min)	n (U/min)
30	3.5	7.9	84
33	3.5	7.7	74
36	4.0	7.5	66
39	4.0	7.3	60
42	4.5	7.1	54
45	4.5	6.9	49
48	5.0	6.6	44
52	5.0	6.4	39
56	5.5	6.1	35
60	5.5	5.8	31
64	6.0	5.5	28
68	6.0	5.2	25

MF	P	V_c (m/min)	n (U/min)
22	1.5	8.0	116
24	1.5	8.0	106
26	1.5	7.9	97
28	1.5	7.9	90
30	1.5	7.9	84
30	2.0	7.9	84
32	1.5	7.8	77
32	2.0	7.8	77
33	1.5	7.7	74
33	2.0	7.7	74
34	1.5	7.6	71
35	1.5	7.6	69
36	1.5	7.5	66
36	2.0	7.5	66
36	3.0	7.5	66
38	1.5	7.3	62
40	1.5	7.2	57
40	2.0	7.2	57
42	1.5	7.1	54
42	2.0	7.1	54
42	3.0	7.1	54
42	4.0	7.1	54

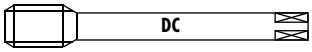
MF	P	V_c (m/min)	n (U/min)
45	1.5	6.9	49
45	2.0	6.9	49
48	1.5	6.6	44
48	2.0	6.6	44
48	3.0	6.6	44
48	4.0	6.6	44
50	1.5	6.5	41
52	1.5	6.4	39
52	3.0	6.4	39
55	1.5	6.2	36
56	4.0	6.1	35
60	2.0	5.8	31
64	4.0	5.5	28
68	4.0	5.2	25
72	6.0	5.0	22
76	6.0	4.7	20
80	2.0	4.4	18
80	4.0	4.4	18
80	6.0	4.4	18
90	6.0	3.7	13
100	6.0	3.0	10
110	6.0	2.5	7

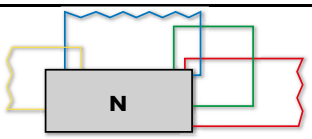
UN-8	P TPI	V_c (m/min)	n (U/min)
1 1/4″	8	7.8	77
1 3/8″	8	7.6	69
1 1/2″	8	7.3	62
1 5/8″	8	7.1	55
1 3/4″	8	6.9	49
1 7/8″	8	6.7	45
2″	8	6.4	40
2 1/8″	8	6.4	38
2 1/4″	8	6.1	34
2 1/2″	8	5.6	28

G	P TPI	V_c (m/min)	n (U/min)
3/4″	14	7.9	95
1″	11	7.7	74
1 1/4″	11	7.1	54
1 1/2″	11	6.6	44
1 3/4″	11	6.3	37
2″	11	5.8	31

M ISO DIN 13

HSSE



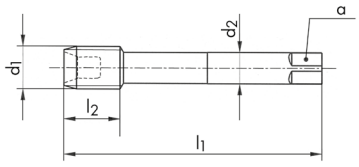


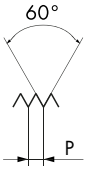
N470V-4

V

11 12 13 14 21 32

N470V-4

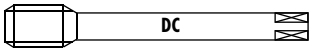


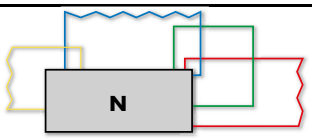


Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
30	3.5	180	39	22	18	5	26.5	● 102575
33	3.5	180	39	22	18	5	29.5	* 102576
36	4	200	43	25	20	5	32	● 102577
39	4	200	43	25	20	5	35	● 102578
42	4.5	220	47	28	22	5	37.5	● 102579
45	4.5	220	47	28	22	5	40.5	● 102580
48	5	240	52	32	24	5	43	● 102581
52	5	240	52	32	24	5	47	● 102582
56	5.5	260	58	36	29	6	50.5	● 102583
60	5.5	260	58	36	29	6	54.5	● 102584
64	6	290	64	40	32	6	58	● 102585
68	6	290	64	40	32	6	62	* 102586

MF ISO DIN 13

HSSE



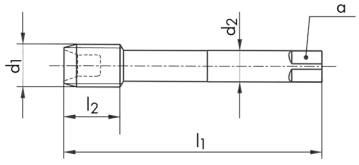


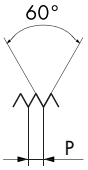
N470V-3

V

11 12 13 14 21 32

N470V-3





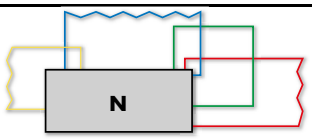
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
Δ22	1.5	125	28	18	14.5	4	20.5	✱ 102526
Δ26	1.5	140	30	18	14.5	4	24.5	✱ 102529
Δ28	1.5	140	30	20	16	4	26.5	✱ 102530
30	1.5	160	32	22	18	5	28.5	✱ 102531
34	1.5	160	26	22	18	5	32.5	✱ 102537
35	1.5	175	28	25	20	5	33.5	✱ 102538
36	2	175	35	25	20	5	34	● 102540
36	3	200	43	25	20	5	33	● 102541
38	1.5	175	28	25	20	5	36.5	✱ 102542
40	2	190	38	28	22	5	38	✱ 102544
42	2	190	38	28	22	5	40	● 102546
42	3	220	47	28	22	5	39	● 102547
48	1.5	205	34	32	24	5	46.5	✱ 102551
48	3	205	41	32	24	5	45	● 102553
52	3	205	41	32	24	5	49	● 102557
56	4	260	58	36	29	6	52	● 102559
64	4	290	64	40	32	6	60	● 102561
80	4	270	56	45	35	7	76	✱ 102564

Other sizes from Ø 30 to 160 mm on request!

Δ

UN ASME B1.1 G DIN EN ISO 228 (BSP)

HSSE

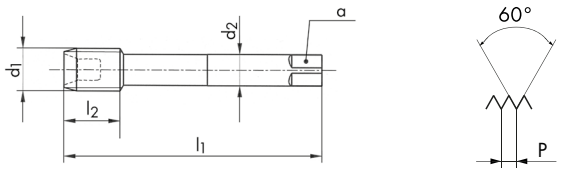


N470V-3

V

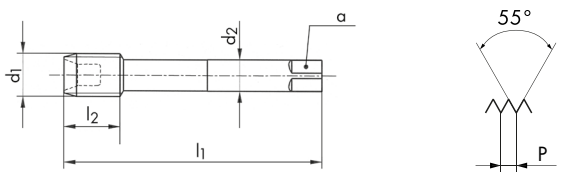
11 12 13 14 21 32

N470V-3



2B

Ø" d_1 UN	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
1 1/4	8	31.75	180	39	22	18	5	28.7	● 102566
1 3/8	8	34.92	180	39	22	18	5	31.8	● 102568
1 1/2	8	38.1	200	43	25	20	5	35	● 102565
1 5/8	8	41.27	220	47	28	22	5	38.2	● 102569
1 3/4	8	44.45	220	47	28	22	5	41.4	● 102567
1 7/8	8	47.62	240	52	32	24	5	44.5	● 102570
2	8	50.8	205	41	32	24	5	47.7	● 102572
2 1/8	8	53.97	205	41	32	24	5	50.9	★ 143542
2 1/4	8	57.15	220	45	36	29	6	54.1	● 102571
2 1/2	8	63.5	220	45	36	29	6	60.4	● 111879



Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
Δ 3/4	14	26.44	150	34	20	16	4	24.4	● 102525
1	11	33.24	160	32	22	18	5	30.7	● 102522
1 1/4	11	41.91	190	38	28	22	5	39.3	● 102519
1 1/2	11	47.8	205	41	32	24	5	45.2	● 102518
1 3/4	11	53.74	205	41	32	24	5	51.2	★ 102520
2	11	59.61	220	45	36	29	6	57	● 102524

Δ

KOMBI-GEWINDEBOHRER

Allgemeines

Der DC-Kombi-Gewindebohrer ist ein Werkzeug, das das Schneiden des Kernloches und des Gewindes in einem Arbeitsgang erlaubt, ohne dass ein Werkzeugwechsel notwendig ist.
Er ist ideal für den Einsatz auf CNC-Maschinen, Bohrtasteinheiten, Drehbänken mit Revolverkopf und Gewindeschneidmaschinen.

Anwendungsbereich

Werkstoffe mit einer Zugfestigkeit bis 750 N/mm² lassen sich mit dem DC-Kombi-Gewindebohrer bearbeiten, also gewisse Stähle, Grauguss, Messing, Aluminium.

Spezielle Anforderungen

- *Das Kernloch muss vollständig durchbohrt sein, bevor der Gewindebohrer zu schneiden beginnt.*
- *Bei der Bearbeitung von kurzspanenden Werkstoffen darf die Gewindetiefe 1.8 x D nicht überschreiten (Typ N5952 bis 2 x D).*
- *Bei der Bearbeitung von langspanenden Werkstoffen darf die Gewindetiefe 1.2 x D nicht überschreiten.*
- *Schmieren wie beim Gewindeschneiden.*

Schnittgeschwindigkeiten

Wenn die Maschine, auf der die Kombibohrer eingesetzt werden, es erlaubt, ist es vorteilhaft, die idealste Drehzahl für das Gewindeschneiden zu wählen. (Siehe dazu unsere Anwendungstabelle).
Für Maschinen, auf denen eine unterschiedliche Drehzahl für das Bohren und Gewindeschneiden nicht eingestellt werden kann, empfehlen wir die nachstehend aufgeführten Schnittwerte.

Programmierungs-Instruktionen

Ansenkung:

Gleichzeitig zentrieren und ansenken.

Programmschritte bei Spindelvorschub und Rotation, 100 % synchronisiert (Idealfall):

1) Kombi-Gewindebohrer im Eilgang in Arbeitsposition bringen

2) Bohren:
- *Drehzahl einstellen*
- *Vorschub einstellen*
- *lange Späne vermeiden*
- *Späne entfernen*

3) Gewindeanschnitt in Startposition bringen

4) Gewindeschneiden:
- *Drehzahl einstellen*
- *Vorschub (100 %) einstellen*
- *Gewindetiefe einstellen*
- *Gewindebohrer muss vor Arbeitsbeginn spanfrei sein*

5) Kombi-Gewindebohrer zurück in Startposition.

Programmschritte bei nicht voller Synchronisation von Spindelvorschub und Rotation:

Wichtig: Kombi-Gewindebohrer in Futter spannen, mit blockierter Andrucksfeder, jedoch mit Längenausgleich.

1) Kombi-Gewindebohrer im Eilgang in Arbeitsposition bringen

2) Bohren:
- *Drehzahl einstellen*
- *Vorschub einstellen*
- *lange Späne vermeiden*
- *Späne entfernen*

3) Gewindeanschnitt in Startposition bringen

4) Gewindeschneiden:
- *Drehzahl einstellen*
- *Vorschub = 90 - 95 %*
- *Gewindetiefe einstellen*

5) Kombi-Gewindebohrer zurück in Startposition.

Schnittgeschwindigkeiten und Drehzahlen (Richtwerte)

		Durchmesser und Drehzahl U/min										
Werkstoffgruppen	**Vc (m/min)**	**M3**	**M4**	**M5**	**M6**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**
Stähle bis 500 N/mm²	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Stähle über 500 N/mm²	15	1600	1200	950	800	600	480	400	340	300	270	240
Grauguss weich	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Grauguss hart	15	1600	1200	950	800	600	480	400	340	300	270	240
Messing	25	2650	2000	1600	1330	950	800	660	570	500	450	400
Aluminium	25	2650	2000	1600	1330	950	800	660	570	500	450	400

COMBINATION DRILL/TAPS

General information

DC combination drill/taps - two tools in one, which allows the drilling and the threading of a workpiece without changing the tool.
It is the optimal solution for CNC-machines, drilling heads, turret lathes and tapping machines.

Application rang

DC combination drill/taps are recommended for use in materials with a tensile strenght up to 750 N/mm², such as certain steels, cast iron, aluminium, brass.

General hints

- The core hole must be completely drilled through before the tap starts cutting.
- In short chipping materials, the depth of thread should not exceed 1.8 x D (type N5952 up to 2 x D).
- In long chipping materials, the depth of thread should not exceed 1.2 x D.
- Lubricate as for tapping.

Cutting speeds

On drilling heads and CNC-machines, the ideal speeds for drilling and tapping are selected (see our application chart).
If the same speed is selected for both drilling and tapping, we recommend the values indicated below.

Programming instructions

Countersinking:

Center and countersink simultaneously.

Programming steps for spindle feed and rotation 100 % synchronised (ideal case):

1) Combi-drill-tap in rapid to start position
2) Drilling:
- set speed
- set feed
- avoid long chips
- clear shavings

3) Tapping section in start position
4) Tapping:
- set speed
- feed = 100 % pitch
- set thread depth
- tap must be free of swarf before starting to cut

5) Combi-drill-tap returns to start position.

Programming steps for spindle feed rotation not fully synchronised:

Important: Mount combination drill-tap in chuck with locked pressure spring, but with axial compensation on pull.

1) Combi-drill-tap in rapid to start position
2) Drilling:
- set speed
- set feed
- avoid long chips
- clear shavings

3) Tapping section in start position
4) Tapping:
- set speed
- feed = 90 - 95 % pitch
- set thread depth

5) Combi-drill-tap returns to start position.

Cutting and spindle speeds (guide values)

		Speeds for different diameters										
Material groups	**Vc (m/min)**	**M3**	**M4**	**M5**	**M6**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**
Steels up to 500 N/mm²	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Steels over 500 N/mm²	15	1600	1200	950	800	600	480	400	340	300	270	240
Cast iron, soft	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Cast iron, hard	15	1600	1200	950	800	600	480	400	340	300	270	240
Brass	25	2650	2000	1600	1330	950	800	660	570	500	450	400
Aluminium	25	2650	2000	1600	1330	950	800	660	570	500	450	400

M, MF ISO DIN 13

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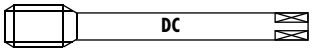
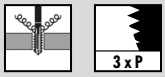
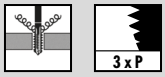
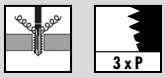
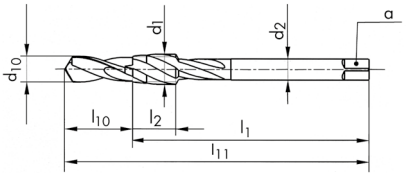
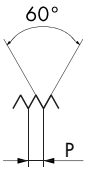


N5951 

N5952 

N5951 





N5951	N5952	N5951	
ISO 2 6H	ISO 2 6H	7H EN 60423	

Ø d_1 M	P mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
3	0.5	62	12.5	3.5	2.7	2.55	9	• 104578
4	0.7	66	16	4.5	3.4	3.36	10	• 104580
5	0.8	75.5	18	6	4.9	4.26	12.5	• 104583
6	1	81	20	6	4.9	5.05	14	• 104585
8	1.25	93	12	6	4.9	6.8	20	• 104588
10	1.5	99	14	7	5.5	8.55	22	• 104571
12	1.75	106	16	9	7	10.3	25	• 104573
16	2	123	20	12	9	14.1	32	• 104576
20	2.5	132	22	16	12	17.6	36	• 104577

Ø d_1 M	P mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
4	0.7	77	16	4.5	3.4	3.36	21	• 104608
5	0.8	87	18	6	4.9	4.26	24	• 104609
6	1	94	20	6	4.9	5.05	27	• 104610
8	1.25	109	12	6	4.9	6.8	36	• 104611
10	1.5	118	14	7	5.5	8.55	41	• 104603

Ø d_1 MF	P mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
4	0.5	66	16	4.5	3.4	3.55	10	* 104579
5	0.75	75.5	18	6	4.9	4.31	12.5	* 123379
8	1	93	12	6	4.9	7.05	20	• 104587
10	1	99	14	7	5.5	9.05	22	• 104570

Ø d_1 MF	P mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
12	1.5	106	16	9	7	10.55	25	• 142825
16	1.5	123	16	12	9	14.55	32	• 142826
20	1.5	132	18	16	12	18.55	36	• 111844
25	1.5	155	22	18	14.5	23.55	45	• 111845
32	1.5	170	24	22	18	30.55	50	• 111846

UNC ASME B1.1 G DIN EN ISO 228 PG DIN 40430

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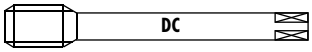

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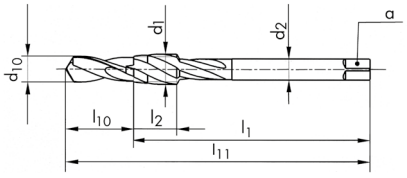
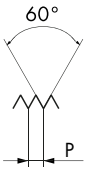
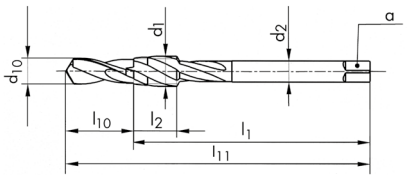
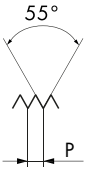




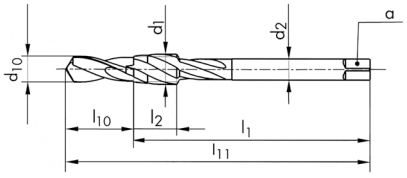
2B

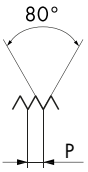
Ø" d_1 UNC	P TPI	d_1 mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
6	32	3.5	66	16	4	3	2.8	10	✶ 104601
10	24	4.82	75.5	18	4.5	3.4	3.86	12.5	● 104598
1/4	20	6.35	81	20	7	5.5	5.15	14	● 104597
1/2	13	12.7	106	16	9	7	10.85	25	✶ 104596





Ø" d_1 G	P TPI	d_1 mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
1/8	28	9.72	93	12	7	5.5	8.75	20	● 104567
1/4	19	13.15	106	14	11	9	11.75	25	● 104566
3/8	19	16.66	123	16	12	9	15.25	32	● 104569
1/2	14	20.95	132	18	16	12	19	36	● 104565





Ø d_1 PG	P TPI	d_1 mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
16	18	22.5	142	20	18	14.5	21.25	40	● 104591
29	16	37	203	28	28	22	35.65	63	● 104593

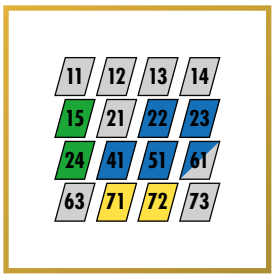
GEWINDEFORMEN
THREAD FORMING

AUF ANFRAGE

Spezialanfertigungen mit angepassten Polygonformen für spezifische Bearbeitungsfälle.

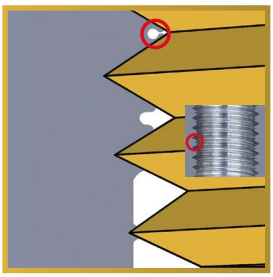
ON REQUEST

Special executions with adapted polygon lobes for specific applications.



Anwendungsbereich
Für sämtliche kaltverformbaren Werkstoffe mit einer Bruchdehnung von mindestens 10 % und einer Zugfestigkeit von bis zu 1'150 N/mm2, z.B. Stähle, rostfreie Stähle, Reintitan, Aluminium, Kupfer, langspanendes Messing, usw.

Range of application
All materials with a minimum of 10 % elongation and a tensile strength of up to 1'150 N/mm2, e.g. steels, stainless steels, pure titanium, aluminium, copper, long chipping brass, etc.



Formprozess
Die Zahnspitzen und -flanken des Gewindeformers dringen in den verformbaren Werkstoff ein und verdrängen das Material in die Freiräume des Werkzeugprofils. Dadurch entsteht das Gewindeprofil mit der typischen Furche in der Spitze.

Forming process
The polished points and flats of the thread former's teeth pierce the ductile material and force the material into the space in the tool profile. This creates the thread profile with its typical groove in the crest.

Vorteile
- *Höhere Prozesssicherheit, da keine Späne entstehen.*
- *Ein einziges Werkzeug für Durchgangs- und Sacklöcher.*
- *Ideal für tiefe Gewinde.*
- *Gewinde mit höherer Ausreissfestigkeit bei statischer und dynamischer Belastung.*

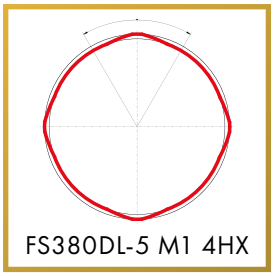
Advantages
- Higher process security due to the lack of shavings.
- Only one tool for both, through and blind holes.
- Optimal for deep threads.
- Thread with higher resistance of stripping by static and dynamic load.

Einsatzeinschränkung
Das Gewindeformen in dünnwandige Werkstücke ist aus physikalischer Sicht mit der notwendigen Sorgfalt anzuwenden.

Application restriction
For physical reasons, thread forming in thin-walled workpieces should be carried out with due care.

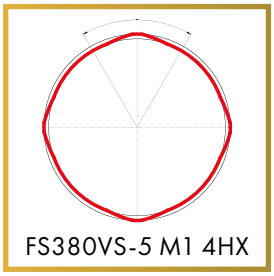
Ausreichend Schmieren
Beim Verformen von Werkstoffen entstehen erhebliche Reibkräfte. Deshalb muss das Werkzeug stets durch einen Schmierfilm geschützt werden. Ein Riss des Schmierfilms verursacht schnell Kaltverschweissungen, die zum Werkzeugbruch führen können.

Adequate lubrication
The thread forming process generates considerable friction. Therefore the tool must be protected by a film of lubricant. If the supply of lubricant is interrupted, then cold welding will quickly occur, resulting in tool failure.


FS380DL-5 M1 4HX

Gewindeformer FS-DL
Universalgewindeformer mit 4 Druckstollen für kleine Gewinde im Abmessungsbereich Ø ≥ 1 - < 3 mm in alle kaltverformbaren Werkstoffe. Mit "DLC"-Verschleissschutzschicht mit ausserordentlichen Gleit- und Schmiereigenschaften. Für rostfreie Stähle, Reinkupfer, usw.

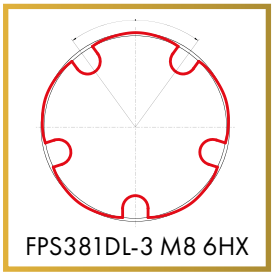
Thread former FS-DL
Universal thread former with 4 forming lobes for small thread sizes Ø ≥ 1 - < 3 mm, in all cold forming materials. With "DLC" wear-protective coating with excellent lubrication and sliding properties. For stainless steels, pure copper, etc.


FS380VS-5 M1 4HX

Gewindeformer FS-VS
Universalgewindeformer mit 4 Druckstollen für kleine Gewinde im Abmessungsbereich Ø ≥ 1 - < 3 mm in alle kaltverformbaren Werkstoffe. Mit DC-"VS"-Gleit- und Verschleissschutzschicht.

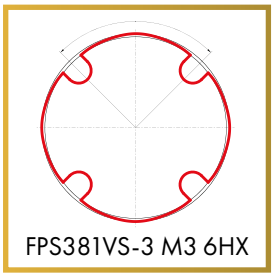
Thread former FS-VS
Universal thread former with 4 forming lobes for small thread sizes Ø ≥ 1 - < 3 mm, in all cold forming materials. With DC "VS" tool wear protective coating with high sliding properties.

NEW


FPS381DL-3 M8 6HX

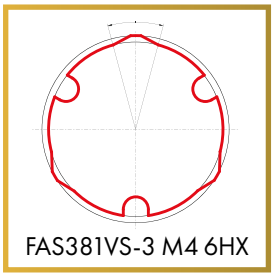
Gewindeformer FPS-DL
Für Ø ≥ 3 mm, mit breiten Druckstollen, die bei abrasiven Werkstoffen ein progressives Fliessen verursachen. Mit "DLC"-Verschleissschutzschicht für besseres Gleiten und höhere Standzeiten in langspanendem Messing und Aluminium.

Thread former FPS-DL
For Ø ≥ 3 mm, with large forming lobes designed for a progressive flow of abrasive materials. With "DLC" wear-protective coating for better gliding and high tool life in long chipping brass and aluminium.


FPS381VS-3 M3 6HX

Gewindeformer FPS-VS
Für Ø ≥ 3 mm, mit breiten Druckstollen, für ein progressives Fliessen von Werkstoffen mit geringer Bruchdehnung. Mit DC-"VS"-Verschleissschutzschicht mit thermischer und chemischer Beständigkeit bei hohen Temperaturen. Für Baustähle, Kohlenstoffstähle, legierte Stähle, usw.

Thread former FPS-VS
For Ø ≥ 3 mm, with large forming lobes designed for a progressive flow of materials with low elongation coefficient. With DC "VS" wear-protective coating with thermal and chemical properties. For structural steels, carbon steels, alloy steels, etc.


FAS381VS-3 M4 6HX

Gewindeformer FAS-VS
Für Ø ≥ 3 mm, mit spitzen Druckstollen, für ein schnelles Fliessen von zähen Werkstoffen mit hoher Bruchdehnung. Mit DC-"VS"- Verschleissschutzschicht mit ausserordentlichen Gleit- und Schmiereigenschaften. Für rostfreie Stähle, Reinkupfer, usw.

Thread former FAS-VS
For Ø ≥ 3 mm, with pointed forming lobes designed for a fast flow of tough materials with high elongation coefficient. With DC "VS" wear-protective coating with excellent lubrication and sliding properties. For stainless steels, pure copper, etc.

Schmiernuten ab Ø 3 mm
Dank dieser Nuten wird der Schmierstoff besser zur Werkzeugoberfläche geführt, die mit dem Werkstoff in direktem Kontakt ist.

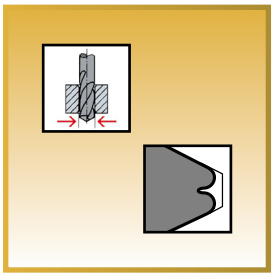
Lubrication grooves from Ø 3 mm
Lubricant will be guided to the surface of the tool which is directly in contact with the material.

Ohne Schmiernuten
Besonders geeignet für die Bearbeitung von weichen Werkstoffen und für Durchgangslöcher in dünne Bleche.

Without lubrication grooves
Especially recommended for forming soft materials and for through holes in thin parts (e.g. for sheet metal working).

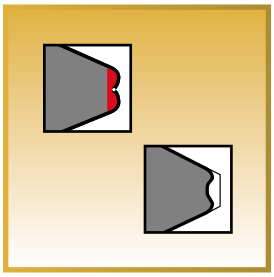
Mit Innenkühlung
Speziell empfohlen für tiefere Gewinde und für die Horizontalbearbeitung.

With internal coolant supply
Highly recommended for deeper threads and for horizontal working.



Korrektes Gewindeprofil
Für das Verformen ist eine genaue, saubere Vorbohrung erforderlich, damit ein normgerechtes Gewinde entsteht. Bei Werkstoffen mit sehr hoher Bruchdehnung oder bei Gewindetiefen von > 2 x D empfehlen wir, den Vorbohrungs-Ø um 0.02 bis 0.05 mm zu vergrössern.

Correct thread profile
Accurate core hole is required in order to form a thread according to the norm. For materials with a very high elongation coefficient and threading depth > 2 x D, we recommend increasing the core hole Ø by 0.02 to 0.05 mm.



Unkorrektes Gewindeprofil
Profil zu gross *zufolge eines zu kleinen Vorbohrungsdurchmessers; verursacht ein zu hohes Drehmoment.*
Profil ungenügend *- Folge eines zu grossen Vorbohrungsdurchmessers.*

Incorrect thread profile
Too big profile due to the too small core hole diameter. The required torque is higher.
Incomplete profile caused by the core hole diameter being too big.

KODIERUNG — CODIFICATION

DC-Gewindeformer

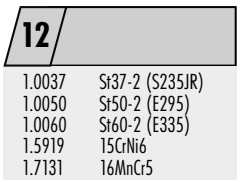
DC Thread formers

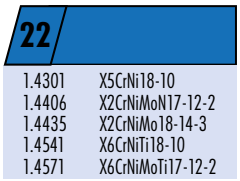
Beispiel - Example

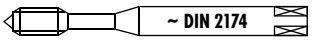
Standard Polygonform < Ø 3 mm	Standard polygon form < Ø 3 mm	FS
Passive Polygonform ≥ Ø 3 mm	Passive polygon form ≥ Ø 3 mm	FPS
Aktive Polygonform ≥ Ø 3 mm	Active polygon form ≥ Ø 3 mm	FAS
Spezialausführung	Special execution	3
Langer DIN-Schaft verstärkt	DIN long - reinforced shank	3
Langer DIN-Schaft durchfallend	DIN long - reduced shank	4
Extra-langer DIN-Schaft verstärkt	DIN extra-long - reinforced shank	5
Extra-langer DIN-Schaft durchfallend	DIN extra-long - reduced shank	6
Gewindeformer	Thread former	8
Ohne Schmiernuten	Without lubrication grooves	0
Mit Schmiernuten	With lubrication grooves	1
Innenkühlung mit seitlichem Austritt	Internal coolant with radial outflow	4
Verschleissschutzschicht	VS wear-protective coating, general	VS
DLC-Beschichtung	DLC-coating	DL
2 - 3 Gewindegänge	2 - 3 chamfered threads	-3
1.5 - 2 Gewindegänge	1.5 - 2 chamfered threads	-5

PIKTOGRAMME — PICTOGRAPHS

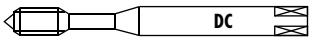
Für Werkstoffgruppen gemäss DC-Anwendungstabelle
For material groups as per DC application chart





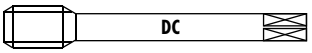


Verstärkter Schaft gemäss ~ DIN 2174
Reinforced shank as per ~ DIN 2174



Verstärkter Schaft gemäss DC-Werksnorm
Reinforced shank as per DC standards

Durchfallender Schaft gemäss ~ DIN 2174
Reduced shank as per ~ DIN 2174



Durchfallender Schaft gemäss DC-Werksnorm
Reduced shank as per DC standards

Extra-lang
Extra-long

HSSE-PM
HSSE-PM

Gewindeformer
Thread former

Gewindeformer mit Schmiernuten
Thread former with lubrication grooves

Innenkühlung mit stirnseitigem Schmiermittelaustritt, auf Anfrage
Internal coolant with frontal outflow, on request

Innenkühlung mit seitlichem Schmiermittelaustritt, neu 45°
Umstellung auf neue Ausführung im Gange
Internal coolant with radial outflow, new 45°
Change to new version in progress

Kernlochdurchmesser
Core hole diameter

Linksgewinde auf Anfrage
Left-hand thread on request

2 - 3 Gewindegänge, Form C
2 - 3 chamfered threads, form C

1.5 - 2 Gewindegänge, Form E
1.5 - 2 chamfered threads, form E

Toleranzklasse ISO 2 6HX
Tolerance class ISO 2 6HX

Toleranzklasse ISO 3 6GX
Tolerance class ISO 3 6GX

Durchgangs- und Sacklöcher < 1 x D
Through / blind holes < 1 x D

Durchgangs- und Sacklöcher < 1.5 x D
Through / blind holes < 1.5 x D

Durchgangs- und Sacklöcher < 2.5 x D
Through / blind holes < 2.5 x D

Durchgangs- und Sacklöcher > 2.5 x D
Through / blind holes > 2.5 x D

Durchgangs- und Sacklöcher < 3 x D
Through / blind holes < 3 x D

DLC-Beschichtung
DLC-coating

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

Für synchrones Gewindeschneiden
For Rigid Tapping

Für klassisches Gewindeschneiden
For Classic Tapping

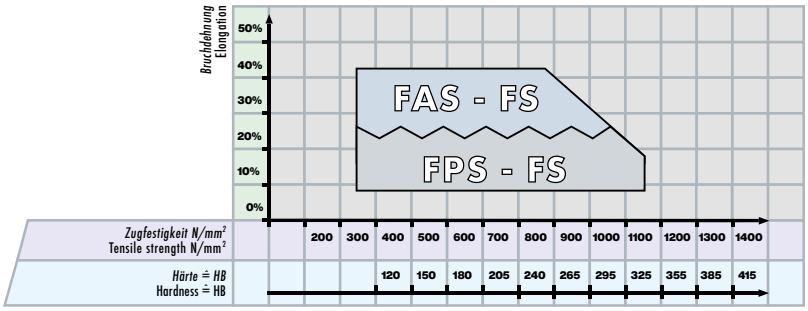
● *Lagerartikel*
Stock item

● *Kurzfristig lieferbar*
Available at short notice

* *Ab Lager lieferbar solange Vorrat*
Available from stock, while stock lasts

ANWENDUNGSTABELLE — APPLICATION CHART

Gewindeformen
Thread forming



DC-Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Dehnung Elongation A (%)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
		22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
		42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
		64	Messing bleifrei	Lead free brass	< 220	< 700	> 15
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	Silber	Silver	-	-	-

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

GEWINDEFORMEN — THREAD FORMING

CLASSIC SYNCHRO

Ab Seite: *From page:*	FS		FPS					FAS		
M	254	255	256	256	256	256	258	259	259	260
MF						262			262	
UNC	263					263			263	
UNF	264					264			264	
G						265			265	

	FS.80VS	FS.80DL	FPS.80DL	FPS.81DL	FPS.80VS	FPS.81VS	FPS.84VS	FAS.80VS	FAS.81VS	FAS.84VS	
	Vc (m/min) Guide Line Ø 1 - 2.8 mm	Vc (m/min) Guide Line Ø 2.8 - 20 mm									
11	12 - 20	20 - 40									11
12	12 - 20	20 - 40									12
13	12 - 20	20 - 30									13
14	12 - 20	20 - 30									14
15	6 - 12	10 - 15									15
16											16
17											17
18											18
21	12 - 20	10 - 20									21
22	6 - 12	10 - 15									22
23	6 - 12	6 - 12									23
24	6 - 12	6 - 12									24
31											31
32											32
41	12 - 20	10 - 20									41
42											42
51	6 - 12	10 - 15									51
52											52
53											53
61	12 - 20	10 - 20									61
62											62
63	12 - 20	20 - 30									63
64	12 - 20	20 - 30									64
71	12 - 20	20 - 40									71
72	12 - 20	20 - 40									72
73	12 - 20	20 - 40									73
74											74
81											81
82											82
83											83
91	12 - 20	20 - 40									91
92	12 - 20	20 - 40									92
93	12 - 20	20 - 40									93
94	12 - 20	20 - 40									94

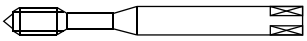
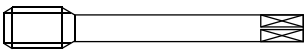
A ***Optimal mit Luft*** **Optimal with air**

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

Bedingt geeignet **Limited**

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

CLASSIC SYNCHRO

					FS		FPS	
Merkmale **Characteristics**					VS E 1.5 x P / C 2.5 x P	DLC E 1.5 x P / C 2.5 x P	DLC	VS
							NEW	
Lochart **Hole type**								
					**FS380VS-5 FS380VS-3**	**FS380DL-5 FS380DL-3**	**FPS380DL-3 FPS381DL-3**	**FPS380VS-3 FPS381VS-3**
M	**6HX**	**ISO DIN 13**	***DIN lang*** **DIN long**	**~DIN 2174**	254	255	256	256
M	**6GX**	**ISO DIN 13**	***DIN lang*** **DIN long**	**~DIN 2174**	254	255		256
M	**6HX**	**ISO DIN 13**	***Extra-lang*** **Extra-long**	**DC**				
MF	**6HX**	**ISO DIN 13**	***DIN lang*** **DIN long**	**~DIN 2174**				262
UNC	**2BX**	**ASME B1.1**	***DIN lang*** **DIN long**	**~DIN 2184-1**	263			263
UNF	**2BX**	**ASME B1.1**	***DIN lang*** **DIN long**	**~DIN 2184-1**	264			264
								**FPS481VS-3**
M	**6HX**	**ISO DIN 13**	***DIN lang*** **DIN long**	**~DIN 2174**				257
M	**6GX**	**ISO DIN 13**	***DIN lang*** **DIN long**	**~DIN 2174**				
M	**6HX**	**ISO DIN 13**	***Extra-lang*** **Extra-long**	**DC**				
MF	**6HX**	**ISO DIN 13**	***DIN lang*** **DIN long**	**~DIN 2174**				262
UNC	**2BX**	**ASME B1.1**	***DIN lang*** **DIN long**	**~DIN 2184-1**				
UNF	**2BX**	**ASME B1.1**	***DIN lang*** **DIN long**	**~DIN 2184-1**				
G (BSP)		**DIN EN ISO 228**	***DIN lang*** **DIN long**	**~DIN 2189**				265

CLASSIC SYNCHRO

FPS			FAS			
VS	VS	VS	VS	VS	VS	VS
FPS384VS-3	**FPS581VS-3**	**FPS584VS-3**	**FAS380VS-3** **FAS381VS-3**	**FAS384VS-3**	**FAS581VS-3**	**FAS584VS-3**
258			259	260		
			259			
	257	258			261	261
			262			
			263			
			264			
FPS484VS-3	**FPS681VS-3**	**FPS684VS-3**	**FAS481VS-3**	**FAS484VS-3**	**FAS681VS-3**	**FAS684VS-3**
258			259	260		
			259			
	257	258			261	261
			262			
			265			

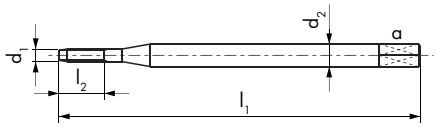
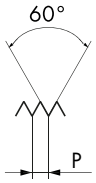
M ISO DIN 13

PM

~DIN 2174

FS FORMING

FS380VS-5	VS	11 12 13 14 21	
FS380VS-3	VS	11 12 13 14 21	

FS380VS-5	FS380VS-3	FS380VS-3	FS380VS-3
			
	E 1.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6GX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	4HX 6HX	Tol.	FS380VS-5 ID	FS380VS-3 ID	FS380VS-3 ID	FS380VS-3 ID	6H + mm
1	0.25	40	3	2.5		0.88	+0.02	● 157171	● 173452			
1.2	0.25	40	3.6	2.5		1.08	+0.02	● 157172	● 173455			
1.4	0.3	40	4.2	2.5		1.25	+0.02	● 157173	● 173458			
1.6	0.35	40	4.8	2.5		1.45	+0.02	● 157174	● 169779			
1.7	0.35	40	5.1	2.5		1.55	+0.02		● 169782			
1.8	0.35	40	5.4	2.5		1.65	+0.02	● 157175	● 169785			
2	0.4	45	8	2.8	2.1	1.8	+0.02			● 157176	● 157180	0.019
2.5	0.45	50	10	2.8	2.1	2.3	+0.02			● 157178	● 157181	0.020
2.6	0.45	50	10	2.8	2.1	2.4	+0.02			● 157179		

≤M1.5 4HX

M ISO DIN 13

PM

~DIN 2174

FS FORMING

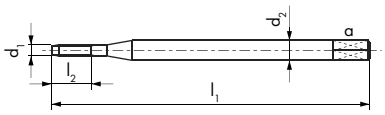
	FS380DL-5	FS380DL-3	FS380DL-3	FS380DL-3
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	E 1.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6GX

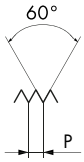
FS380DL-5 DLC

21 22 23 51 61 63 64 71 72 73 91 92 94

FS380DL-3 DLC

21 22 23 51 61 63 64 71 72 73 91 92 94





Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	4HX 6HX	Tol.	ID	ID	ID	ID 6H + mm
1	0.25	40	3	2.5		0.88	+0.02	● 172839	● 173461		
1.2	0.25	40	3.6	2.5		1.08	+0.02	● 172840	● 173464		
1.4	0.3	40	4.2	2.5		1.25	+0.02	● 172841	● 173467		
1.6	0.35	40	4.8	2.5		1.45	+0.02	● 170585	● 170916		
1.7	0.35	40	5.1	2.5		1.55	+0.02		● 172843		
1.8	0.35	40	5.4	2.5		1.65	+0.02	● 172842	● 172844		
2	0.4	45	8	2.8	2.1	1.8	+0.02			● 158814	● 172849 0.019
2.5	0.45	50	10	2.8	2.1	2.3	+0.02			● 172845	● 173246 0.020
2.6	0.45	50	10	2.8	2.1	2.4	+0.02			● 172846	

≤M1.5 4HX

M ISO DIN 13

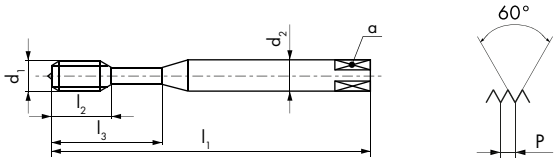
PM

~DIN 2174

FPS FORMING

FPS380DL-3	DLC	63 64 71 72 73 91 92 94	
FPS381DL-3	DLC	63 64 71 72 73 91 92 94	
FPS380VS-3	VS	11 12 13 14	
FPS381VS-3	VS	11 12 13 14 15	

FPS380DL-3	FPS381DL-3	FPS380VS-3	FPS381VS-3
< 1.5 x D	< 2.5 x D	< 1.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	6HX	6HX



Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID	ID	ID
3	0.5	56	12	18	3.5	2.7	2.8	+0.03	● 170553	● 182038	● 166614	● 166616
3.5	0.6	56	13	20	4	3	3.25	+0.03	● 175347	● 182623	● 166620	● 166622
4	0.7	63	14	21	4.5	3.4	3.7	+0.03	● 170554	● 182039	● 166627	● 166629
5	0.8	70	15	25	6	4.9	4.65	+0.03	● 182619	● 178343	● 166635	● 166637
6	1	80	17	30	6	4.9	5.55	+0.05	● 182620	● 171112	● 166644	● 166646
8	1.25	90	20	35	8	6.2	7.4	+0.05	● 182621	● 179144	● 166654	● 166656
10	1.5	100	22	39	10	8	9.3	+0.05	● 182622	● 171113	● 166664	● 166666

											6GX	6GX
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.			ID 6H + mm	ID 6H + mm
3	0.5	56	12	18	3.5	2.7	2.8	+0.03			● 166697 0.020	● 166617 0.020
3.5	0.6	56	13	20	4	3	3.25	+0.03			● 166687 0.021	● 166623 0.021
4	0.7	63	14	21	4.5	3.4	3.7	+0.03			● 166688 0.022	● 166630 0.022
5	0.8	70	15	25	6	4.9	4.65	+0.03			● 166689 0.024	● 166638 0.024
6	1	80	17	30	6	4.9	5.55	+0.05			● 166686 0.026	● 166647 0.026
8	1.25	90	20	35	8	6.2	7.4	+0.05			● 166740 0.028	● 166657 0.028
10	1.5	100	22	39	10	8	9.3	+0.05			● 166739 0.032	● 166667 0.032

M ISO DIN 13

PM

~DIN 2174

DC

DC

FPS FORMING

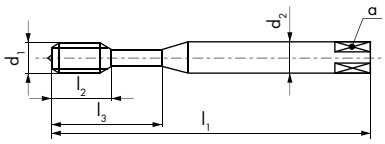
FPS481VS-3	VS	11 12 13 14 15		
FPS581VS-3	EL	VS	11 12 13 14 15	
FPS681VS-3	EL	VS	11 12 13 14 15	

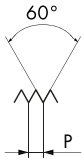
FPS481VS-3		FPS581VS-3	FPS681VS-3

< 2.5 x D

< 2.5 x D

< 2.5 x D





C 2.5 x P

C 2.5 x P

C 2.5 x P

6HX

6HX

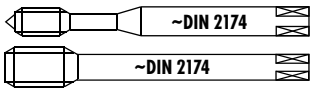
6HX

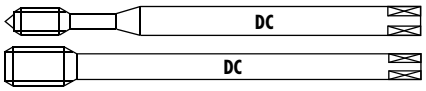
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	6HX	Tol.	ID
12	1.75	110	24	9	7	11.2	+0.05	● 166673
14	2	110	28	11	9	13.1	+0.05	● 166678
16	2	110	30	12	9	15.1	+0.05	● 166683
20	2.5	140	36	16	12	18.85	+0.05	● 168713

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID
3	0.5	100	12	18	3.5	2.7	2.8	+0.03	● 172824	
4	0.7	125	14	21	4.5	3.4	3.7	+0.03	● 172826	
5	0.8	140	15	25	6	4.9	4.65	+0.03	● 172828	
6	1	160	17	30	6	4.9	5.55	+0.05	● 172830	
8	1.25	180	20	35	8	6.2	7.4	+0.05	● 172832	
10	1.5	200	22	39	10	8	9.3	+0.05	● 172834	
12	1.75	224	24		9	7	11.2	+0.05		● 172836

M ISO DIN 13

PM





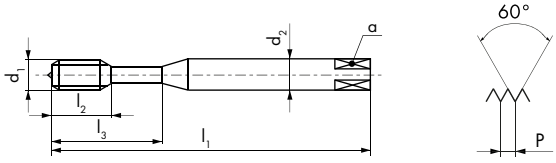
FPS FORMING

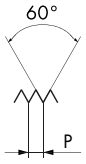
FPS384VS-3			VS	11 12 13 14 15	FPS384VS-3
FPS484VS-3			VS	11 12 13 14 15	FPS484VS-3
FPS584VS-3			EL VS	11 12 13 14 15	FPS584VS-3
FPS684VS-3			EL VS	11 12 13 14 15	FPS684VS-3

< 3 x D

C 2.5 x P

6HX



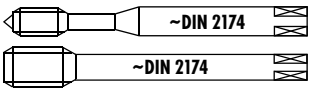


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID
3	0.5	56	12	18	3.5	2.7	2.8	+0.03	● 166737	
4	0.7	63	14	21	4.5	3.4	3.7	+0.03	● 166738	
5	0.8	70	15	25	6	4.9	4.65	+0.03	● 166640	
6	1	80	17	30	6	4.9	5.55	+0.05	● 166650	
8	1.25	90	20	35	8	6.2	7.4	+0.05	● 166660	
10	1.5	100	22	39	10	8	9.3	+0.05	● 166670	
12	1.75	110	24		9	7	11.2	+0.05		● 166675
14	2	110	28		11	9	13.1	+0.05		● 166680
16	2	110	30		12	9	15.1	+0.05		● 166685

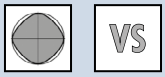
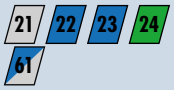
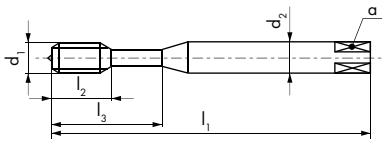
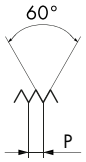
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID
3	0.5	100	12	18	3.5	2.7	2.8	+0.03	● 172763	
4	0.7	125	14	21	4.5	3.4	3.7	+0.03	● 172766	
5	0.8	140	15	25	6	4.9	4.65	+0.03	● 172769	
6	1	160	17	30	6	4.9	5.55	+0.05	● 172772	
8	1.25	180	20	35	8	6.2	7.4	+0.05	● 172775	
10	1.5	200	22	39	10	8	9.3	+0.05	● 172778	
12	1.75	224	24		9	7	11.2	+0.05		● 172781

M ISO DIN 13

PM



FAS FORMING

	FAS380VS-3		FAS381VS-3	FAS481VS-3
				
					

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID	ID
3	0.5	56	12	18	3.5	2.7	2.8	+0.03	● 170603	● 166612	
3.5	0.6	56	13	20	4	3	3.25	+0.03	● 170605	● 166618	
4	0.7	63	14	21	4.5	3.4	3.7	+0.03	● 170607	● 166624	
5	0.8	70	15	25	6	4.9	4.65	+0.03	● 170609	● 166632	
6	1	80	17	30	6	4.9	5.55	+0.05	● 170611	● 166641	
8	1.25	90	20	35	8	6.2	7.4	+0.05	● 170616	● 166651	
10	1.5	100	22	39	10	8	9.3	+0.05	● 170618	● 166661	
12	1.75	110	24		9	7	11.2	+0.05			● 166671
14	2	110	28		11	9	13.1	+0.05			● 166676
16	2	110	30		12	9	15.1	+0.05			● 166681
20	2.5	140	36		16	12	18.85	+0.05			● 168711

										6GX		6GX	
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.		ID	6H + mm	ID	6H + mm
3	0.5	56	12	18	3.5	2.7	2.8	+0.03		● 166703	0.020		
3.5	0.6	56	13	20	4	3	3.25	+0.03		● 166704	0.021		
4	0.7	63	14	21	4.5	3.4	3.7	+0.03		● 166705	0.022		
5	0.8	70	15	25	6	4.9	4.65	+0.03		● 166706	0.024		
6	1	80	17	30	6	4.9	5.55	+0.05		● 166707	0.026		
8	1.25	90	20	35	8	6.2	7.4	+0.05		● 166708	0.028		
10	1.5	100	22	39	10	8	9.3	+0.05		● 166709	0.032		
12	1.75	110	24		9	7	11.2	+0.05				● 166710	0.034
14	2	110	28		11	9	13.1	+0.05				★ 166711	0.038
16	2	110	30		12	9	15.1	+0.05				● 166712	0.038

M ISO DIN 13

PM

~DIN 2174

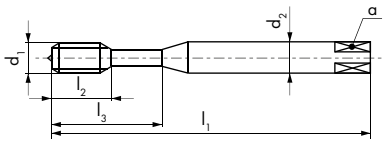
~DIN 2174

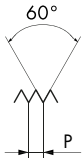
FAS FORMING

FAS384VS-3	FAS484VS-3		

FAS384VS-3 — VS — 21 22 23 24 41 51 61

FAS484VS-3 — VS — 21 22 23 24 41 51 61

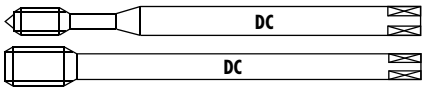




Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID
3	0.5	56	12	18	3.5	2.7	2.8	+0.03	● 166741	
4	0.7	63	14	21	4.5	3.4	3.7	+0.03	● 166742	
5	0.8	70	15	25	6	4.9	4.65	+0.03	● 166690	
6	1	80	17	30	6	4.9	5.55	+0.05	● 166691	
8	1.25	90	20	35	8	6.2	7.4	+0.05	● 166692	
10	1.5	100	22	39	10	8	9.3	+0.05	● 166693	
12	1.75	110	24		9	7	11.2	+0.05		● 166694
14	2	110	28		11	9	13.1	+0.05		● 166695
16	2	110	30		12	9	15.1	+0.05		● 166696

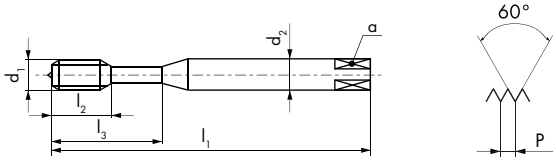
M ISO DIN 13

PM



FAS FORMING

FAS581VS-3	EL	VS	21 22 23 24 41 51 61	
FAS681VS-3	EL	VS		
FAS584VS-3	EL	VS	21 22 23 24 41 51 61	
FAS684VS-3	EL	VS		

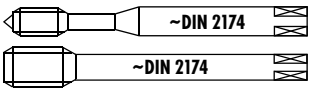


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	FAS581VS-3 ID	FAS681VS-3 ID	FAS584VS-3 ID	FAS684VS-3 ID
3	0.5	100	12	18	3.5	2.7	2.8	+0.03	● 172784		● 172805	
4	0.7	125	14	21	4.5	3.4	3.7	+0.03	● 172787		● 172808	
5	0.8	140	15	25	6	4.9	4.65	+0.03	● 172790		● 172811	
6	1	160	17	30	6	4.9	5.55	+0.05	● 172793		● 172814	
8	1.25	180	20	35	8	6.2	7.4	+0.05	● 172796		● 172817	
10	1.5	200	22	39	10	8	9.3	+0.05	● 172799		● 172820	
12	1.75	224	24		9	7	11.2	+0.05		● 172802		● 172822

	FAS581VS-3	FAS681VS-3	FAS584VS-3	FAS684VS-3
	< 2.5 x D	< 2.5 x D	< 3 x D	< 3 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX

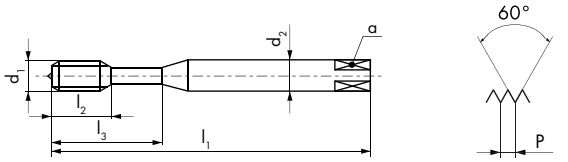
MF ISO DIN 13

PM



FPS FAS FORMING

FPS381VS-3	VS	11 12 13 14 15	
FPS481VS-3	VS	11 12 13 14 15	
FAS381VS-3	VS	21 22 23 24 41 51 61	
FAS481VS-3	VS	21 22 23 24 41 51 61	



Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.
4	0.5	63	14	21	4.5	3.4	3.8	+0.03
5	0.5	70	15	25	6	4.9	4.8	+0.03
6	0.5	80	17	30	6	4.9	5.8	+0.03
6	0.75	80	17	30	6	4.9	5.65	+0.03
8	0.75	90	20	35	8	6.2	7.65	+0.03
8	1	90	20	35	8	6.2	7.55	+0.05
10	1	100	22	39	10	8	9.55	+0.05
12	1	100	19		9	7	11.55	+0.05
14	1.5	100	24		11	9	13.3	+0.05
16	1.5	100	26		12	9	15.3	+0.05

FPS381VS-3	FPS481VS-3	FAS381VS-3	FAS481VS-3
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
6HX	6HX	6HX	6HX
ID	ID	ID	ID
● 166631		● 166625	
● 166639		● 166633	
● 166699		● 166698	
● 166649		● 166642	
● 166702		● 166700	
● 166659		● 166652	
● 166669		● 166662	
	● 166674		● 166672
	● 166679		● 166677
	● 166684		● 166682

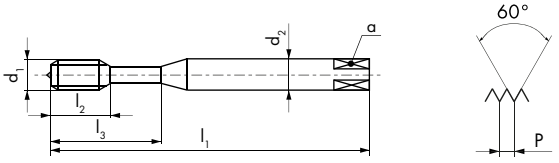
UNC ASME B1.1

PM

~DIN 2184-1

FS FPS FAS FORMING

FS380VS-3	VS	11 12 13 14 21	
FPS381VS-3	VS	11 12 13 14 15	
FAS381VS-3	VS	21 22 23 24 41 51 61	



	FS380VS-3		FPS381VS-3	FAS381VS-3
	2BX		2BX	2BX

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	2BX	Tol.	ID	ID	ID
2	56	2.18	45	9		2.8	2.1	1.95	+0.02	● 157285		
4	40	2.84	56	12	18	3.5	2.7	2.55	+0.03		● 170063	● 170065
6	32	3.5	56	13	20	4	3	3.15	+0.03		● 166713	● 166725
8	32	4.16	63	14	21	4.5	3.4	3.8	+0.03		● 166714	● 166726
10	24	4.82	70	15	25	6	4.9	4.35	+0.05		● 166715	● 166727
1/4	20	6.35	80	17	30	7	5.5	5.75	+0.05		● 166716	● 166728

UNF ASME B1.1

PM

~DIN 2184-1

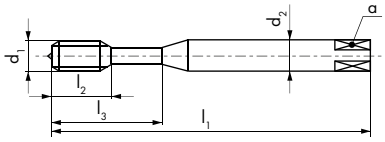
FS FPS FAS FORMING

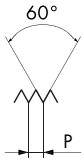
	FS380VS-5		FPS381VS-3	FAS381VS-3
	< 2.5 x D		< 2.5 x D	< 2.5 x D
	E 1.5 x P		C 2.5 x P	C 2.5 x P
	2BX		2BX	2BX
Ø" d_1 UNF	ID		ID	ID
0 (80 TPI, 1.52 mm, 40 mm, 4.6 mm, 2.5 mm, 1.37 mm, +0.02)	● 161498			
10 (32 TPI, 4.82 mm, 70 mm, 15 mm, 25 mm, 6 mm, 4.9 mm, 4.45 mm, +0.03)			● 166718	● 166730
1/4 (28 TPI, 6.35 mm, 80 mm, 17 mm, 30 mm, 7 mm, 5.5 mm, 5.95 mm, +0.05)			● 166719	● 166731
5/16 (24 TPI, 7.93 mm, 90 mm, 20 mm, 35 mm, 8 mm, 6.2 mm, 7.45 mm, +0.05)			● 166720	● 166732

FS380VS-5 VS — 11 12 13 14 21

FPS381VS-3 VS — 11 12 13 14 15

FAS381VS-3 VS — 21 22 23 24 41 51 61





$Ø" d_1$ UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		Tol.	ID	ID	ID
0	80	1.52	40	4.6		2.5		1.37	+0.02	● 161498		
10	32	4.82	70	15	25	6	4.9	4.45	+0.03		● 166718	● 166730
1/4	28	6.35	80	17	30	7	5.5	5.95	+0.05		● 166719	● 166731
5/16	24	7.93	90	20	35	8	6.2	7.45	+0.05		● 166720	● 166732

G DIN EN ISO 228 (BSP)

PM

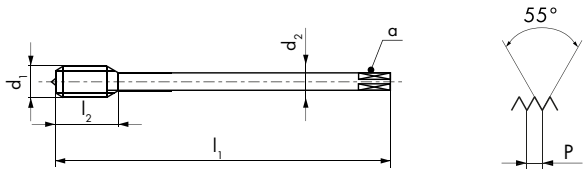
~DIN 2189

FPS FAS FORMING

FPS481VS-3		FAS481VS-3	
< 2.5 x D		< 2.5 x D	
C 2.5 x P		C 2.5 x P	

FPS481VS-3 — VS — 11 12 13 14 15

FAS481VS-3 — VS — 21 22 23 24 41 51 61



Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		Tol.	ID	ID
1/8	28	9.72	90	22	7	5.5	9.25	+0.05	● 166721	● 166733
1/4	19	13.15	100	20	11	9	12.5	+0.05	● 166722	● 166734
3/8	19	16.66	100	20	12	9	16	+0.05	● 166723	● 166735
1/2	14	20.95	125	22	16	12	20	+0.05	● 166724	● 166736

SCHNEIDEISEN MIT SCHÄLANSCHNITT

Der Schälanschnitt bewirkt ein freies Abfliessen der Späne nach vorne und eine Verringerung des Schnittmomentes. Spänestauungen in den Spanlöchern werden dadurch vermieden. Das Ergebnis ist eine verbesserte Oberflächengüte bei den geschnittenen Gewinden und eine höhere Standzeit des Werkzeuges.

Schneideisen, die auf Maschinen eingesetzt werden, müssen deshalb mit Schälanschnitt bestellt werden.

DIES WITH SPIRAL ENTRY

A spiral entry results in a free flow of chips ahead of the die and a reduction in the cutting torque. Blocking of the clearance holes by chips is avoided. This results in an improved surface finish on the cut threads and a longer die life.

Hence dies for machine use must be ordered with spiral entry.

HOCHLEISTUNGS-SCHNEIDEISEN
HIGH PERFORMANCE THREAD CUTTING DIES

N5110/N5120

mit Schälanschnitt ab Ø 3 mm
with spiral entry from Ø 3 mm

Runde Schneideisen aus HSS, nach DIN EN Norm
für Hand- oder Maschinengebrauch
- *Für die Bearbeitung von Stahl bis 800 N/mm2*
- *Verschiedene Versionen zum Schneiden unterschiedlichster Werkstoffe*

Round dies in HSS, as per DIN EN standards
for machine and manual use
- For machining steels up to 800 N/mm2
- Different versions for cutting a wide range of materials

Z5120

mit Schälanschnitt ab Ø 2 mm
with spiral entry from Ø 2 mm

Runde Schneideisen aus HSSE, nach DIN EN Norm
- *Feine Spanaufteilung durch höhere Schneidstollenzahl und längeren Anschnitt 2 x P*
- *Für die Bearbeitung von rost- und säurebeständigen Stählen, Vergütungsstählen, Einsatzstählen usw. bis 1'200N/mm2 und kurzspanende ALU-Legierungen*

Round dies in HSSE, as per DIN EN standards
- Fine chips due to more clearance holes and thus more cutting edges, and the extension of the chamfer to 2 x P
- For machining stainless steels, heat-treatable steels, case-hardening steels etc. up to 1'200 N/mm2 and short-chipping ALU alloys

Z5120 LL Long Life

mit Schälanschnitt ab Ø 2 mm
with spiral entry from Ø 2 mm

Runde Schneideisen aus HSSE (ASP), nach DIN EN Norm
- *Feinste Spanaufteilung durch höchste Schneidstollenzahl und längeren Anschnitt 2.25 x P*
- *Für Grossserien*
- *Long Life steht für enorme Standzeit*
- *Für die Bearbeitung von rost- und säurebeständigen Stählen, Vergütungsstählen, Einsatzstählen usw. bis 1'200 N/mm2 und kurzspanende ALU-Legierungen*

Round dies in HSSE (ASP), as per DIN EN standards
- Very fine chips due to maximum number of clearance holes and thus still more cutting edges, and the extension of the chamfer to 2.25 x P
- For the processing of large series
- Exceptionally long die life
- For machining stainless steels, heat-treatable steels, case-hardening steels etc. up to 1'200 N/mm2 and short-chipping ALU alloys

MS5120

mit Schälanschnitt
with spiral entry

Runde Schneideisen aus HSS, nach DIN EN Norm
- *Mit erweiterten Spanlöchern für bessere Spanabfuhr*
- *Für die Bearbeitung von kurzspanendem Messing*

Round dies in HSS, as per DIN EN standards
- With enlarged clearance holes to prevent chips crowding
- For the machining of short-chipping brass

N5220 Z5220 MS5220

mit Schälanschnitt
with spiral entry

Automaten-Schneideisen aus HSS (Z = HSSE), mit 2 Aufschraublöchern
- *Anwendungsgebiet entsprechend Typ N5120, MS5120 und Z5120*
- *Vorteil: durch die geringere Massenträgheit des Schneideisenhalters sind höhere Drehzahlen / Standzeiten möglich*

Button dies for Swiss automatics, in HSS (Z = HSSE), with 2 securing holes
- Application area according to type N5120, MS5120 and Z5120
- Advantage: the low inertia of the die holder permits higher spindle speeds and extends die life

N5310

Sechskant-Schneideisen aus HSS, *Baumasse nach DIN 382*
- *Zum Nachschneiden und Reparieren von beschädigten Gewinden oder zum Schneiden an schwer zugänglichen Stellen*

Hexagon die nuts in HSS, general dimensions as per DIN 382
- For recutting and reclaiming damaged threads or for cutting threads in difficult locations

N5420

mit Schälanschnitt ab Ø 3 mm
with spiral entry from Ø 3 mm

Glockenform-Schneideisen aus HSS
- *Vorteil: freies Abfliessen der Späne und verbesserte Kühl-Schmiermittelzufuhr durch offene Spanräume, auch wenn nahe am Bund geschnitten wird*

Bell form type thread cutting dies in HSS
- Advantage: free chip flow and improved coolant supply thanks to the open clearance holes, even when cutting threads close to shoulders

ANWENDUNGSTABELLE FÜR SCHNEIDEISEN
APPLICATION CHART FOR CUTTING DIES

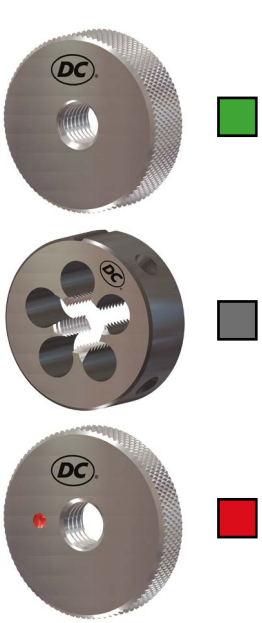
Werkstoffbezeichnung	*Werkstoffnummer*	*Schnittgeschwindigkeit m/min (Richtwerte)*	*Kühl-Schmiermittel*	*Spanwinkel*	*Schneideisentyp*
Allgemeine Baustähle	St37-2, St50-2	8 - 12	*Schneidöl*	17 - 22°	N5...
Automatenstähle	9SMn28, 9SMnPb28	10 - 14	*Schneidöl*	17 - 22°	N5...
Einsatzstähle	C15, Ck15, 16MnCr5	6 - 10	*Schneidöl / Spezial-Schneidöl*	17 - 22°	Z5... / Z5... LL
Vergütungsstähle	C35Pb, C45	5 - 8	*Schneidöl / Spezial-Schneidöl*	13 - 18°	Z5... / Z5... LL
Rost- u. säurebeständige Stähle	X12CrMoS17, X12CrNiS188	4 - 6	*Spezial-Schneidöl*	13 - 18°	Z5... / Z5... LL
Messing kurzspanend, Ms 58	CuZn39Pb2, CuZn40Pb2	20 - 30	*Schneidöl*	6 - 11°	MS5...
Messing langspanend, Ms 60	CuZn20, CuZn37	12 - 18	*Schneidöl*	10 - 15°	N5...
Alu-Legierungen, kurzspanend	GD-AlSi8Cu3, GD-AlSi12	8 - 12	*Spezial-Schneidöl, Petrolium*	18 - 23°	Z5...
Reintitan	Ti2	5 - 8	*Spezial-Schneidöl*	19 - 24°	Z5... / Z5... LL

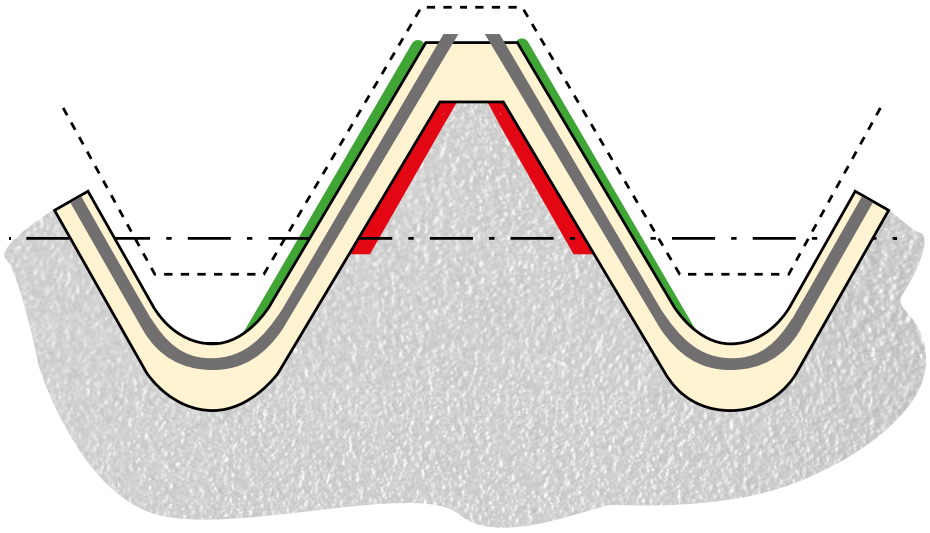
Schneideisen mit jeweils speziell angepasstem Spanwinkel für Grauguss, Messing bleifrei, Bronze, Rotguss, Kupfer, Alu-Legierungen langspanend sind als Spezialanfertigung lieferbar.
Auf Wunsch können wir auch Schneideisen in beschichteter Ausführung liefern. Preis und Lieferfrist auf Anfrage.

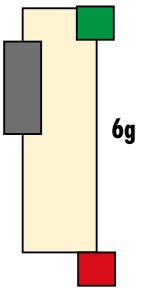
Material designation	**Material Number**	**Cutting speed m/min (guide line)**	**Cutting fluid**	**Rake angle**	**Type of die**
General engineering steels	St37-2, St50-2	8 - 12	Cutting oil	17 - 22°	N5...
Free-cutting steels	9SMn28, 9SMnPb28	10 - 14	Cutting oil	17 - 22°	N5...
Case hardening steels	C15, Ck15, 16MnCr5	6 - 10	Cutting oil / Special cutting oil	17 - 22°	Z5... / Z5... LL
Heat-treatable steels	C35Pb, C45	5 - 8	Cutting oil / Special cutting oil	13 - 18°	Z5... / Z5... LL
Stainless steels	X12CrMoS17, X12CrNiS188	4 - 6	Special cutting oil	13 - 18°	Z5... / Z5... LL
Short chip brass Ms 58	CuZn39Pb2, CuZn40Pb2	20 - 30	Cutting oil	6 - 11°	MS5...
Long chip brass Ms 60	CuZn20, CuZn37	12 - 18	Cutting oil	10 - 15°	N5...
Al-alloyed, short-chipping	GD-AlSi8Cu3, GD-AlSi12	8 - 12	Spezial cutting oil, Paraffin	18 - 23°	Z5...
Pure titanium	Ti2	5 - 8	Special cutting oil	19 - 24°	Z5... / Z5... LL

Cutting dies with specially adapted rake angle for grey cast iron, lead-free brass, bronze, gunmetal, copper and long-chipping aluminium alloys are available as special execution.
On request, we can also supply dies in a coated version. Price and delivery time on request.

TOLERANZEN FÜR M- UND MF-GEWINDE
TOLERANCES FOR M AND MF THREADS







KODIERUNG — CODIFICATION

DC-Schneideisen

Beispiel

Z	51	20	LL	SP

Normale Werkstoffe	**N**			
Messing kurzspanend	**MS**			
Zähe Werkstoffe	**Z**			
*Runde Schneideisen**		**51**		
Automaten-Schneideisen, mit 2 Aufschraublöchern		**52**		
Sechskant-Schneideisen		**53**		
Glocken-Schneideisen		**54**		
Geschlossen, Form B			**10**	
Geschlossen, Form B, mit Schälanschnitt,			**20**	
Long Life - Hochleistungsschneideisen				**LL**
Spezialausführung				**SP**

**Für Maschinengebrauch Schneideisen mit Schälanschnitt verwenden.*

DC Dies

Example

Z	51	20	LL	SP

Normal materials	**N**			
Short chip brass	**MS**			
Tough materials	**Z**			
Round dies*		**51**		
Button dies for automatic lathes, with 2 securing holes		**52**		
Hexagon die nuts		**53**		
Bell form dies		**54**		
Solid, form B			**10**	
Solid, form B, with spiral entry			**20**	
Long Life - High performance dies				**LL**
Special execution				**SP**

*For production, use dies with spiral entry.

Runde Schneideisen aus HSS, nach DIN EN Norm

DIN EN 22568: für M-, MF-, UNC-, UNF-, UNEF, UN-, UNS- und W-Gewinde
≈ DIN EN 22568: für kegeliges Amerikanisches Rohrgewinde NPT gemäss ASME B1.20.1 und NPTF gemäss ANSI B1.20.3
≈ DIN EN 22568: für TR-Gewinde gemäss DIN 103
DIN EN 24231: für G-Gewinde (BSP) gemäss DIN EN ISO 228
≈ DIN EN 24230: für kegeliges Whitworth-Rohrgewinde R gemäss DIN EN 10226, ISO 7-1
≈ DIN 40434 und DIN EN 22568: für PG-Gewinde (Stahlpanzerrohr-Gewinde) nach DIN 40430

Round dies in HSS, as per DIN EN standards

DIN EN 22568: for M-, MF-, UNC-, UNF-, UNEF, UN-, UNS- and W (BSW) threads
≈ DIN EN 22568: for Amercian standard taper pipe thread NPT as per ASME B1.20.1 and NPTF as per ANSI B1.20.3
≈ DIN EN 22568: for TR threads as per DIN 103
DIN EN 24231: for G threads (BSP) as per DIN EN ISO 228
≈ DIN EN 24230: for Tapered Whitworth pipe thread R as per DIN EN 10226, ISO 7-1
≈ DIN 40434 and DIN EN 22568: for PG threads (steel conduit thread) as per DIN 40430

N: *HSS, Anschnittlänge 1.75 x P*
MS: *HSS, geläppt, Anschnittlänge 1.25 x P*
Z: *HSSE, nitriert ab Ø 3 mm (P = 0.5 mm), Anschnittlänge 2 x P, mit Schälanschnitt ab Ø 2 mm*
Z-LL: *ASP, nitriert ab Ø 3 mm (P = 0.5 mm), Anschnittlänge 2.25 x P, mit Schälanschnitt ab Ø 2 mm*

N: HSS, chamfer length 1.75 x P
MS: HSS, lapped, chamfer length 1.25 x P
Z: HSSE, nitrided from Ø 3 mm (P = 0.5 mm), chamfer length 2 x P, with spiral entry from Ø 2 mm
Z-LL: ASP, nitrided from Ø 3 mm (P = 0.5 mm), chamfer length 2.25 x P, with spiral entry from Ø 2 mm

Inhaltsverzeichnis — Runde-, Automaten-, Sechskant- und Glocken-Schneideisen
Directory — Round dies, button dies for Swiss automatics, hexagon die nuts and bell form dies

		N		MS	Z		N	Z
Merkmale **Characteristics**		HSS 1.75 x P	HSS 1.75 x P ≥ Ø 3	HSS 1.25 x P ≥ Ø 3	HSSE 2 x P ≥ Ø 2 NI	HSSE 2.25 x P ≥ Ø 2 NI	HSS 1.75 x P ≥ Ø 3	HSSE 2 x P ≥ Ø 2 NI
Typ **Type**		**N5110**	**N5120**	**MS5120**	**Z5120**	**Z5120LL**	**N5220**	**Z5220**
M 6g	**ISO DIN 13**	272	272		273	273	286	286
M 6e	**ISO DIN 13**		272				286	
M 6g LH	**ISO DIN 13**		272					
MF 6g	**ISO DIN 13**	274	274 - 276		274 - 275		287	
MF 6e	**ISO DIN 13**		274					
MF 6g LH	**ISO DIN 13**		274 - 276					
UNC	**ASME B1.1**	277	277					
UNF	**ASME B1.1**	278	278					
UNEF	**ASME B1.1**		279					
UN	**ASME B1.1**		279					
UNS	**ASME B1.1**		279					
G (BSP)	**DIN EN ISO 228**		280	281	281			
G (BSP) LH	**DIN EN ISO 228**		280					
G (BSP) -0.1mm	**DIN EN ISO 228**			281				
R (BSPT)	**DIN EN 10226**		282					
NPT	**ASME B1.20.1**		283					
NPTF	**ANSI B1.20.3**		283					
PG	**DIN 40430**		284					
TR	**DIN 103**		284					
W (BSW)	**BS 84**		285					
W (BSW) LH	**BS 84**		285					

N	
HSS 1.75 x P	HSS 1.75 x P ≥ Ø 3
N5310	**N5420**
288	289
288	
289	
289	

Piktogramme - Pictographs

HSS
HSS
HSS

HSSE
HSSE
HSSE

1.25 x P
1.25 Gewindegänge
1.25 chamfered threads

1.75 x P
1.75 Gewindegänge
1.75 chamfered threads

2 x P
2 Gewindegänge
2 chamfered threads

≥ Ø 3
Schälanschnitt ab Ø 3 mm
Spiral entry from Ø 3 mm

≥ Ø 3
Schälanschnitt, beidseitig, ab Ø 3 mm
Spiral entry on both sides from Ø 3 mm

Anzahl Spannuten
Number of flutes

Vordrehdurchmesser
Turned diameters

NI
Nitriert (d1 ≥ 3 mm, P ≥ 0.5 mm)
Nitrided (d1 ≥ 3 mm, P ≥ 0.5 mm)

Schneideisen mit 2 Aufschraublöchern
Die with 2 securing holes

6g
Toleranz 6g
Tolerance 6g

6e
Toleranz 6e
Tolerance 6e

MC
Toleranz "Medium Class"
Tolerance "Medium Class"

A
Toleranz A
Tolerance A

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

LH
Linksgewinde
Left-hand thread

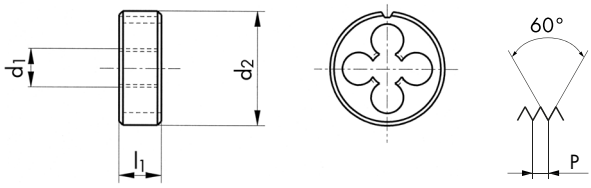
M ISO DIN 13

HSS

DIN EN 22568

N5110		11 / 12	
N5120	≥Ø3	11 / 12	
N5120 LH	≥Ø3	LH	11 / 12
N5120	≥Ø3		11 / 12

N5110	N5120	N5120 LH	N5120



1.75 x P	1.75 x P	1.75 x P	1.75 x P
6g	6g	6g	6e

Ø d_1 M	P mm	d_2 mm	l_1 mm	6g	LH / 6e	→6g←	→6e←	ID	ID	ID	ID 6g - mm
1	0.25	16	5	3		0.97		• 103851			
1.1	0.25	16	5	3		1.07		• 124659			
1.2	0.25	16	5	3		1.17		• 103852			
1.4	0.3	16	5	3		1.36		• 103853			
1.6	0.35	16	5	3		1.54		• 103855			
1.7	0.35	16	5	3		1.64		• 103856			
1.8	0.35	16	5	3		1.74		• 103857			
2	0.4	16	5	3		1.93		• 103864			
2.2	0.45	16	5	3		2.13		• 103867			
2.3	0.4	16	5	3		2.23		• 103869			
2.5	0.45	16	5	3		2.43		• 103872			
2.6	0.45	16	5	3		2.53		• 103876			
3	0.5	20	5	3	4	2.92	2.9	• 103879	• 104067	• 104068	• 104066 0.030
3.5	0.6	20	5	3	4	3.41		• 103880	• 104071	• 104072	
4	0.7	20	5	3	4	3.91	3.87	• 103881	• 104114	• 104115	• 104113 0.035
4.5	0.75	20	7	4		4.4		* 103882	• 104117		
5	0.8	20	7	4	4	4.9	4.87	• 103883	• 104146	• 104147	• 104145 0.035
5.5	0.9	20	7	4		5.4		* 103884			
6	1	20	7	4	4	5.88	5.85	• 103885	• 104165	• 104166	• 104164 0.035
7	1	25	9	4	4	6.88		• 103886	• 104174	• 104175	
8	1.25	25	9	4	4	7.87	7.83	• 103887	• 104186	• 104187	• 104185 0.035
9	1.25	25	9	4		8.87		* 103888	• 104191		
10	1.5	30	11	4	4	9.85	9.82	• 103858	• 103953	• 103954	• 103952 0.035
12	1.75	38	14	4	4	11.83	11.8	• 103859	• 103973	• 103974	• 103972 0.035
14	2	38	14	4	4	13.82		• 103860	• 103989	• 103990	
16	2	45	18	4	4	15.82		• 103861	• 104003	• 104004	
18	2.5	45	18	5		17.79			• 104015		
20	2.5	45	18	5	5	19.79		• 103878	• 104028	• 104029	
22	2.5	55	22	5		21.79			• 104035		
24	3	55	22	5	5	23.76			• 104043	• 104044	
27	3	65	25	5		26.76			• 104058		
30	3.5	65	25	6	6	29.73			• 104079	• 104080	
33	3.5	65	25	6		32.73			• 104089		
36	4	65	25	7		35.7			• 104100		

≤M1.4 6h

M ISO DIN 13

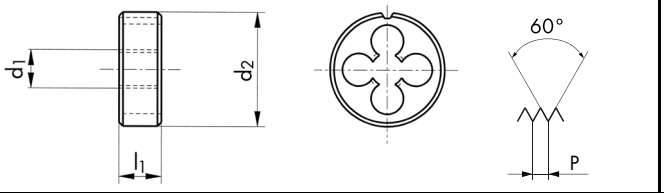
HSSE

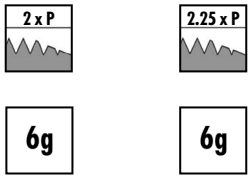
DIN EN 22568

Z5120 ≥Ø2 NI 13 14 21

Z5120 LL ≥Ø2 NI 13 14 15 21

Z5120	Z5120 LL		





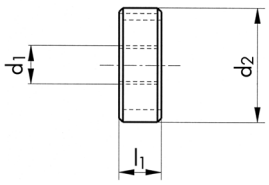
Ø d_1 M	P mm	d_2 mm	l_1 mm	Z5120	Z5120LL	→6g←	ID	ID
2	0.4	16	3.5	4	4	1.93	• 125269	• 105115
2.5	0.45	16	5	4	4	2.43	• 104779	• 105116
2.6	0.45	16	5	4		2.53	* 104780	
3	0.5	20	5	4	5	2.92	• 104788	• 105117
3.5	0.6	20	5	4		3.41	• 104789	
4	0.7	20	5	4	5	3.91	• 104790	• 105118
5	0.8	20	7	4	5	4.9	• 104792	• 105119
6	1	20	7	4	5	5.88	• 104795	• 105120
7	1	25	9	4		6.88	* 111424	
8	1.25	25	9	5	6	7.87	• 104798	• 105121
10	1.5	30	11	5	6	9.85	• 104767	• 105122
12	1.75	38	14	5	6	11.83	• 104770	• 105123
14	2	38	14	5		13.82	• 104773	
16	2	45	18	5		15.82	• 104776	
18	2.5	45	18	5		17.79	• 104778	
20	2.5	45	18	5		19.79	• 104783	
24	3	55	22	6		23.76	• 104787	

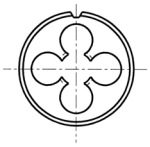
MF ISO DIN 13

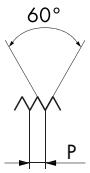
N HSS | Z HSSE | DIN EN 22568

N5120	≥Ø3		11 / 12
N5120 LH	≥Ø3	LH	11 / 12
N5120	≥Ø3		11 / 12
Z5120	≥Ø2	NI	13 / 14 / 21

N5120	N5120 LH	N5120	Z5120







								N5120	N5120 LH	N5120	Z5120
								1.75 x P	1.75 x P	1.75 x P	2 x P
								6g	6g	6e	6g
Ø d_1 MF	P mm	d_2 mm	l_1 mm	N	Z	→6g←	→6e←	ID	ID	ID 6g - mm	ID
*2	0.25	16	5	4		1.93		● 103863			
*2.5	0.35	16	5	4		2.44		● 103871			
3	0.35	20	5	4		2.94		● 104064			
3.5	0.35	20	5	4		3.44		● 104069			
4	0.35	20	5	4		3.94		● 104108			
4	0.5	20	5	4		3.93		● 104110			
4.5	0.5	20	5	4		4.43		● 104116			
5	0.5	20	5	4	4	4.93	4.9	● 104141	● 104142	● 104140 0.030	● 104791
5	0.75	20	7	4		4.9		● 104143			
5.5	0.5	20	5	4		5.43		● 104148			
6	0.5	20	5	4	4	5.93		● 104159	● 104160		● 104793
6	0.75	20	7	4	4	5.9		● 104162	● 104163		● 104794
7	0.5	25	9	4		6.93		● 104169			
7	0.75	25	9	4		6.9		● 104171			
8	0.5	25	9	5		7.93		● 104177			
8	0.75	25	9	4	4	7.9		● 104180			● 104796
8	1	25	9	4	4	7.88	7.85	● 104183	● 104184	● 104182 0.035	● 104797
9	0.5	25	9	5		8.93		● 104188			
9	0.75	25	9	5		8.9		● 104189			
9	1	25	9	5		8.88		● 104190			
10	0.5	30	11	5		9.93		● 103942			
10	0.75	30	11	5	5	9.9		● 103945			● 104765
10	1	30	11	5	5	9.88	9.85	● 103948	● 103949	● 103947 0.035	● 104766
10	1.25	30	11	4		9.86		● 103950	● 103951		
11	0.75	30	11	5		10.9		● 103956			
11	1	30	11	5		10.88		● 103957			
11	1.25	30	11	5		10.86		● 103958			
12	0.5	38	10	5		11.93		● 103960			
12	0.75	38	10	5		11.9		● 103962			
12	1	38	10	5	5	11.88	11.85	● 103965	● 103966	● 103964 0.035	● 104768
12	1.25	38	10	4		11.86		● 103967	● 103968		
12	1.5	38	10	4	5	11.85		● 103970	● 103971		● 104769
13	1	38	10	5		12.88		● 103976			

* N5110

P 0.25 — 6h

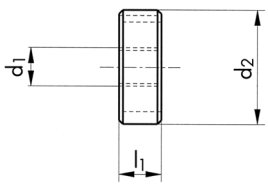
MF ISO DIN 13

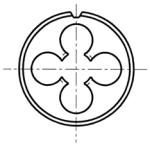
N HSS | Z HSSE | DIN EN 22568

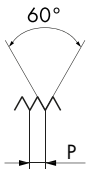
N5120 ≥Ø3 — 11 / 12

N5120 LH ≥Ø3 — LH — 11 / 12

Z5120 ≥Ø2 — NI — 13 / 14 / 21







Ø d_1 MF	P mm	d_2 mm	l_1 mm	N	Z	→6g←	N5120 ID	N5120 LH ID	Z5120 ID
							1.75 x P	1.75 x P	2 x P
							6g	6g	6g
14	0.5	38	10	5		13.93	● 103977		
14	0.75	38	10	5		13.9	● 103979		
14	1	38	10	5	5	13.88	● 103981	● 103982	● 104771
14	1.25	38	10	5		13.86	● 103983		
14	1.5	38	10	5	5	13.85	● 103986	● 103987	● 104772
15	1	38	10	5		14.88	● 103991		
15	1.5	38	10	5		14.85	● 103992		
16	1	45	14	5	5	15.88	● 103996	● 103997	● 104774
16	1.25	45	14	5		15.86	● 103998		
16	1.5	45	14	5	5	15.85	● 104000	● 104001	● 104775
17	1	45	14	5		16.88	● 104005		
18	1	45	14	5		17.88	● 104008		
18	1.5	45	14	5		17.85	● 104011	● 104012	
18	2	45	14	5		17.82	● 104013		
19	1	45	14	6		18.88	● 104017		
20	1	45	14	6	6	19.88	● 104021	● 104022	● 104781
20	1.5	45	14	6	6	19.85	● 104024	● 104025	● 104782
20	2	45	14	6		19.82	● 104026		
21	1	45	14	7		20.88	● 111386		
22	1	55	16	6		21.88	● 104030		
22	1.5	55	16	5		21.85	● 104032		
22	2	55	16	5		21.82	● 104034		
23	1	55	16	6		22.88	● 121704		
24	1	55	16	6		23.88	● 104037		
24	1.5	55	16	6		23.85	● 104039		
24	2	55	16	6		23.82	● 104041	● 104042	
25	1	55	16	6		24.88	● 104045		
25	1.5	55	16	6		24.85	● 104046		
26	1	55	16	7		25.88	● 104049		
26	1.5	55	16	6		25.85	● 104050		
26	2	55	16	6		25.82	● 104052		
27	1	65	18	6		26.88	● 104053		
27	1.5	65	18	6		26.85	● 104054		
27	2	65	18	6		26.82	● 104056		

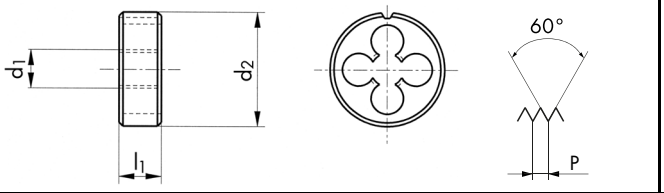
MF ISO DIN 13

HSS

DIN EN 22568

N5120 ≥Ø3 11/12

N5120 LH ≥Ø3 LH 11/12



Ø d_1 MF	P mm	d_2 mm	l_1 mm		→6g←	N5120 ID	N5120 LH ID
28	1	65	18	6	27.88	● 104060	
28	1.5	65	18	6	27.85	● 104061	
30	1	65	18	7	29.88	● 104073	
30	1.5	65	18	6	29.85	● 104074	
30	2	65	18	6	29.82	● 104076	
32	1.5	65	18	7	31.85	● 104082	* 104083
33	1.5	65	18	7	32.85	● 104085	
33	2	65	18	7	32.82	● 104086	
34	1.5	65	18	7	33.85	● 104091	
35	1.5	65	18	8	34.85	● 104092	
36	1.5	65	18	8	35.85	● 104095	
36	2	65	18	8	35.82	● 104097	
36	3	65	25	7	35.76	● 104099	
38	1.5	75	20	7	37.85	● 104101	
39	1.5	75	20	7	38.85	● 104104	
40	1.5	75	20	8	39.85	● 104118	
40	2	75	20	7	39.82	● 104120	
42	1.5	75	20	8	41.85	● 104122	
42	3	75	20	8	41.76	● 104125	
45	1.5	90	22	7	44.85	● 104127	
45	2	90	22	7	44.82	● 104129	
48	1.5	90	22	8	47.85	● 104133	* 104134
48	2	90	22	8	47.82	● 104135	
48	3	90	22	7	47.76	● 104137	
50	1.5	90	22	8	49.85	● 104150	
60	2	105	22	9	59.82	● 104168	

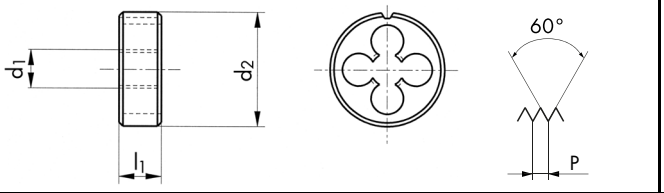
UNC ASME B1.1

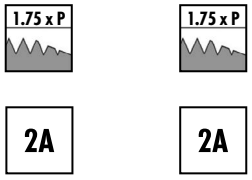
HSS

DIN EN 22568

N5110		11 / 12
N5120	≥ Ø 3	11 / 12

N5110	N5120		





Ø" d_1 UNC	P TPI	d_1 mm	d_2 mm	l_1 mm		→2A←	ID	ID
1	64	1.85	16	5	3	1.79	• 103893	
2	56	2.18	16	5	4	2.12	• 103894	
3	48	2.51	16	5	4	2.44	• 103895	
4	40	2.84	16	5	4	2.76	• 103896	
5	40	3.17	20	5	4	3.09		• 104263
6	32	3.5	20	7	4	3.41		• 104266
8	32	4.16	20	7	4	4.07		• 104269
10	24	4.82	20	7	4	4.71		• 104258
12	24	5.48	20	7	4	5.37		• 104259
1/4	20	6.35	20	7	4	6.22		• 104256
5/16	18	7.93	25	9	4	7.8		• 104264
3/8	16	9.52	30	11	4	9.37		• 104262
7/16	14	11.11	30	11	4	10.95		• 104267
1/2	13	12.7	38	14	4	12.52		• 111387
9/16	12	14.28	38	14	4	14.1		• 104270
5/8	11	15.87	45	18	4	15.68		• 104265
3/4	10	19.05	45	18	5	18.84		• 104261
7/8	9	22.22	55	22	5	22		• 104268
1	8	25.4	55	22	5	25.16		• 104257
1 1/4	7	31.75	65	25	6	31.49		• 104251
1 1/2	6	38.1	75	30	6	37.81		• 104250
2	4.5	50.8	90	36	7	50.45		* 104260

UNF ASME B1.1

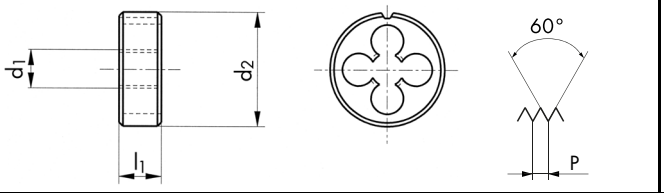
HSS

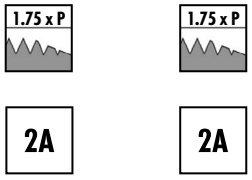
DIN EN 22568

N5110 11 / 12

N5120 ≥Ø3 11 / 12

N5110	N5120		





Ø" d_1 UNF	P TPI	d_1 mm	d_2 mm	l_1 mm		→2A←	ID	ID
0	80	1.52	16	5	3	1.47	• 103897	
1	72	1.85	16	5	3	1.79	• 103898	
2	64	2.18	16	5	4	2.12	• 103899	
3	56	2.51	16	5	4	2.44	• 103900	
4	48	2.84	16	5	4	2.77	• 103901	
5	44	3.17	20	5	4	3.1		• 104299
6	40	3.5	20	5	4	3.42		• 104302
8	36	4.16	20	7	4	4.08		• 104305
10	32	4.82	20	7	4	4.73		• 104295
12	28	5.48	20	7	4	5.38		• 104296
1/4	28	6.35	20	7	4	6.24		• 104293
5/16	24	7.93	25	9	4	7.82		• 104300
3/8	24	9.52	30	11	4	9.41		• 104298
7/16	20	11.11	30	11	5	10.98		• 104303
1/2	20	12.7	38	10	5	12.56		• 104292
9/16	18	14.28	38	10	5	14.14		• 104306
5/8	18	15.87	45	14	5	15.73		• 104301
3/4	16	19.05	45	14	6	18.89		• 104297
7/8	14	22.22	55	16	5	22.05		• 104304
1	12	25.4	55	16	6	25.21		• 104294
1 1/4	12	31.75	65	18	7	31.56		• 104289
1 1/2	12	38.1	75	20	7	37.91		• 111390

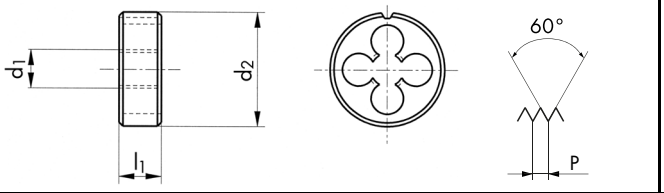
UNEF, UNS, UN ASME B1.1

HSS

DIN EN 22568

N5120 ≥ Ø 3 — 11 / 12

N5120



1.75 x P

2A

Ø" d_1 UNEF	P TPI	d_1 mm	d_2 mm	l_1 mm		→2A←	ID
12	32	5.48	20	7	4	5.39	● 104278
1/4	32	6.35	20	7	4	6.25	● 104275
5/16	32	7.93	25	9	4	7.84	● 104283
3/8	32	9.52	30	11	4	9.42	● 104282
7/16	28	11.11	30	11	5	11	● 104285
1/2	28	12.7	38	10	5	12.59	● 104274
9/16	24	14.28	38	10	5	14.17	● 104287
5/8	24	15.87	45	14	5	15.75	● 104284
3/4	20	19.05	45	14	6	18.91	● 104281

Ø" d_1 UNS	P TPI	d_1 mm	d_2 mm	l_1 mm		→2A←	ID
1/4	40	6.35	20	5	4	6.26	● 104309
1/4	36	6.35	20	5	4	6.26	● 104308
7/16	24	11.11	30	11	5	10.99	● 104311
1/2	24	12.7	38	10	5	12.58	● 104307
1	14	25.4	55	16	6	25.23	● 104310

Ø" d_1 UN	P TPI	d_1 mm	d_2 mm	l_1 mm		→2A←	ID
1 1/8	8	28.57	65	25	5	28.33	● 104246
1 1/4	8	31.75	65	25	6	31.51	● 104245
1 1/2	8	38.1	75	20	7	37.85	● 104244
1 3/4	8	44.45	90	22	7	44.2	● 104247

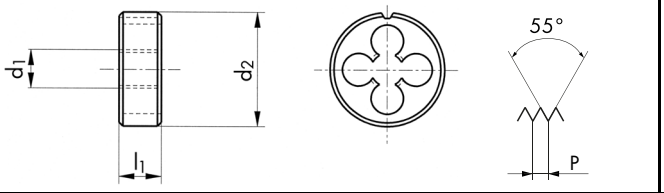
G DIN EN ISO 228 (BSP)

HSS

DIN EN 24231

N5120 ≥Ø3 11/12

N5120 LH ≥Ø3 LH 11/12



1.75 x P A

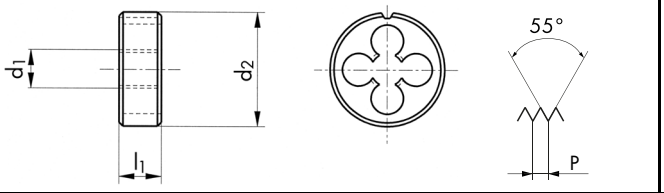
1.75 x P A

Ø" d_1 G	P TPI	d_1 mm	d_2 mm	l_1 mm		→A←	N5120 ID	N5120 LH ID
1/8	28	9.7	30	11	5	9.62	• 103926	
1/4	19	13.15	38	10	5	13.03	• 103924	• 103925
3/8	19	16.66	45	14	5	16.54	• 103935	• 103936
1/2	14	20.95	45	14	6	20.81	• 103922	• 103923
5/8	14	22.91	55	16	5	22.77	• 103938	
3/4	14	26.44	55	16	6	26.3	• 103933	• 103934
7/8	14	30.2	65	18	6	30.06	• 103940	
1	11	33.24	65	18	7	33.07	• 103928	
1 1/4	11	41.91	75	20	8	41.73	• 103918	
1 1/2	11	47.8	90	22	8	47.62	• 103917	
2	11	59.61	105	22	9	59.43	• 103932	
2 1/2	11	75.18	120	22	10	74.97	• 103930	

G DIN EN ISO 228 (BSP)

Z HSSE | MS HSS | DIN EN 24231

Z5120	≥Ø2	NI	13 / 14 / 21
MS5120	≥Ø3		62
MS5120	≥Ø3		62



	Z5120	MS5120	MS5120
	2 x P	1.25 x P	1.25 x P
	A	A	A -0.1 mm

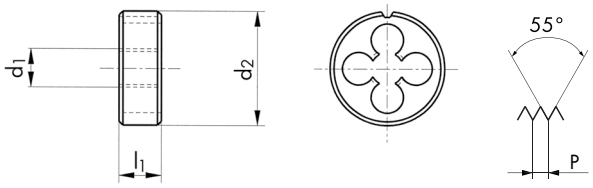
Ø" d_1 G	P TPI	d_1 mm	d_2 mm	l_1 mm	Z	MS	→A←	ID	ID	ID
1/8	28	9.72	30	11	5	5	9.62	● 104761		✱ 142831
1/4	19	13.15	38	10	5	5	13.03	● 104760	● 101338	✱ 142832
3/8	19	16.66	45	14	5	5	16.54	● 104764	● 101342	● 119716
1/2	14	20.95	45	14	6	6	20.81	● 104759	● 101337	● 119243
3/4	14	26.44	55	16	6	6	26.3	● 104763	● 101341	● 119648
1	11	33.24	65	18	8	7	33.07	● 104762	● 101340	● 135186

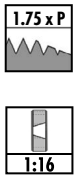
R DIN EN 10226, ISO 7-1

HSS ~DIN EN 24230

N5120 ≥ Ø 3 11 12

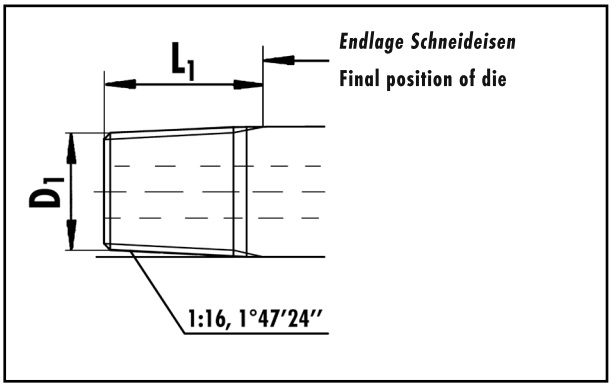
N5120





Ø" d_1 R	P TPI	d_2 mm	l_1 mm		ID
1/8	28	30	11	5	● 104226
1/4	19	38	14	5	● 104225
3/8	19	45	14	5	● 104230
1/2	14	45	18	6	● 104224
3/4	14	55	22	6	● 104229
1	11	65	25	7	● 104227

Richtwerte für Drehdurchmesser für R-Gewinde (in mm)
Guide values for turning diameters for R-threads (in mm)



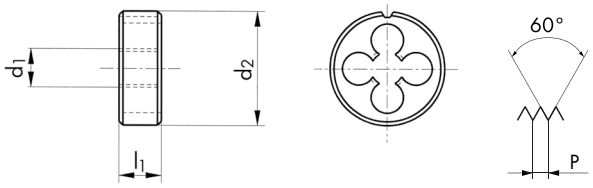
Ø" R	D_1 mini mm	D_1 maxi mm	D_1 (guide line) mm	L_1 (guide line) mm
1/8	9.422	9.534	9.48	8.2
1/4	12.700	12.863	12.78	12.1
3/8	16.181	16.343	16.26	12.5
1/2	20.330	20.555	20.44	16.4
3/4	25.735	25.960	25.85	17.7
1	32.455	32.743	32.60	20.9

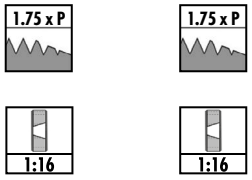
NPT ASME B1.20.1 NPTF ANSI B1.20.3

HSS ~DIN EN 22568

N5120	≥ Ø 3	11 / 12
N5120	≥ Ø 3	11 / 12

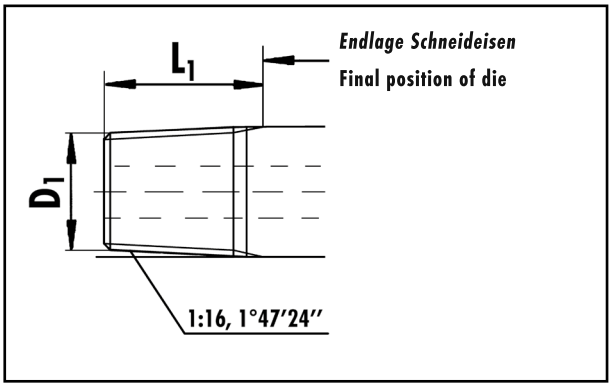
N5120	N5120		
NPT	NPTF		





Ø" d_1 NPT, NPTF	P TPI	d_2 mm	l_1 mm		ID	ID
1/16	27	25	9	4	• 104194	
1/8	27	30	11	5	• 104197	
1/4	18	38	14	5	• 104196	
3/8	18	45	14	5	• 104201	
1/2	14	45	18	6	• 104195	* 104205
3/4	14	55	22	6	• 104200	
1	11.5	65	25	7	• 104198	* 104208
1 1/4	11.5	75	26	8	• 104193	

Richtwerte für Drehdurchmesser für NPT- und NPTF-Gewinde (in mm)
Guide values for turning diameters for NPT and NPTF-threads (in mm)



Ø" NPT	D_1 mini mm	D_1 maxi mm	D_1 (guide line) mm	L_1 (guide line) mm	Ø" NPTF	D_1 mini mm	D_1 maxi mm	D_1 (guide line) mm	L_1 (guide line) mm
1/16	7.521	7.643	7.58	8.4	1/16	7.525	7.617	7.57	8.4
1/8	9.866	9.988	9.93	8.5	1/8	9.870	9.962	9.92	8.5
1/4	13.099	13.255	13.18	12.7	1/4	13.129	13.215	13.17	12.7
3/8	16.518	16.674	16.60	12.9	3/8	16.548	16.634	16.59	12.9
1/2	20.551	20.713	20.63	16.8	1/2	20.617	20.703	20.66	16.8
3/4	25.866	26.028	25.95	17.1	3/4	25.932	26.018	25.98	17.1
1	32.419	32.591	32.51	21.3	1	32.475	32.561	32.52	21.3
1 1/4	41.144	41.316	41.23	21.9					

PG DIN 40430 TR DIN 103

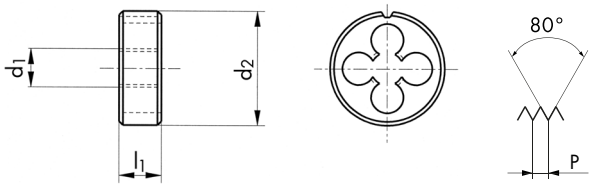
HSS | DIN EN 40434 | ~DIN EN 22568

N5120 ≥Ø3 11/12

N5120 ≥Ø3 11/12

N5120 | N5120

PG TR

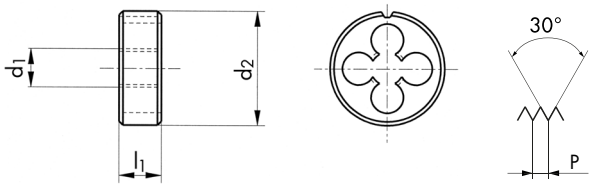


1.75 x P

Ø d_1 PG	P TPI	d_1 mm	d_2 mm	l_1 mm		→←
7	20	12.5	38	10	5	12.4
9	18	15.2	38	10	5	15.1
11	18	18.6	45	14	5	18.5
13.5	18	20.4	45	14	6	20.3
16	18	22.5	55	16	5	22.4
42	16	54	90	22	10	53.85
48	16	59.3	105	22	9	59.15

ID
• 104220
• 104221
• 104212
• 104213
• 104214
* 104218
* 104219

Other sizes on request!



1.75 x P

7e

Ø d_1 TR	P mm	d_2 mm	l_1 mm		→7e←
28	5	65	25	5	27.83
32	6	65	25	6	31.81

ID
* 104240
* 104242

Other sizes on request!

W BS 84 (BSW)

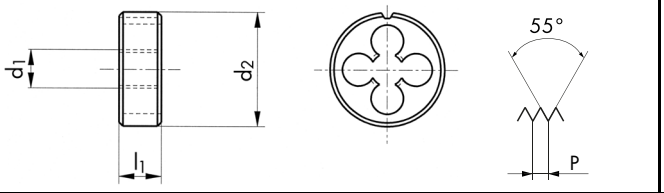
HSS

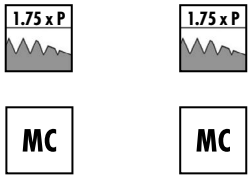
DIN EN 22568

N5120 ≥Ø3 11/12

N5120 LH ≥Ø3 LH 11/12

N5120	N5120 LH		





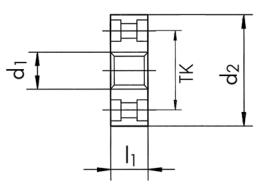
Ø" d_1 W	P TPI	d_1 mm	d_2 mm	l_1 mm		→MC←	ID	ID
1/8	40	3.17	20	5	4	3.09	● 104320	
5/32	32	3.96	20	7	4	3.88	● 104333	
3/16	24	4.76	20	7	4	4.66	● 104325	
1/4	20	6.35	20	7	4	6.24	● 104318	
5/16	18	7.93	25	9	4	7.82	● 104331	
3/8	16	9.52	30	11	4	9.4	● 104329	
7/16	14	11.11	30	11	4	10.98	● 104336	
1/2	12	12.7	38	14	4	12.56	● 104316	
5/8	11	15.87	45	18	4	15.72	● 104334	
3/4	10	19.05	45	18	5	18.89	● 104327	✱ 104328
1	8	25.4	55	22	5	25.27	● 104322	
1 3/8	6	34.92	65	25	6	34.77	✱ 104315	

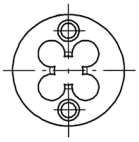
M ISO DIN 13

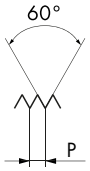
N HSS | Z HSSE | DC

N5220	≥Ø3			11 / 12
N5220	≥Ø3			11 / 12
Z5220	≥Ø2		NI	13 / 14 / 21

N5220	N5220	Z5220	







	1.75 x P	1.75 x P	2 x P
	6g	6e	6g

Ø d_1 M	P mm	d_2 mm	l_1 mm		TK mm	→6g←	→6e←	ID	ID	6g - mm	ID
1.4	0.3	16	2.6	4	12.2	1.36		● 104346			
1.6	0.35	16	2.6	4	12.2	1.54		● 104347			
2	0.4	16	3.5	4	12.2	1.93		● 104367			
2.3	0.4	16	3.5	4	12.2	2.23		● 104369			
2.5	0.45	16	3.5	4	12.2	2.43		● 104371			● 104803
2.6	0.45	16	3.5	4	12.2	2.53		● 104372			
3	0.5	16	3.5	4	12.2	2.92	2.9	● 104375	● 104374	0.030	● 104804
3.5	0.6	16	4	4	12.2	3.41		● 104376			
4	0.7	16	5	4	12.2	3.91	3.87	● 104380	● 104379	0.035	● 104805
5	0.8	20	7	4	15	4.9	4.87	● 104384	● 104383	0.035	● 104806
6	1	20	7	4	15	5.88	5.85	● 104388	● 104387	0.035	● 104807
8	1.25	25	9	4	19	7.87	7.83	● 104397	● 104396	0.035	● 104808
10	1.5	30	11	6	23	9.85	9.82	● 104354	● 104353	0.035	
12	1.75	30	11	6	23	11.83		● 104358			

≤M1.4 6h

MF ISO DIN 13

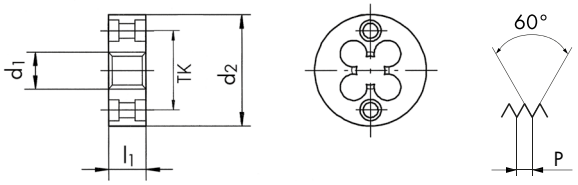
HSS

N5220

≥ Ø 3

11 / 12

N5220



1.75 x P

6g

Ø d_1 MF	P mm	d_2 mm	l_1 mm		TK mm	→6g←	ID
3	0.35	16	3	4	12.2	2.94	● 104373
4	0.5	16	4	4	12.2	3.93	● 104378
5	0.5	20	5	4	15	4.93	● 104382
6	0.5	20	5	4	15	5.93	● 104385
6	0.75	20	7	4	15	5.9	● 104386
7	0.5	25	7	4	19	6.93	* 104389
7	0.75	25	7	4	19	6.9	* 104390
10	0.75	30	7	6	23	9.9	* 104350
10	1.25	25	9	6	19	9.86	* 104352

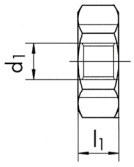
M ISO DIN 13, MF ISO DIN 13

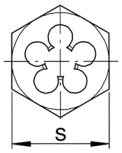
HSS

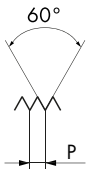
DIN 382

N5310

11 / 12







6g

Ø d_1 M	P mm	s mm	l_1 mm		→6g←	ID
3	0.5	18	5	3	2.92	● 104464
3.5	0.6	18	5	3	3.41	✱ 104465
4	0.7	18	5	3	3.91	● 104478
4.5	0.75	18	7	3	4.41	✱ 104479
5	0.8	18	7	4	4.9	● 104487
6	1	18	7	4	5.88	● 104493
8	1.25	21	9	4	7.87	● 104502
9	1.25	21	9	5	8.87	✱ 104503
10	1.5	27	11	4	9.85	● 104438
12	1.75	36	14	4	11.83	● 104443
14	2	36	14	4	13.82	● 104445
16	2	41	18	4	15.82	● 104447
18	2.5	41	18	5	17.79	● 104450
20	2.5	41	18	5	19.79	● 104453
22	2.5	50	22	5	21.79	● 104456
24	3	50	22	5	23.76	● 104459
30	3.5	60	25	5	29.73	● 104468

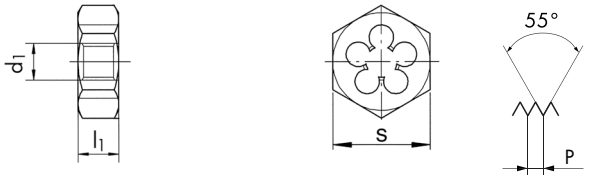
Ø d_1 MF	P mm	s mm	l_1 mm		→6g←	ID
6	0.75	18	7	4	5.9	✱ 104492
8	0.75	21	9	4	7.9	✱ 104500
8	1	21	9	4	7.88	✱ 104501
12	1	36	10	4	11.88	✱ 104440
27	1.5	60	18	6	26.85	✱ 104461
33	1.5	60	18	7	32.85	✱ 104469
39	1.5	70	20	8	38.85	✱ 104476

G DIN EN ISO 228 (BSP) W BS 84 (BSW) M ISO DIN 13

HSS | DIN 382 | DC

N5310	11 / 12	
N5310	11 / 12	
N5420	≥ Ø 3	11 / 12

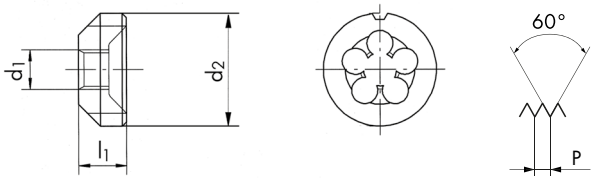
N5310	N5310		N5420



1.75 x P	1.75 x P		1.75 x P
A	MC		6g

Ø" d_1 G	P TPI	d_1 mm	s mm	l_1 mm		→A←	ID
1/4	19	13.15	36	10	5	13.03	● 104428
3/8	19	16.66	41	14	5	16.54	● 104433
1/2	14	20.95	41	14	6	20.81	● 104427
5/8	14	22.91	50	16	6	22.77	✱ 104434
3/4	14	26.44	50	16	6	26.3	● 104432
7/8	14	30.2	60	18	6	30.06	✱ 104435
1	11	33.24	60	18	7	33.07	● 104430
1 3/8	11	44.32	85	22	7	44.14	✱ 104426
1 3/4	11	53.74	100	22	8	53.57	✱ 104425

Ø" d_1 W	P TPI	d_1 mm	s mm	l_1 mm		→MC←	ID
1/8	40	3.17	18	5	3	3.09	✱ 104512
3/16	24	4.76	18	7	3	4.66	✱ 104515
9/16	12	14.28	36	14	4	14.14	✱ 104522
1 3/8	6	34.92	60	25	6	34.77	✱ 104508
1 1/2	6	38.1	70	30	6	37.95	✱ 104504
1 3/4	5	44.45	85	36	6	44.28	✱ 104507
2	4.5	50.8	85	36	7	50.63	✱ 104514



Ø d_1 M	P mm	d_2 mm	l_1 mm		→6g←	ID
2.5	0.45	16	8	4	2.43	✱ 104527
3.5	0.6	16	9.5	4	3.41	✱ 104530
8	1.25	25	14	5	7.86	✱ 104535

PRÄZISIONS-GEWINDELEHREN — PRECISION THREAD GAUGES

D5703

DC-Grenz-Gewindelehrdorn mit Gut- und Ausschussseite
Baumasse nach DIN 2280 bis Nenndurchmesser 40 mm

DC "Go" / "No-Go" thread plug gauge
Dimensions according to DIN 2280 till nominal diameter 40 mm

D5701-1

DC-Gut-Gewindelehrdorn
Baumasse nach DIN 2281-1;
über Nenndurchmesser 40 mm nach DIN 2281-2

DC "Go" thread plug gauge
dimensions according to DIN 2281-1;
above nominal diameter of 40 mm as per DIN 2281-2

D5701-2

DC-Ausschuss-Gewindelehrdorn
Baumasse nach DIN 2283-1;
über Nenndurchmesser 40 mm nach DIN 2283-2

DC "No-Go" thread plug gauge
dimensions according to DIN 2283-1;
above nominal diameter of 40 mm as per DIN 2283-2

D5720

DC-Grenz-Gewindelehrdorn kegelig
mit Messstufe

DC "Go" / "No-Go" thread plug gauge conical
with step limit

Wichtiger Hinweis
DC SWISS SA ist spezialisiert für die Herstellung von Gewindelehrdornen mit extrem feinen Gewinden, wie sie häufig in der Uhrenindustrie zum Einsatz kommen, speziell für die Kontrolle von Innengewinden in Uhrengehäusen.
Auf Anfrage unterbreiten wir Ihnen gerne ein entsprechendes Angebot.

Important note
DC SWISS SA is specialised in the manufacture of thread plug gauges with extremely fine threads, such as those frequently used in the watchmaking industry, especially for checking internal threads in watch cases.
On request, we will be pleased to submit you an appropriate quotation.

PRÄZISIONS-GEWINDELEHREN — PRECISION THREAD GAUGES

D5704

DC-Gut-Gewindelehrring
Baumasse nach DIN 2285-1

DC "Go" thread ring gauge
dimensions according to DIN 2285-1

D5714

DC-Ausschuss-Gewindelehrring
Baumasse nach DIN 2299-1

DC "No-Go" thread ring gauge
dimensions according to DIN 2299-1

D5721

DC-Grenz-Gewindelehrring, für kegeliges Aussengewinde
mit Messstufe

DC "Go" / "No-Go" thread ring gauge for tapered external thread
with step limit

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 demand, 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.

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

Merkmale Characteristics							
Typ Type		D5701-1	D5701-2	D5703	D5720	D5722	D5725
M 6H / 6g	ISO DIN 13	294	294	294			
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295	295		
295	295		
295			
298 - 299	298 - 299		
298			
300	300		
301	301		
301	301		
		303	
		303	
302	302		
302			

Piktogramme - Pictographs

"Gut"
"Go"

"Ausschuss"
"No-Go"

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

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

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

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

LH
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 demand, 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

		D5701-1	D5701-2	D5703	D5703 LH	D5703
		6H	6H	6H	6H LH	6G
Ø d_1 M	P mm	ID	ID	ID	ID	ID
1	0.25			● 100242		
1.1	0.25			● 100243		
1.2	0.25			● 100244		
1.4	0.3			● 100245		
1.6	0.35			● 100246		
1.7	0.35			● 100247		
1.8	0.35			● 100248		
2	0.4			● 100278	● 105159	● 104982
2.2	0.45			● 100280		
2.3	0.4			● 100281		
2.5	0.45			● 100283	● 105160	● 104979
2.6	0.45			● 100285		
3	0.5			● 100310	● 104964	● 104976
3.5	0.6			● 100312		● 104977
4	0.7			● 100333	● 104966	● 104978
4.5	0.75	* 100114				
5	0.8			● 100348	● 104967	● 104980
6	1			● 100363	● 104968	● 104981
7	1			● 100369		
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	1.5				✶ 100713	
12	1.75	● 100498	● 105009		● 100718	
14	2	● 100503	● 105010		● 100723	
16	2	● 100508	● 105011		● 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				
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		• 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 ASME B18.29.1 ~ 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					

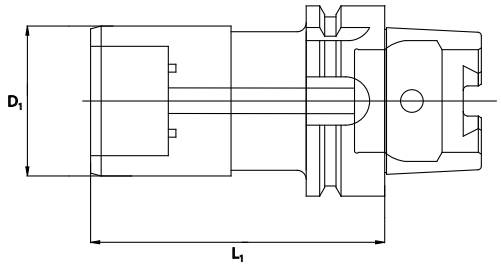
SRT 312
DC
SYNCHR

SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

DIN 69 893 A

HSK

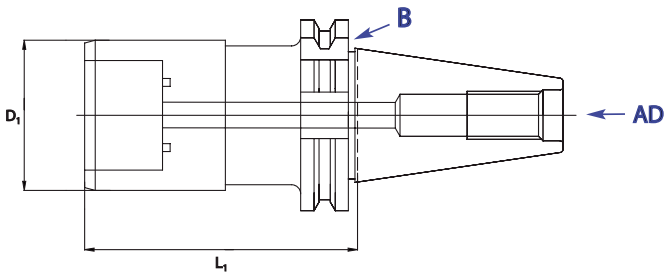


	SRT-HSK63-312	SRT-HSK63-820	SRT-HSK63-1433
	< 50 bar	< 50 bar	< 50 bar

	D_1 mm	L_1 mm			310	ID	ID	ID
M3 - M12	36	72	HSK A 63	S1		● 170111		
M8 - M20	53	89	HSK A 63	S2			● 170112	
M14 - M33	78	121	HSK A 63	S3				● 170114

MAS/BT Form AD + B

BT



	SRT-BT40-312	SRT-BT40-820	SRT-BT40-1433
	< 50 bar	< 50 bar	< 50 bar

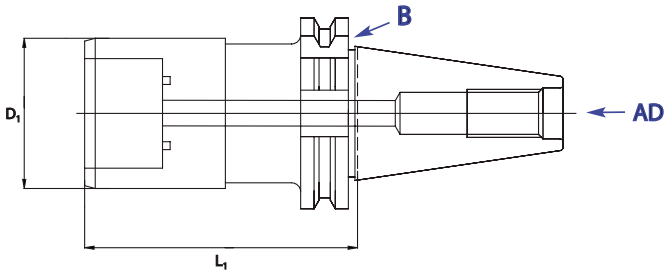
	D_1 mm	L_1 mm			310	ID	ID	ID
M3 - M12	36	71	BT40	S1		● 170133		
M8 - M20	53	85	BT40	S2			● 170134	
M14 - M33	78	121	BT40	S3				● 170135

SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

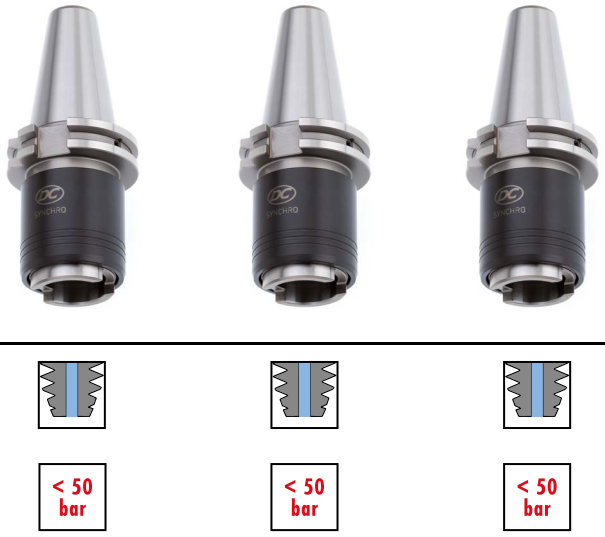
SYNCHRO
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

DIN 69 871 Form AD + B

SK



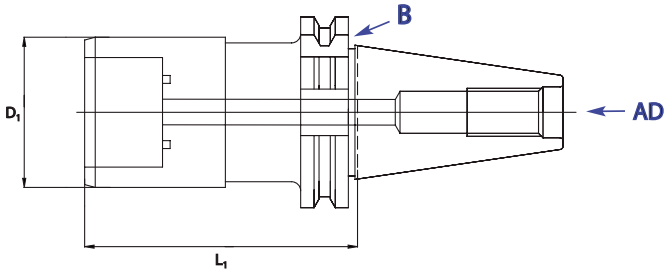
	D1 mm	L1 mm			310	SRT-SK40-312 ID	SRT-SK40-820 ID	SRT-SK40-1433 ID
M3 - M12	36	65	SK40	S1		● 170124		
M8 - M20	53	79	SK40	S2			● 170125	
M14 - M33	78	115	SK40	S3				● 170126



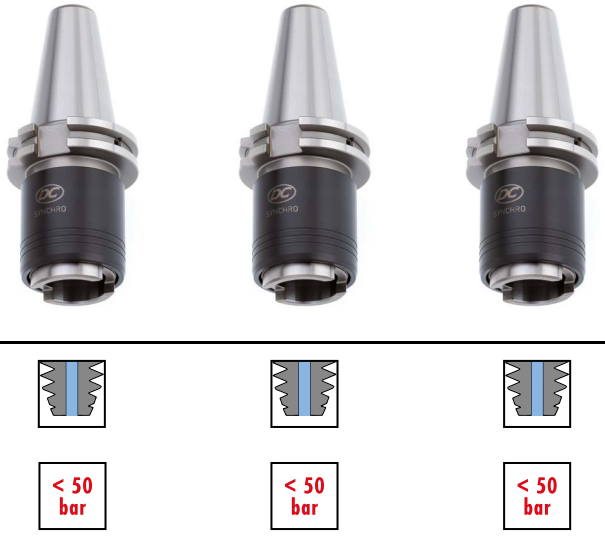
< 50 bar

DIN 69 871 Form AD + B

SK



	D1 mm	L1 mm			310	SRT-SK50-820 ID	SRT-SK50-1433 ID	SRT-SK50-2248 ID
M8 - M20	53	79	SK50	S2		● 170128		
M14 - M33	78	115	SK50	S3			● 170129	
M22 - M48	96	170	SK50	S4				● 170130



< 50 bar

SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
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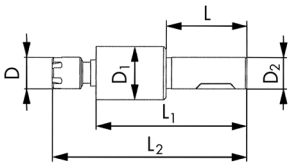
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

DIN 1835 B

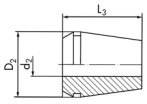
	SRT032-D6	SRT054-D12	ER8

SRT nano

SRT032 / SRT054



D9865-



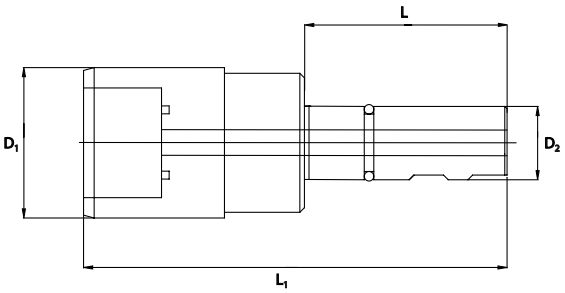
	D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	ID	ID	
M0.3 - M2	12	11	6	25	40	56	• 157610		
M0.5 - M4	12	20	12	33	59	75		• 127413	

No	D2 mm	L3 mm	d2 mm	ID
ER8-0100	8.5	13.5	1	• 179401
ER8-0150	8.5	13.5	1.5	• 179400
ER8-0200	8.5	13.5	2	• 118895
ER8-0250	8.5	13.5	2.5	• 118896
ER8-0300	8.5	13.5	3	• 118897
ER8-0350	8.5	13.5	3.5	• 118898
ER8-0400	8.5	13.5	4	• 118899
ER8-0450	8.5	13.5	4.5	• 118900

DIN 1835 B

	SRT312-D20	SRT312-D25	SRT520-D25

SRT short



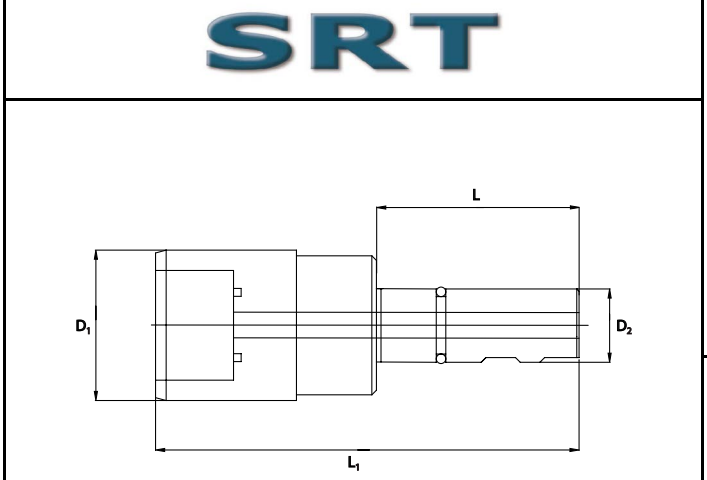
< 30 bar | < 30 bar | < 30 bar

	D1 mm	D2 mm	L mm	L1 mm		310	ID	ID	ID
M3 - M12	39	20	47	86	S1		• 162832		
M3 - M12	39	25	53	90	S1			• 162831	
M5 - M20	56	25	53	110	S2				• 162833

SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

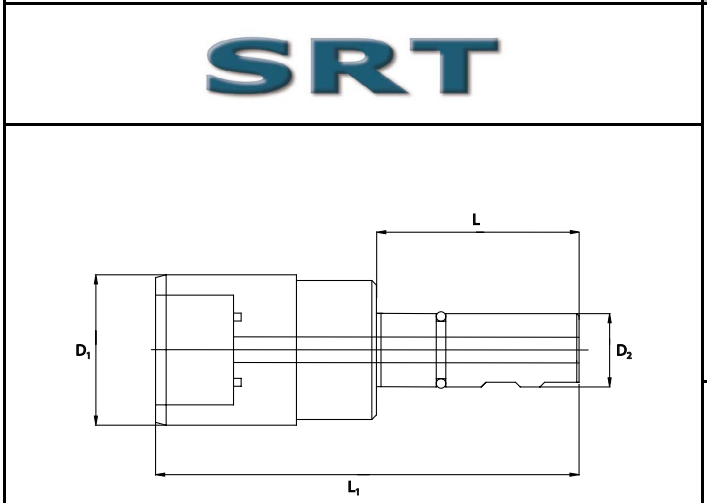
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

DIN 1835 B



	D1 mm	D2 mm	L mm	L1 mm		310	SRT-1D20-312 ID	SRT-1D25-312 ID	SRT-2D25-820 ID
M3 - M12	36	20	51	97	S1		● 170140		
M3 - M12	36	25	57	103	S1			● 170020	
M8 - M20	53	25	57	131	S2				● 170141

DIN 1835 B

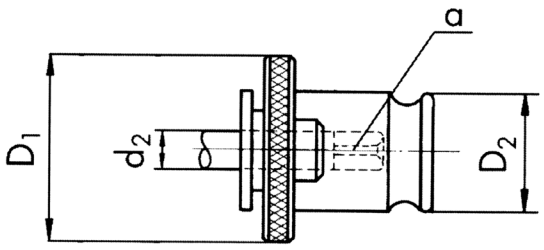


	D1 mm	D2 mm	L mm	L1 mm		310	SRT-2D32-820 ID	SRT-3D25-1433 ID	SRT-3D32-1433 ID
M8 - M20	53	32	61.5	135.5	S2		● 170142		
M14 - M33	78	25	57	164.5	S3			● 170143	
M14 - M33	78	32	61.5	169	S3				● 170144

SRT *Einsätze ohne Sicherheitskupplung*
Inserts without slipping clutch

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Sychronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado
Только для ridgid tapping

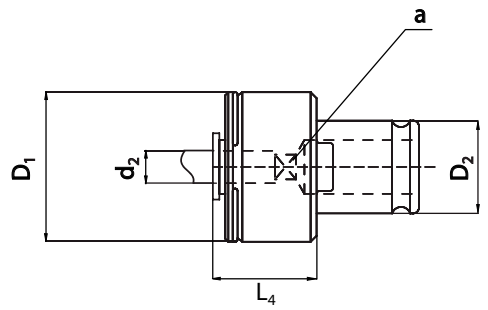
SRT



No	D_1 mm	D_2 mm	d_2 mm	a mm	S1- ID	S2- ID	S3- ID	S4- ID
S1-0028	30	19	2.8	2.1	● 129915			
S1-0035	30	19	3.5	2.7	● 129916			
S1-0045	30	19	4.5	3.4	● 129918			
S1-0060	30	19	6	4.9	● 129920			
S1-0070	30	19	7	5.5	● 129921			
S1-0080	30	19	8	6.2	● 129922			
S1-0090	30	19	9	7	● 129923			
S1-0100	30	19	10	8	● 129924			
S1-0110	30	19	11	9	● 129925			
S2-0060	48	31	6	4.9		● 129927		
S2-0070	48	31	7	5.5		● 129928		
S2-0080	48	31	8	6.2		● 129929		
S2-0090	48	31	9	7		● 129930		
S2-0100	48	31	10	8		● 129931		
S2-0110	48	31	11	9		● 148303		
S2-0120	48	31	12	9		● 129932		
S2-0140	48	31	14	11		● 129933		
S2-0160	48	31	16	12		● 129934		
S2-0180	48	31	18	14.5		● 151355		
S3-0110	70	48	11	9			● 170145	
S3-0120	70	48	12	9			● 170146	
S3-0140	70	48	14	11			● 170147	
S3-0160	70	48	16	12			● 170148	
S3-0180	70	48	18	14.5			● 170149	
S3-0200	70	48	20	16			● 170150	
S3-0220	70	48	22	18			● 170151	
S3-0250	70	48	25	20			● 170152	
S4-0180	96	60	18	14.5				● 170153
S4-0200	96	60	20	16				● 170154
S4-0220	96	60	22	18				● 170155
S4-0250	96	60	25	20				● 170156
S4-0280	96	60	28	22				● 170157
S4-0320	96	60	32	24				● 170158
S4-0360	96	60	36	29				● 170159

Einsätze mit Sicherheitskupplung
Inserts with slipping clutch

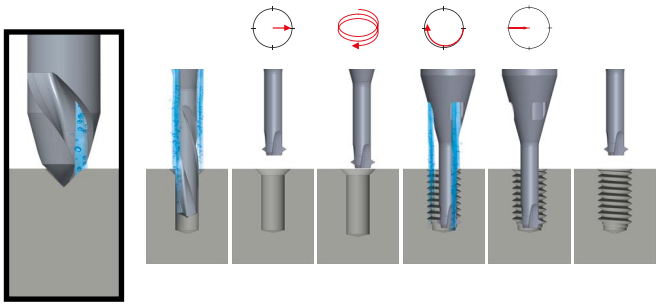
CLASSIC



No	D_1 mm	D_2 mm	d_2 mm	a mm	L_4 mm	SC1- ID	SC2- ID	SC3- ID	SC4- ID
SC1-0028	32	19	2.8	2.1	25	● 170160			
SC1-0035	32	19	3.5	2.7	25	● 170161			
SC1-0045	32	19	4.5	3.4	25	● 170162			
SC1-0060	32	19	6	4.9	25	● 170163			
SC1-0070	32	19	7	5.5	25	● 170164			
SC1-0080	32	19	8	6.2	25	● 170165			
SC1-0090	32	19	9	7	25	● 170166			
SC1-0100	32	19	10	8	25	● 170167			
SC2-0060	50	31	6	4.9	34		● 170168		
SC2-0070	50	31	7	5.5	34		● 170169		
SC2-0080	50	31	8	6.2	34		● 170170		
SC2-0090	50	31	9	7	34		● 170171		
SC2-0100	50	31	10	8	34		● 170172		
SC2-0110	50	31	11	9	34		● 170173		
SC2-0120	50	31	12	9	34		● 170174		
SC2-0140	50	31	14	11	34		● 170175		
SC2-0160	50	31	16	12	34		● 170176		
SC2-0180	50	31	18	14.5	34		● 170177		
SC3-0110	72	48	11	9	45			● 170178	
SC3-0120	72	48	12	9	45			● 170179	
SC3-0140	72	48	14	11	45			● 170180	
SC3-0160	72	48	16	12	45			● 170181	
SC3-0180	72	48	18	14.5	45			● 170182	
SC3-0200	72	48	20	16	45			● 170183	
SC3-0220	72	48	22	18	45			● 170184	
SC3-0250	72	48	25	20	45			● 170185	
SC4-0180	96	60	18	14.5	68				● 170186
SC4-0200	96	60	20	16	68				● 170187
SC4-0220	96	60	22	18	68				● 170188
SC4-0250	96	60	25	20	68				● 170189
SC4-0280	96	60	28	22	68				● 170190
SC4-0320	96	60	32	24	68				● 170191
SC4-0360	96	60	36	29	68				● 170192

ANWENDUNGSTABELLE — APPLICATION CHART

Programmierzyklus für Zentrierbohrer C315VS
Programming cycle for spotting drills C315VS



DC-Anwendungsgruppen — DC Material classification

	Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Kühlung / Lubricant — 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	O E
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	O E
		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	O E
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850	O E
40	*Titan* / Titanium	41	*Reintitan*	Pure titanium	< 250	< 850	O E
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	O E
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	O E
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	O E
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	O E
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	O E
		64	*Messing bleifrei*	Lead free brass	< 220	< 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	O E
80	*Kunststoff* / Plastic compounds	81	*Thermoplaste*	Thermoplastics	-	-	E
		82	*Duroplaste*	Duroplastics	-	-	E
		83	*Faserverstärkte Kunststoffe*	Glass fibre reinforced plastics	-	-	E
90	*Edelmetalle* / Precious metals	91	*Gelbgold*	Yellow gold	-	-	O E
		92	*Rotgold*	Red gold	-	-	O E
		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

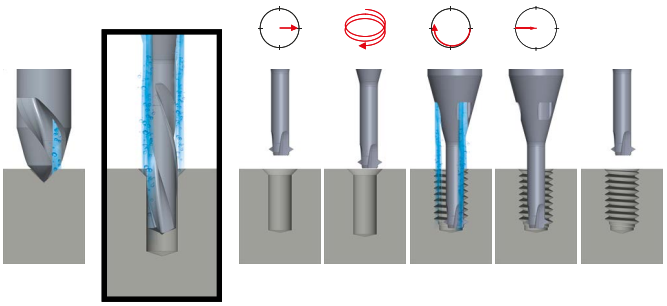
ZENTRIERBOHRER C315VS — SPOTTING DRILLS C315VS

	Vc (m/min) Guide Line Beschichtet Coated	C315VS						
		VS	VS	VS	VS	VS	VS	
		Vorschub f (mm/U)			Feed rate f (mm/rev.)			
		Ø 1.40	Ø 2.00	Ø 3.00	Ø 4.00	Ø 6.00	Ø 8.00	
11	120	0.05	0.08	0.10	0.12	0.15	0.20	11
12	120	0.05	0.08	0.10	0.12	0.15	0.20	12
13	120	0.05	0.08	0.10	0.12	0.15	0.20	13
14	80	0.05	0.08	0.10	0.12	0.15	0.20	14
15	60	0.03	0.04	0.06	0.08	0.12	0.18	15
16	40	0.02	0.03	0.04	0.05	0.06	0.07	16
17	40	0.02	0.03	0.04	0.05	0.06	0.07	17
18								18
21	60	0.03	0.04	0.06	0.08	0.12	0.18	21
22	50	0.03	0.04	0.06	0.07	0.09	0.11	22
23	50	0.03	0.04	0.06	0.07	0.09	0.11	23
24	50	0.03	0.04	0.06	0.07	0.09	0.11	24
31	100	0.04	0.05	0.07	0.09	0.11	0.15	31
32	100	0.04	0.05	0.07	0.09	0.11	0.15	32
41	25	0.03	0.04	0.06	0.07	0.09	0.11	41
42	25	0.04	0.07	0.09	0.11	0.14	0.18	42
51	25	0.025	0.03	0.04	0.05	0.07	0.09	51
52	20	0.025	0.03	0.04	0.05	0.07	0.09	52
53	10	0.025	0.03	0.04	0.05	0.07	0.09	53
61	100	0.06	0.09	0.11	0.13	0.18	0.23	61
62	100	0.06	0.09	0.11	0.13	0.16	0.18	62
63	80	0.06	0.09	0.11	0.13	0.16	0.18	63
64	80	0.06	0.09	0.11	0.13	0.16	0.18	64
71	150	0.06	0.09	0.11	0.13	0.18	0.23	71
72	150	0.06	0.09	0.11	0.13	0.18	0.23	72
73	100	0.06	0.09	0.11	0.13	0.18	0.23	73
74	100	0.06	0.09	0.11	0.13	0.18	0.23	74
81	200	0.08	0.11	0.13	0.15	0.20	0.25	81
82	200	0.08	0.11	0.13	0.15	0.20	0.25	82
83	100	0.08	0.11	0.13	0.15	0.20	0.25	83
91	200	0.08	0.11	0.13	0.15	0.20	0.25	91
92	150	0.08	0.11	0.13	0.15	0.20	0.25	92
93	100	0.08	0.11	0.13	0.15	0.20	0.25	93
94	100	0.08	0.11	0.13	0.15	0.20	0.25	94

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

ANWENDUNGSTABELLE — APPLICATION CHART

Programmierzyklus für Spiralbohrer FZ315VS
Programming cycle for twist drills FZ315VS



DC-Anwendungsgruppen — DC Material classification

	Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Kühlung / Lubricant — 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	O E
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	O E
		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	O E
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850	O E
40	*Titan* / Titanium	41	*Reintitan*	Pure titanium	< 250	< 850	O E
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	O E
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	O E
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	O E
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	O E
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	O E
		64	*Messing bleifrei*	Lead free brass	< 220	< 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	O E
80	*Kunststoff* / Plastic compounds	81	*Thermoplaste*	Thermoplastics	-	-	E
		82	*Duroplaste*	Duroplastics	-	-	E
		83	*Faserverstärkte Kunststoffe*	Glass fibre reinforced plastics	-	-	E
90	*Edelmetalle* / Precious metals	91	*Gelbgold*	Yellow gold	-	-	O E
		92	*Rotgold*	Red gold	-	-	O E
		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

SPIRALBOHRER FZ315VS — TWIST DRILLS FZ315VS

	Vc (m/min) Guide Line Ø 0.58 - 2.0	FZ315VS						Vc (m/min) Guide Line Ø 2.01 - 5.4	FZ315VS				
		VS	VS	VS	VS	Q1 Qx Qx			VS	VS	VS	Q1 Qx Qx	
		Vorschub f (mm/U)				Feed rate f (mm/rev.)			Vorschub f (mm/U)			Feed rate f (mm/rev.)	
	Beschichtet Coated	Ø0.58-0.82	Ø0.83-1.07	Ø1.08-1.46	Ø1.47-2.0	Q1	Qx	Beschichtet Coated	Ø2.01-3.05	Ø3.06-4.5	Ø4.51-5.4	Qx	
11	40 - 60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	80 - 110	0.07-0.12	0.12-0.18	0.18-0.23		11
12	40 - 60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	80 - 110	0.07-0.12	0.12-0.17	0.17-0.22		12
13	35 - 55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	70 - 100	0.07-0.12	0.12-0.17	0.17-0.22		13
14	35 - 55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	70 - 100	0.07-0.12	0.12-0.17	0.17-0.22		14
15	35 - 55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	70 - 100	0.07-0.12	0.12-0.17	0.17-0.22		15
16	35 - 55	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	70 - 100	0.07-0.10	0.10-0.14	0.14-0.17		16
17	30 - 45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	60 - 80	0.07-0.10	0.10-0.15	0.14-0.18		17
18													18
21	30 - 45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	60 - 80	0.045-0.055	0.055-0.07	0.07-0.10		21
22	30 - 45	0.015-0.025	0.025-0.035	0.035-0.045	0.045-0.055	$1xd_1$-$4xd1$	$1xd_1$-$2xd_1$	60 - 80	0.045-0.055	0.055-0.07	0.07-0.10		22
23	35 - 50	0.02-0.025	0.025-0.035	0.04-0.05	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	60 - 80	0.05-0.065	0.05-0.065	0.06-0.09		23
24	35 - 50	0.02-0.025	0.025-0.035	0.04-0.05	0.05-0.065	$1xd_1$-$4xd_1$	$1xd_1$-$2xd_1$	60 - 80	0.05-0.065	0.05-0.065	0.06-0.09		24
31	50 - 80	0.025-0.045	0.045-0.065	0.065-0.085	0.085-0.10	$4xd_1$-$8xd_1$	$4xd_1$	90 - 130	0.10-0.15	0.15-0.20	0.20-0.25		31
32	40 - 70	0.025-0.045	0.045-0.065	0.065-0.085	0.085-0.10	$4xd_1$-$8xd_1$	$4xd_1$	80 - 120	0.10-0.14	0.14-0.18	0.18-0.23		32
41	15 - 25	0.005-0.02	0.015-0.045	0.04-0.06	0.055-0.07	$1/2xd_1$-$1xd_1$	$1/4xd_1$-$1/2xd_1$	30 - 40	0.055-0.07	0.055-0.07	0.055-0.07	$1/3xd_1$-$1/2xd_1$	41
42	15 - 25	0.005-0.02	0.015-0.045	0.04-0.06	0.055-0.07	$1/2xd_1$-$1xd_1$	$1/4xd_1$-$1/2xd_1$	30 - 40	0.055-0.07	0.055-0.07	0.055-0.07	$1/3xd_1$-$1/2xd_1$	42
51	15 - 25	0.005-0.02	0.02-0.025	0.025-0.035	0.035-0.05	$1/2xd_1$-$1xd_1$	$1/2xd_1$	30 - 40	0.035-0.05	0.035-0.05	0.05-0.08		51
52	15 - 25	0.015-0.02	0.02-0.025	0.025-0.035	0.035-0.05	$1/2xd_1$-$1xd_1$	$1/2xd_1$	30 - 40	0.035-0.05	0.035-0.05	0.05-0.08		52
53	15 - 25	0.005-0.01	0.01-0.02	0.02-0.03	0.03-0.04	$1/2xd_1$-$1xd_1$	$1/2xd_1$	30 - 40	0.03-0.04	0.03-0.04	0.04-0.06		53
61	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	130 - 180	0.12-0.15	0.15-0.20	0.20-0.25		61
62	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	130 - 180	0.12-0.15	0.15-0.20	0.20-0.25		62
63	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	80 - 110	0.12-0.15	0.14-0.18	0.18-0.23		63
64	50 - 80	0.05-0.08	0.06-0.1	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	80 - 110	0.12-0.15	0.14-0.18	0.18-0.23		64
71	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	130 - 180	0.12-0.15	0.15-0.20	0.20-0.25		71
72	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	130 - 180	0.12-0.15	0.15-0.20	0.20-0.25		72
73	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	100 - 130	0.12-0.15	0.14-0.18	0.18-0.23		73
74	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$2xd_1$-$3xd_1$	$3xd_1$	100 - 130	0.12-0.15	0.14-0.18	0.18-0.23		74
81	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	130 - 180	0.12-0.15	0.15-0.20	0.20-0.25		81
82	50 - 80	0.05-0.08	0.06-0.10	0.08-0.12	0.12-0.15	$4xd_1$-$8xd_1$	$4xd_1$	130 - 180	0.12-0.15	0.15-0.20	0.20-0.25		82
83	40 - 60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	80 - 120	0.07-0.12	0.12-0.18	0.18-0.23		83
91	50 - 80	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	130 - 180	0.07-0.12	0.12-0.17	0.17-0.22		91
92	50 - 80	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	130 - 180	0.07-0.12	0.12-0.17	0.17-0.22		92
93	40 - 60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	80 - 110	0.07-0.12	0.12-0.17	0.17-0.22		93
94	40 - 60	0.02-0.035	0.03-0.045	0.04-0.055	0.05-0.065	$2xd_1$-$3xd_1$	$3xd_1$	80 - 110	0.07-0.12	0.12-0.17	0.17-0.22		94

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

ANWENDUNGSTABELLE — APPLICATION CHART

DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Kühlung Lubricant 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
		64	Messing bleifrei	Lead free brass	< 220	< 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 — F286VS

	Vc (m/min) Guide Line Beschichtet Coated	F286VS						
		VS	VS	VS	VS	VS	VS	
		Vorschub f (mm/U)			Feed rate f (mm/rev.)			
		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	
11	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
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	12
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	13
14	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
15	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								16
17								17
18								18
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	21
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	22
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	23
24	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								31
32								32
41	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								42
51	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								52
53								53
61	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								62
63	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
64	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	64
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	71
72	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
73	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								74
81								81
82								82
83								83
91								91
92								92
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	93
94	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

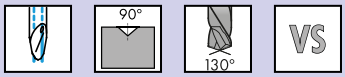
Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

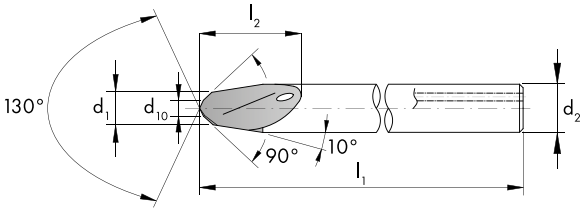
Vollhartmetall-Zentrierbohrer
Solid carbide spotting drills

VHM CAR | DC | h6

C

C315VS

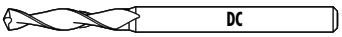




Ø d_1	l_1 mm	l_2 mm	d_2 h6 mm	d_{10} mm		ID
1.4	40	6	3	0.5	2	● 182872
2	40	6.2	3	1	2	● 182873
3	40	6.3	3	1.5	2	● 182874
4	50	8	4	2	2	● 190331
6	60	12	6	3	2	● 190332
8	70	16	8	4	2	● 190333

Vollhartmetall-Spiralbohrer
Solid carbide twist drills

VHM CAR



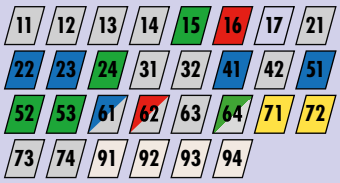
h6

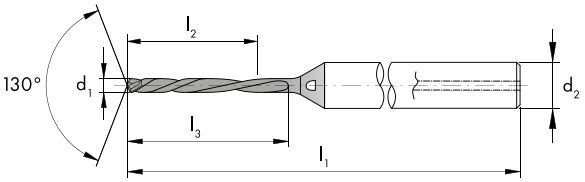
FZ

FZ315VS	FZ315VS		

FZ315VS

FZ315VS



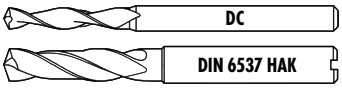


Ø d_1	D_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm		ID
0.58	M0.8	42	4.6	5.7	3	2	● 182863
0.59	S0.8	42	4.7	5.8	3	2	● 188023
0.65	M0.9	45	5.2	6.4	3	2	● 182864
0.67	S0.9	45	5.4	6.6	3	2	● 188024
0.7	M1	45	5.6	6.9	3	2	● 182865
0.74	S1	45	5.9	7.3	3	2	● 188025
0.9	M1.2	45	7.2	8.8	3	2	● 182866
0.94	S1.2	48	7.5	9.2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

Vollhartmetall-Spiralbohrer
Solid carbide twist drills

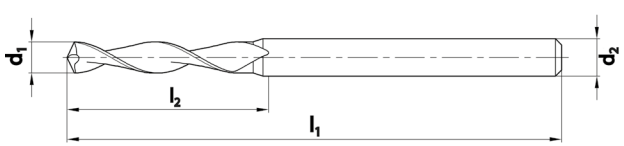
VHM CAR

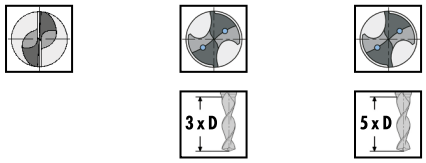


HBK HEK

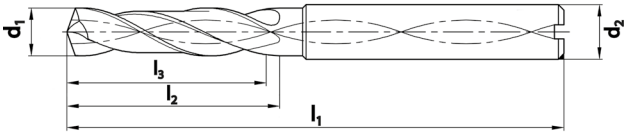
sur demande
auf Anfrage
on request
su richiesta
sobre pedido
по заказу

	F313VS	F285VS	F286VS
F313VS R30 130° VS	11 12 13 14 15 21 22 23 24 41 61 63 71 72 73 74		
F285VS F286VS R30 140° VS		11 12 13 14 15 21 22 23 24 41 51 61 71 72 73 74 93 94	





Ø d_1 (h_7)	d_2 (h_6) mm	l_1 mm	l_2 mm			ID
0.88	3	38	8	2	M1	● 158515
0.9	3	38	10	2	*M1.2	● 159419
1.08	3	38	10	2	M1.2	● 158516
1.25	3	38	12	2	M1.4	● 158517
1.45	3	38	12	2	M1.6	● 158518
1.65	3	38	12	2	M1.8	● 158519
1.8	3	38	12	2	M2	● 158520
1.95	3	38	12	2	UNC2-56	● 158521
2.3	3	38	16	2	M2.5	● 158522
2.55	3	38	16	2	UNC4-40	● 158523
2.8	3	38	16	2	M3	● 158524
					*GWi5000	



Ø d_1 (m_7)	d_2 (h_6) mm	l_1 mm	l_2 mm	l_3 mm			ID
3.25	6	62	20	14	2	M3.5	● 158527
3.7	6	62	20	14	2	M4	● 158528
4.65	6	66	24	17	2	M5	● 158532
5.55	6	66	28	20	2	M6	● 158534
7.4	8	79	41	29	2	M8	● 158540
9.3	10	89	47	35	2	M10	● 158544
11.2	12	102	55	40	2	M12	● 158546

Ø d_1 (m_7)	d_2 (h_6) mm	l_1 mm	l_2 mm	l_3 mm			ID
3.3	6	66	28	23	2	M4	● 160989
4.2	6	74	36	29	2	M5	● 160990
5	6	82	44	35	2	M6	● 160991
6.8	8	91	53	43	2	M8	● 160992
8.5	10	103	61	49	2	M10	● 160993
10.2	12	118	71	56	2	M12	● 160994

DC
Z | CHALLENGING THREADING

Schneideisenhalter und Windeisen
Die stocks and tap wrenches

D5810- *Schneideisenhalter für runde Schneideisen nach DIN EN 22568, DIN EN 24230, DIN EN 24231, DIN EN 40434*
Die stocks for round dies to DIN EN 22568, DIN EN 24230, DIN EN 24231, DIN EN 40434

D5820- *Windeisen verstellbar DIN 1814*
Tap wrenches, adjustable DIN 1814

D5810-

D5820-

No D5810-	DIN EN Ø	M Ø	MF Ø	UNC Ø	UNF Ø	UNEF UNS UN Ø	W Ø	G (BSP) Ø	NPT NPTF R (BSPT) Ø	ID
1	16 x 5	1 - 2.6	2 - 2.6	No. 1 - 4	No. 1 - 4		1/16" - 3/32"			● 170712
2	20 x 5	3 - 4	3 - 6	No 5	No 5 - 6		1/8"			● 170713
3	20 x 7	4.5 - 6		No 6 - 1/4"	No 8 - 1/4"	No 12 - 1/4"	5/32" - 1/4"			● 170714
4	25 x 9	7 - 9	7 - 9	5/16"	5/16"	5/16"	5/16"		1/16"	● 170715
5	30 x 11	10 - 11	10 - 11	3/8" - 7/16"	3/8" - 7/16"	3/8" - 7/16"	3/8" - 7/16"	1/8"	1/8"	● 170716
6	38 x 10		12 - 15		1/2" - 9/16"	1/2" - 9/16"		1/4"		● 170717
7	38 x 14	12 - 14		1/2" - 9/16"			1/2" - 9/16"		1/4"	● 170718
8	45 x 14		16 - 20		5/8" - 3/4"	5/8" - 13/16"		3/8" - 1/2"	3/8"	● 170719
9	45 x 18	16 - 20		5/8" - 3/4"			5/8" - 3/4"		1/2"	● 170720
10	55 x 16		22 - 26		7/8" - 1"	7/8" - 1"		5/8" - 3/4"		● 170721
11	55 x 22	22 - 24		7/8" - 1"			7/8" - 1"		3/4"	● 170722
12	65 x 18		*27 - 36		1 1/8" - 1 3/8"	1 1/16" - 1 3/8"		7/8" - 1"		● 170723
13	65 x 25	27 - 36		1 1/8" - 1 3/8"			1 1/8" - 1 3/8"		1"	● 170724
14	75 x 20		38 - 42		1 1/2"	1 7/16" - 1 1/2"		1 1/8" - 1 1/4"		● 170725
15	75 x 30	39 - 42		1 1/2"			1 1/2" - 1 5/8"			● 170726
16	90 x 22		45 - 52			1 3/4" - 2"		1 3/8" - 1 3/4"		● 170727
17	90 x 36	45 - 52		1 3/4" - 2"			1 3/4" - 2"			● 170728
18	105 x 22		55 - 65					2" - 2 1/4"		● 170729

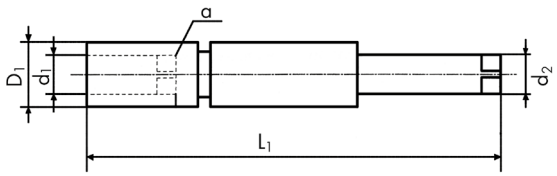
Ausnahme Steigung 3 mm (Nr. 13 verlangen).
For 3 mm pitches use No. 13.

No D5820-	a mm	ID
0	1.9 - 3	● 170730
1	2.5 - 5.5	● 170731
2	4.3 - 8	● 170732
3	5.5 - 12	● 170733
4	9.5 - 15.5	● 170734
5	12.5 - 22.4	● 170735

Verlängerungen
Tap extension sleeves

D5830- *Verlängerungen für Gewindebohrer, ~DIN 377*
Tap extension sleeves ~DIN 377

D5840- *Verlängerungen für Gewindebohrer*
Tap extension sleeves



No D5830-	a mm	L_1 mm	D_1 mm	ID
1	2.1	60	6	● 110571
2	2.24	70	6	● 110572
3	2.4	70	6	● 110573
4	2.5	80	7	● 110574
5	2.8	90	7	● 110575
6	3	90	7	● 110579
7	3.15	95	7	● 110580
8	3.4	95	8	● 110581
9	3.55	100	8	● 118706
10	3.8	100	9	● 118707
11	4	105	10	● 118708
12	4.3	105	10	● 118709
13	4.5	105	10	● 118710
14	4.9	110	10	● 118711
15	5	110	11	● 118712
16	5.5	115	12	● 118713
17	5.6	110	12	● 118714
18	6.2	120	14	● 118715
19	6.3	120	14	● 118716
20	7	125	15	● 118717
21	7.1	120	15	● 118718
22	7.5	120	15	● 118719
23	8	125	17	● 118720
24	9	130	19	● 118721
25	10	140	21	● 110562
26	11	150	23	● 110563
27	11.2	145	23	● 110564
28	12	155	25	● 110565
29	12.5	160	25	● 110566
30	14	165	28	● 110567
31	14.5	175	29	● 110568
32	16	180	30	● 110569
33	18	200	33	● 110570
34	20	220	36	● 110576
35	22	220	40	● 110577
36	22.4	240	40	● 110578

No D5840-	a mm	L_1 mm	d_2 mm	d_1 mm	D_1 mm	ID
10	2.7	130	6	3.5	7.5	● 169928
11	3.4	130	6	4.5	8.5	● 169929
1	4.9	130	6	6	12	● 142137
2	5.5	130	7	7	13	● 142138
3	6.2	130	8	8	13	● 142139
4	7	130	9	9	17	● 142140
5	8	130	10	10	17	● 142141
6	9	130	11	11	17	● 142142
7	9	130	12	12	20	● 142143
8	11	130	14	14	20	● 142144
9	12	130	16	16	25	● 142145

BEHERRSCHEN DER KLEINSTEN UND PRÄZISESTEN GEWINDEVERBINDUNGEN

MASTER THE SMALLEST AND MOST PRECISE THREADED CONNECTIONS

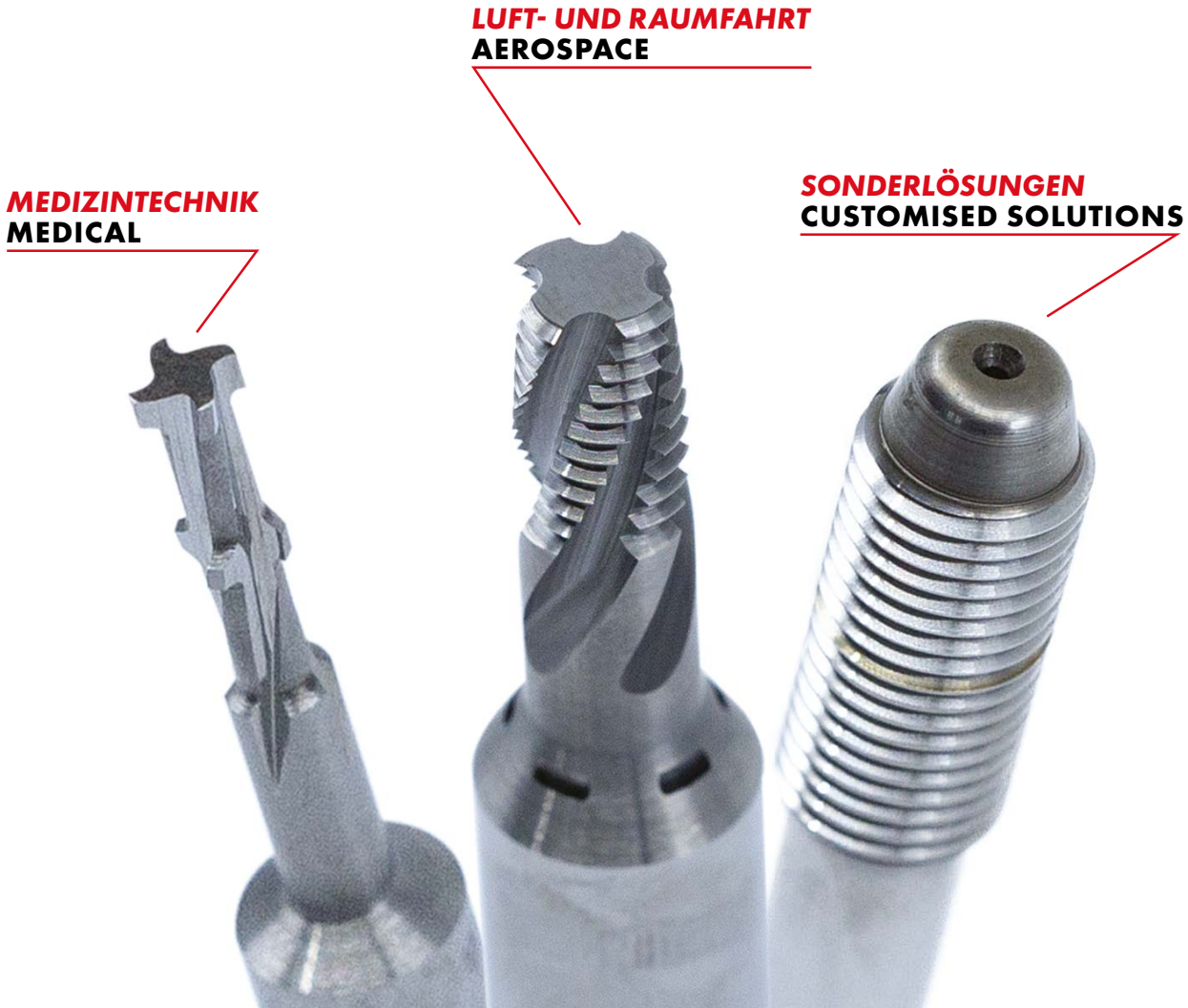
nano

SPEZIALWERKZEUGE NACH MASS

Manche Prozesse erfordern massgefertigte Spezialwerkzeuge. DC SWISS kann perfekt auf Ihre Anforderungen abgestimmte Gewindewerkzeuge herstellen.

Mit unserem Know-how können wir Spezialwerkzeuge herstellen, die besonders hohen Herstelleranforderungen gerecht werden.

Wir helfen Ihnen, mit den geeigneten Werkzeugen auch kühnste Vorhaben umzusetzen. Dazu bietet Ihnen DC SWISS nicht nur ihre Fachkompetenzen und langjährige Erfahrung an, sondern auch eine umfassende Werkzeugpalette und massgeschneiderte Lösungen - für jede Konfiguration, jeden Werkstoff und jede Produktionstechnik, form- und massunabhängig. Denn DC SWISS ist schon heute gut gerüstet für das, was in Zukunft immer wichtiger wird: die individuelle Fertigung.

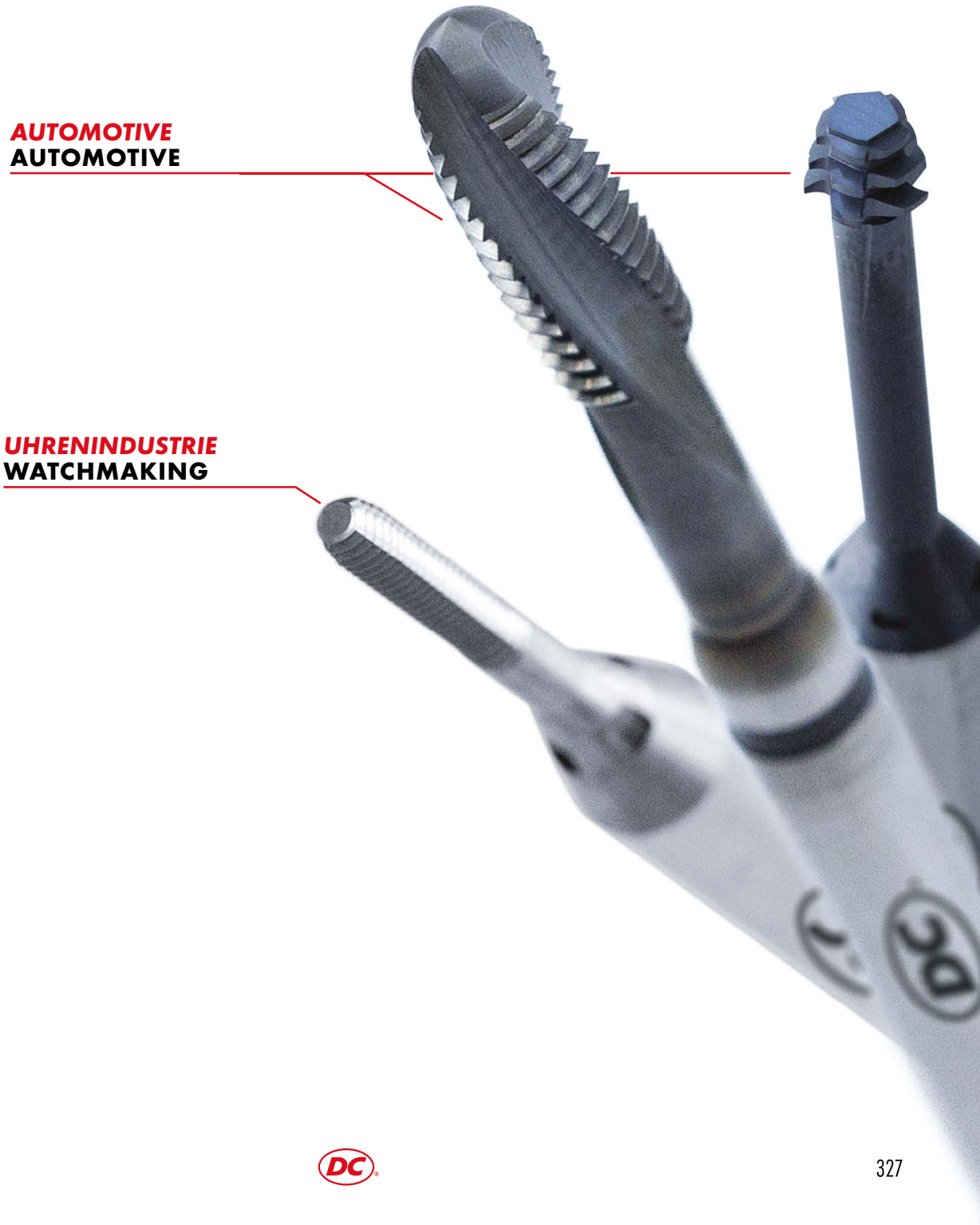


SPECIAL TOOLS ON DEMAND

Some processes require special on demand tools. DC SWISS can create custom-made threading tools to meet your requirements.

With our expertise, we can create on demand tools that meet the highest market requirements.

To enable you to create the most audacious and varied assemblies that are best suited to every situation, DC SWISS offers you access to its extensive expertise. Tools are, after all, essential items. They need to adapt to every configuration, every material and all production techniques. Shapes and sizes are no longer constraining factors. DC SWISS develops tools as a matter of course, because custom-made orders are becoming increasingly commonplace.



TAN
TAZ
FA/CFA
CMS

SPEZIFIZIERUNGEN — SPECIFICATIONS

TAN

TAZ

FA

- *Erstklassisches Basismaterial HSSE-PM*
- *Genauigkeit und Wiederholbarkeit des Werkzeuges durch Fertigung in einer einzigen Aufspannung*
- *Reinigen, bürsten oder polieren von 100 % der Werkzeuge*
- *Optimale Beschichtung, angepasst an jede Geometrie*

- Top quality HSSE-PM raw material
- Accuracy and repeatability of the tool by manufacturing in a single clamping operation
- Cleaning, brushing or polishing of 100 % of the tools
- Optimal coating adapted to each geometry

TAN40

- *Für Durchgangslöcher < 2 x D*

- For through holes < 2 x D

TAN50

- *Für Sacklöcher < 2 x D*

- For blind holes < 2 x D

Anwendung
Für leicht zu bearbeitende Werkstoffe, Stähle, Messing, Gelbgold, Silber

Application
For easy-to-machine materials, steels, brass, yellow gold, silver

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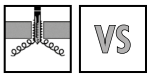
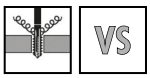
TAN40VS



TAN50VS



- *Vielseitige "VS"-Verschleissschutz-schicht für hohe Standzeiten in der Serienproduktion*

- Versatile "VS" wear-protective coating for long tool life in series production

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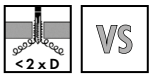
TAZ40VS



TAZ50VS

- *Für Durchgangslöcher < 2 x D*
- *Mit einem langen, an die Steigung angepassten Anschnitt, für ein besseres Eindringen in das Material*

- For through holes < 2 x D
- With a long chamfer adapted to the pitch, for a better penetration into the material

- *Für Sacklöcher < 2 x D*

- For blind holes < 2 x D

Anwendung
Für zähe Werkstoffe wie Nickellegierungen, Titanlegierungen, legierte Edelmetalle

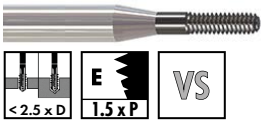
Application
For tough materials such as nickel alloys, titanium alloys, alloyed precious materials

- *Spezifische "VS"-Beschichtung der neuesten Generation, angepasst an die Geometrie des Werkzeugs*

- Specific "VS" coating of the latest generation adapted to the geometry of the tool

SPEZIFIZIERUNGEN — SPECIFICATIONS

FA80VS



- *Für Durchgangs- und Sacklöcher < 2.5 x D*
- *Mit extra-kurzem 1.5 x P-Einlauf (für Gewinde bis nahe dem Bohrungsgrund)*

- For through and blind holes < 2.5 x D
- With extra-short chamfer 1.5 x P (for threads close to the bottom of the core hole)

FA83VS

- *Für Durchgangs- und Sacklöcher < 2.5 x D*
- *Mit kurzem Anschnitt 2.5 x P*

- For through and blind holes < 2.5 x D
- With short chamfer 2.5 x P

Anwendung

- *Für jede Art von Werkstoffen mit einer Bruchdehnung > 5 %*
- *Polygon mit 4 Druckstollen ab Ø 0.5 mm*
- *Verbesserte Ausreissfestigkeit des Gewindes*

Application

- For any type of material with an elongation > 5 %
- Polygon made up of 4 lobes from Ø 0.5 mm
- Improved thread tensile strength

VS

- *Vielseitige "VS"-Verschleissschutz-schicht für hohe Standzeiten in der Serienproduktion*

- Versatile "VS" wear-protective coating for long tool life in series production

SPEZIFIZIERUNGEN — SPECIFICATIONS

CMS

CFA

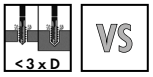
VHM
CAR

- *Hartmetallsorte angepasst für Härte und Torsionsfestigkeit*
- *Präzision und Wiederholgenauigkeit des Werkzeugs durch Fertigung in einer einzigen Aufspannung*
- *Unübertroffene Oberflächenqualität*

- Hard Metal grade suitable for its hardness and torsional strength
- Precision and repeatability of the tool by manufacturing in a single clamping operation
- Unsurpassed surface quality

CMS50

CMS50VS



- *Für Durchgangs- und Sacklöcher < 3 x D*
- *Mit revolutionärer Anschnittgeometrie für optimale Materialdurchdringung*

- For through and blind holes < 3 x D
- With a revolutionary chamfer geometry for optimal material penetration

Anwendung

- *Für spröde Werkstoffe wie Messing kurzspanend, Grauguss, Cube2, Aluminiumlegierung mit Si > 5 %*

Application

- For brittle materials like short chip brass, grey cast iron, Cube2, aluminium alloy with Si > 5 %

VS

- *Spezifische "VS"-Beschichtung der neuesten Generation, angepasst an die Geometrie des Werkzeugs*

- Specific "VS" coating of the latest generation adapted to the geometry of the tool

CFA80VS

- *Für Durchgangs- und Sacklöcher < 2.5 x D*
- *Mit extra-kurzem 1.5 x P-Einlauf (für Gewinde bis nahe dem Bohrungsgrund)*

- For through and blind holes < 2.5 x D
- With extra-short chamfer 1.5 x P (for threads close to the bottom of the core hole)

CFA83VS

- *Für Durchgangs- und Sacklöcher < 2.5 x D*
- *Mit kurzem Einlauf 2.5 x P*

- For through and blind holes < 2.5 x D
- With short chamfer 2.5 x P

Anwendung

- *Für jede Art von Nichteisen-Metallen mit einer Bruchdehnung > 3 %*
- *Für Werkstoffe wie Aluminium- und Kupferlegierungen, Gelb- und Rotgold, Silber, etc*

Application

- For any type of non-ferrous material with an elongation > 3 %
- For materials such as: aluminium and copper alloys, yellow and red gold, silver, etc

VS

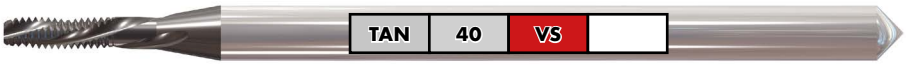
- *Vielseitige "VS"-Veschleissschutzschicht für hohe Standzeiten in der Serienproduktion*

- Versatile "VS" wear-protective coating for long tool life in series production

KODIERUNG — CODIFICATION

DC-Maschinen-Gewindebohrer nano — DC Machine taps nano

Beispiel - Example



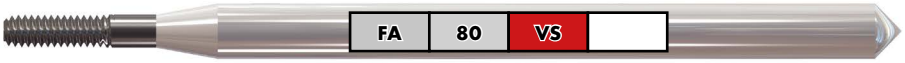
Normale Werkstoffe	Normal materials	**TAN**			
Zähe Werkstoffe	Tough materials	**TAZ**			
Messing	Brass	**CMS**			
Spiralnuten mit Linksdrall < 27°	< 27° left-hand spiral flutes		**40**		
Spiralnuten mit Rechtsdrall < 27°	< 27° right-hand spiral flutes		**50**		
VS-Verschleissschutzschicht, generell	VS wear-protective coating, general			**VS**	
Spezialausführung	Special execution				**SP**

Baumasse nach DC-Werksnorm — General dimensions as per DC standards

Für den Einsatz gemäss DC-Anwendungstabelle für DC-Gewindebohrer nano — For use as per DC application chart for DC taps nano

DC-Maschinen-Gewindeformer nano — DC Machine thread formers nano

Beispiel - Example



Gewindeformer nano aus PM	Thread formers nano in PM	**FA**			
Gewindeformer nano aus Vollhartmetall	Thread formers nano in solid carbide	**CFA**			
Anschnitt Form E (1.5 - 2 Gewindegänge)	Lead form E (1.5 - 2 chamfered threads)		**80**		
Anschnitt Form C (2 - 3 Gewindegänge)	Lead form C (2 - 3 chamfered threads)		**83**		
VS-Verschleissschutzschicht, generell	VS wear-protective coating, general			**VS**	
Spezialausführung	Special execution				**SP**

Baumasse nach DC-Werksnorm — General dimensions as per DC standards

Für den Einsatz gemäss DC-Anwendungstabelle für DC-Gewindeformer nano — For use as per DC application chart for DC thread formers nano

PIKTOGRAMME NANO — PICTOGRAPHS NANO

Für Werkstoffgruppen gemäss DC-Anwendungstabelle
For material groups as per DC application chart

12

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

22

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

Verstärkter Schaft gemäss DIN 371
Reinforced shank as per DIN 371

Verstärkter Schaft gemäss DC-Werksnorm
Reinforced shank as per DC standards

PM
HSSE-PM
HSSE-PM

VHM CAR
Vollhartmetall
Solid Carbide

Anzahl Spannuten (Z)
Number of flutes (Z)

Spiralnuten mit 20° Linksdrall
20° left-hand spiral flutes

Spiralnuten mit 25° Rechtsdrall
25° right-hand spiral flutes

Gewindeformer
Thread former

Durchgangsloch < 2 x D, langspanende Werkstoffe
Through hole < 2 x D, long chipping materials

Sackloch < 2 x D, langspanende Werkstoffe
Blind hole < 2 x D, long chipping materials

Durchgangs- und Sackloch < 2.5 x D, kurzspanende Werkstoffe
Through / blind hole < 2.5 x D, short chipping materials

Durchgangs- und Sackloch < 3 x D, kurzspanende Werkstoffe
Through / blind hole < 3 x D, short chipping materials

2 - 3 Gewindegänge, Form C
2 - 3 chamfered threads, form C

3.5 - 5 Gewindegänge, Form D
3.5 - 5 chamfered threads, form D

1.5 - 2 Gewindegänge, Form E
1.5 - 2 chamfered threads, form E

4H
Toleranzklasse 4H
Tolerance class 4H

ISO 2 6H
Toleranzklasse ISO 2 6H
Tolerance class ISO 2 6H

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

● *Lagerartikel*
Stock item

● *Kurzfristig lieferbar*
Available at short notice

* *Ab Lager lieferbar solange Vorrat*
Available from stock, while stock lasts

GEWINDEBOHRER NANO
THREAD TAPS NANO

DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		*Werkstoffbezeichnung*	Material designation	*Härte* Hardness (HB)	*Festigkeit* Tensile strength Rm (N/mm²)	*Dehnung* Elongation A (%)
10	*Stahl* Steels	11	*Automatenstahl*	Free-cutting steels	< 200	< 700	< 10
		12	*Baustahl, Einsatzstahl*	Structural, cementation steels	< 200	< 700	< 30
		13	*Kohlenstoffstahl*	Carbon steels	< 300	< 1000	< 20
		14	*Stahl legiert < 850 N/mm²*	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	*Stahl legiert / vergütet > 850 - < 1150 N/mm²*	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	*Hochfester Stahl ≤ 44 HRC*	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	*Stahl gehärtet > 54 - ≤ 63 HRC*	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	*Rostfreier Stahl* Stainless steels	21	*Rostfreier Stahl, geschwefelt*	Free machining stainless steels	< 250	< 850	< 25
		22	*Austenitisch*	Austenitic stainless steels	< 250	< 850	> 20
		23	*Ferritisch, martensitisch < 850 N/mm²*	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	*Ferritisch, martensitisch > 850 - < 1150 N/mm²*	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	*Guss* Cast iron	31	*Grauguss*	Cast iron	< 250	< 850	< 10
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	*Titan* Titanium	41	*Reintitan*	Pure titanium	< 250	< 850	> 20
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	< 20
50	*Nickel* Nickel	51	*Nickellegierung 1 ≤ 850 N/mm²*	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	*Nickellegierung 2 > 850 - ≤ 1150 N/mm²*	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	*Kupfer* Copper	61	*Reinkupfer (Elektrolytkupfer)*	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	*Messing, Bronze, Rotguss (kurzspanend)*	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	> 12
		64	*Messing bleifrei*	Lead free brass	< 220	< 700	> 15
70	*Aluminium Magnesium* Aluminium Magnesium	71	*Al unlegiert*	Al unalloyed	< 100	< 350	> 15
		72	*Al legiert Si < 1.5 %*	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	*Al legiert Si > 1.5 % - < 10 %*	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	*Al legiert Si > 10 %, Mg-Legierungen*	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	*Silber*	Silver	-	-	-

Optimal mit Schneidöl Optimal with cutting oil

Geeignet mit Schneidöl Suitable with cutting oil

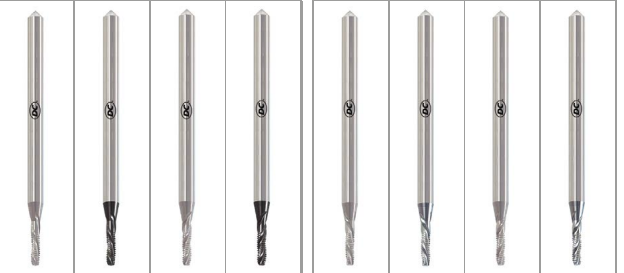
Optimal mit Emulsion Optimal with emulsion

Geeignet mit Emulsion Suitable with emulsion

GEWINDEBOHRER NANO — THREAD TAPS NANO

CLASSIC SYNCHRO

Ab Seite: From page:	TAN				TAZ				CMS	
	Normale Werkstoffe Normal materials				Zähe Werkstoffe Tough materials				Spröde Werkstoffe Brittle materials	
M	338	338	338	338	339	339	339	339	340	340
MF	341	341	341	341	342	342	342	342	343	343
UNC	344	344	344	344	345	345	345	345	346	346
UNF	347	347	347	347	348	348	348	348	349	349
S	350	350	350	350	351	351	351	351	352	352
SF	353	353	353	353	354	354	354	354	355	355
SL	356	356	356	356	357	357	357	357	358	358



	TAN40	TAN40VS	TAN50	TAN50VS	TAZ40	TAZ40VS	TAZ50	TAZ50VS	CMS50	CMS50VS	
Vc (m/min) Guide Line Ø 0.3 - 1.4 mm Standard	Standard										
Vc (m/min) Guide Line Ø 0.3 - 1.4 mm Beschichtet	Coated	4 - 10		12 - 20							
Vc (m/min) Guide Line Ø 1.4 - 2.8 mm Standard	Standard		4 - 8								
Vc (m/min) Guide Line Ø 1.4 - 2.8 mm Beschichtet	Coated	12 - 20		12 - 20							
11		O E		O E							11
12		O E		O E							12
13		O E		O E							13
14		O E		O E							14
15											15
16											16
17											17
18											18
21	4 - 10		12 - 20			O E		O E			21
22	4 - 10		12 - 20			O E		O E			22
23	3 - 6		6 - 12			O		O			23
24	3 - 6		6 - 12								24
31	4 - 10		12 - 20							O E	31
32	4 - 10	O E	12 - 20	O E							32
41	2 - 4	2 - 4	4 - 8	4 - 8		O		O			41
42	2 - 4	2 - 4	4 - 8	4 - 8		O		O			42
51											51
52											52
53											53
61	4 - 10		12 - 20			O E		O E			61
62	4 - 10	4 - 10	12 - 20	12 - 20	O E	O E	O E	O E	O E A	O E A	62
63	4 - 10	4 - 10	12 - 20	12 - 20	O E	O E	O E	O E	O E	O E	63
64	4 - 10		12 - 20			O E		O E			64
71	4 - 10	O E	12 - 20	O E							71
72	4 - 10	O E	12 - 20	O E							72
73	4 - 10	O E	12 - 20	O E						O	73
74	4 - 10	O E	12 - 20	O E						O E	74
81	4 - 10	O E	12 - 20	O E							81
82											82
83	4 - 10		12 - 20							E A	83
91	4 - 10		12 - 20								91
92	4 - 10	O	12 - 20	O							92
93	4 - 10	O E	12 - 20	O E					O E	O E	93
94	4 - 10	O	12 - 20	O							94

A **Optimal mit Luft** Optimal with air

A **Geeignet mit Luft** Suitable with air

Bedingt geeignet Limited

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

Inhaltsverzeichnis — Maschinengewindebohrer nano
Directory — Machine taps nano

CLASSIC SYNCHRO

				TAN				TAZ	
Merkmale **Characteristics**				L20	L20 VS	R25	R25 VS	L20	L20 VS
Lochart **Hole type**									
				TAN40	**TAN40VS**	**TAN50**	**TAN50VS**	**TAZ40**	**TAZ40VS**
M	**4H / 6H**	**ISO DIN 14 ISO DIN 13**	**DC ~DIN 371**	338	338	338	338	339	339
MF	**4H / 6H**	**ISO DIN 13**	**DC ~DIN 371**	341	341	341	341	342	342
UNC	**2B**	**ASME B1.1**	**DC ~DIN 371**	344	344	344	344	345	345
	3B	**ASME B1.1**	**DC ~DIN 371**	344	344	344	344	345	345
UNF	**2B**	**ASME B1.1**	**DC ~DIN 371**	347	347	347	347	348	348
	3B	**ASME B1.1**	**DC ~DIN 371**	347	347	347	347	348	348
S	**NIHS**	**NIHS 06 - 10**	**DC**	350	350	350	350	351	351
SF	**NIHS**	**NIHS 06-10 Fine Thread**	**DC**	353	353	353	353	354	354
SL	**Safelock**	**SL 15 - 01**	**DC**	356	356	356	356	357	357

Inhaltsverzeichnis — Maschinengewindebohrer nano
Directory — Machine taps nano

CLASSIC SYNCHRO

TAZ		CMS	
R25	R25 VS	R12	R12 VS
TAZ50	**TAZ50VS**	**CMS50**	**CMS50VS**
339	339	340	340
342	342	343	343
345	345	346	346
345	345	346	346
348	348	349	349
348	348	349	349
351	351	352	352
354	354	355	355
357	357	358	358

M ISO DIN 13 ISO DIN 14

CLASSIC SYNCHRO

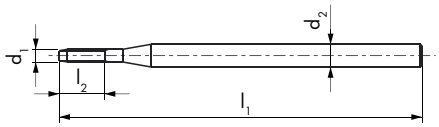
PM

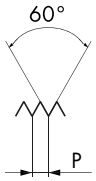
DC – DIN 371

TAN

TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

TAN40	TAN40VS	TAN50	TAN50VS
<2 x D	<2 x D	<2 x D	<2 x D
C 2 x P	C 2 x P	C 2 x P	C 2 x P
4H	4H	4H	4H

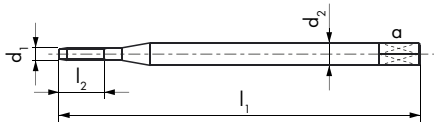


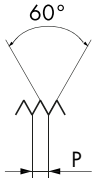


Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm			TAN40 ID	TAN40VS ID	TAN50 ID	TAN50VS ID
0.5	0.125	25	1.5	2	3	Δ0.41	161817	161748	161818	161749
0.6	0.15	25	1.8	2	3	Δ0.5	152512	152511	152545	151766
0.7	0.175	25	2.1	2	3	Δ0.58	152516	152515	152548	152547
0.8	0.2	25	2.4	2	3	Δ0.66	152520	152519	152552	152551
0.9	0.225	25	2.7	2	3	Δ0.74	152524	152523	152555	152554
1	0.25	40	3.0	2.5	3	0.75	152528	152527	152558	151557
1.2	0.25	40	3.6	2.5	3	0.95	152531	151463	152562	152561
1.4	0.3	40	4.2	2.5	3	1.1	152534	151756	152565	151757

Δ 4H5H → 4H6H = +0.02 mm

Δ 4H5H → 4H6H = +0.02 mm





ISO 2 6H

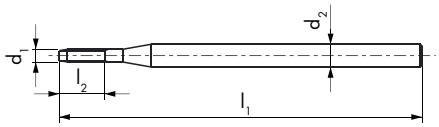
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAN40 ID	TAN40VS ID	TAN50 ID	TAN50VS ID
1.6	0.35	40	4.8	2.5		3	1.25	152538	152537	152569	152568
1.8	0.35	40	5.4	2.5		3	1.45	193841	151461	193915	193952
2	0.4	45	8	2.8	2.1	3	1.6	152542	152541	152573	152572
2.3	0.4	45	9	2.8	2.1	3	1.9	193842	193878	193916	193953
2.5	0.45	50	10	2.8	2.1	3	2.05	193843	193879	193917	193954
2.6	0.45	50	10	2.8	2.1	3	2.15	193844	193880	193918	193955

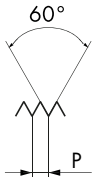
M ISO DIN 13 ISO DIN 14

CLASSIC | SYNCHRO | PM | DC – DIN 371

TAZ

	TAZ40	TAZ40VS	TAZ50	TAZ50VS
	L20	L20 VS	R25	R25 VS
		21 22 23 41 42 61 64		21 22 23 41 42 61 64



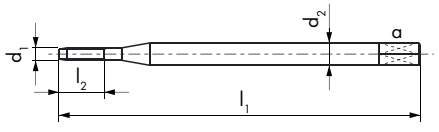


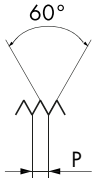
	D 4 x P	D 4 x P	C 2 x P	C 2 x P
	4H	4H	4H	4H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
0.5	0.125	25	1.5	2	3	Δ0.41	193994	194059	194119	194182
0.6	0.15	25	1.8	2	3	Δ0.5	193995	194060	194120	194183
0.7	0.175	25	2.1	2	3	Δ0.58	193996	194061	194121	194184
0.8	0.2	25	2.4	2	3	Δ0.66	193997	194062	194122	194185
0.9	0.225	25	2.7	2	3	Δ0.74	193998	194063	194123	194186
1	0.25	40	3	2.5	3	0.75	193999	194064	194124	183753
1.2	0.25	40	3.6	2.5	3	0.95	194000	194065	194125	194187
1.4	0.3	40	4.2	2.5	3	1.1	194001	194066	194126	194188

Δ 4H5H → 4H6H = +0.02 mm

Δ 4H5H → 4H6H = +0.02 mm





	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
1.6	0.35	40	4.8	2.5		3	1.25	194002	194067	194127	194189
1.8	0.35	40	5.4	2.5		3	1.45	194003	194068	194128	194190
2	0.4	45	8	2.8	2.1	3	1.6	194004	194947	194129	179266
2.3	0.4	45	9	2.8	2.1	3	1.9	194005	194069	194130	194191
2.5	0.45	50	10	2.8	2.1	3	2.05	194006	194070	194131	194192
2.6	0.45	50	10	2.8	2.1	3	2.15	194007	194071	194132	194193

M ISO DIN 13 ISO DIN 14

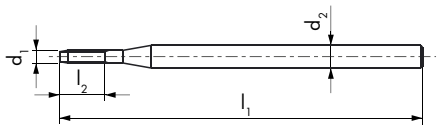
CLASSIC SYNCHRO VHM CAR DC

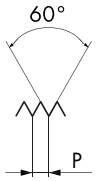
CMS

	CMS50	CMS50VS		

CMS50 R12 — 62 63 93

CMS50VS R12 VS — 31 62 63 73 74 83 93



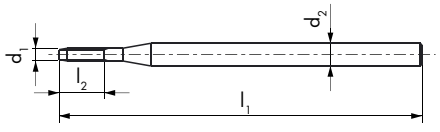


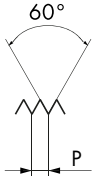
C 2.5 x P — 4H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
0.3	0.08	32	1.1	1.5	3	0.23	193639	193702
0.35	0.09	32	1.3	1.5	3	0.28	193640	193703
0.4	0.1	32	1.5	1.5	3	Δ0.32	193641	193704
0.5	0.125	32	1.8	1.5	3	Δ0.41	193642	193705
0.6	0.15	32	2.2	1.5	3	Δ0.5	193643	193706
0.7	0.175	32	2.6	1.5	3	Δ0.58	193644	193707
0.8	0.2	32	3	1.5	3	Δ0.66	193645	193708
0.9	0.225	32	3.3	1.5	3	Δ0.74	193646	193709
1	0.25	32	3.7	2	3	0.75	193647	193710
1.2	0.25	32	4.5	2	3	0.95	193648	193711
1.4	0.3	32	5.2	2	3	1.1	193649	193712

Δ 4H5H → 4H6H = +0.02 mm

≥ M1 - ≤ M1.4 ISO 1 4H





ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
1.6	0.35	32	6	2	3	1.25	193650	193713
1.8	0.35	32	6.7	2	3	1.45	193651	193714
2	0.4	39	7.5	3	3	1.6	193652	193715
2.3	0.4	39	8.6	3	3	1.9	193653	193716
2.5	0.45	39	9.3	3	3	2.05	193654	193717
2.6	0.45	39	9.7	3	3	2.15	193655	193718

MF ISO DIN 13

CLASSIC SYNCHRO

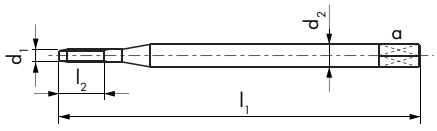
PM

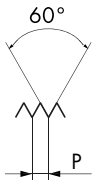
DC – DIN 371

TAN

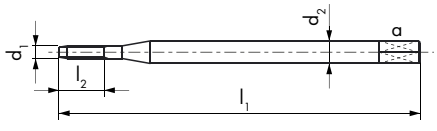
TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

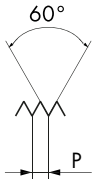
TAN40	TAN40VS	TAN50	TAN50VS
<2 x D	<2 x D	<2 x D	<2 x D
C 2 x P	C 2 x P	C 2 x P	C 2 x P
ISO 1 4H	ISO 1 4H	ISO 1 4H	ISO 1 4H





Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAN40 ID	TAN40VS ID	TAN50 ID	TAN50VS ID
1.4	0.2	40	4.2	2.5		3	1.2	170390	193881	170393	156730
1.6	0.2	40	4.8	2.5		3	1.4	193845	193882	193919	193956
1.8	0.2	40	5.4	2.5		3	1.6	193846	193883	193920	180810
2	0.2	45	6	2.8	2.1	3	1.8	193847	193884	193921	184999
2	0.25	45	6	2.8	2.1	3	1.75	193848	193885	193922	182944
2.2	0.2	45	6.6	2.8	2.1	3	2	193849	193886	193923	179593
2.2	0.25	45	6.6	2.8	2.1	3	1.95	193850	193887	193924	193957
2.3	0.2	45	6.9	2.8	2.1	3	2.1	193851	193888	193925	193958
2.3	0.25	45	6.9	2.8	2.1	3	2.05	193852	193889	193926	193959
2.5	0.2	50	7.5	2.8	2.1	3	2.3	193853	193890	193927	193960
2.5	0.25	50	7.5	2.8	2.1	3	2.25	193854	193891	193928	193961





								ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAN40 ID	TAN40VS ID	TAN50 ID	TAN50VS ID
2.5	0.35	50	7.5	2.8	2.1	3	2.15	193855	193892	193929	193962
2.6	0.35	50	7.8	2.8	2.1	3	2.25	193856	193893	193930	193963

MF ISO DIN 13

CLASSIC SYNCHRO

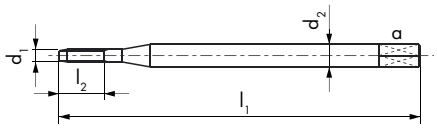
PM

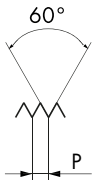
DC – DIN 371

TAZ

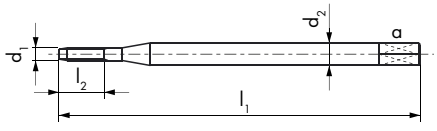
TAZ40	L20		
TAZ40VS	L20	VS	21 22 23 41 42 61 64
TAZ50	R25		
TAZ50VS	R25	VS	21 22 23 41 42 61 64

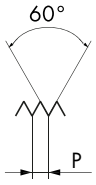
TAZ40	TAZ40VS	TAZ50	TAZ50VS
<2 x D	<2 x D	<2 x D	<2 x D
D 4 x P	D 4 x P	C 2 x P	C 2 x P
ISO 1 4H	ISO 1 4H	ISO 1 4H	ISO 1 4H





Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
1.4	0.2	40	4.2	2.5		3	1.2	194008	194950	194133	194194
1.6	0.2	40	4.8	2.5		3	1.4	194009	194072	194134	181665
1.8	0.2	40	5.4	2.5		3	1.6	194010	194073	194135	190047
2	0.2	45	6	2.8	2.1	3	1.8	194011	194949	194136	194195
2	0.25	45	6	2.8	2.1	3	1.75	194012	194948	194137	185307
2.2	0.2	45	6.6	2.8	2.1	3	2	194013	194074	194138	194196
2.2	0.25	45	6.6	2.8	2.1	3	1.95	194014	194075	194139	194197
2.3	0.2	45	6.9	2.8	2.1	3	2.1	194015	194076	194140	194198
2.3	0.25	45	6.9	2.8	2.1	3	2.05	194016	194077	194141	194199
2.5	0.2	50	7.5	2.8	2.1	3	2.3	194017	194078	194142	194200
2.5	0.25	50	7.5	2.8	2.1	3	2.25	194018	194951	194143	194201





								ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
2.5	0.35	50	7.5	2.8	2.1	3	2.15	194019	194079	194144	194202
2.6	0.35	50	7.8	2.8	2.1	3	2.25	194020	194080	194145	194203

MF ISO DIN 13

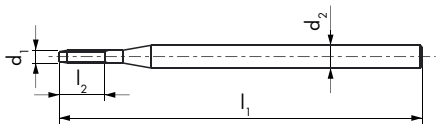
CLASSIC | SYNCHRO | VHM CAR | DC

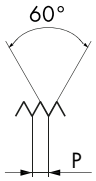
CMS

	CMS50	CMS50VS		

CMS50 R12 — 62 / 63 / 93

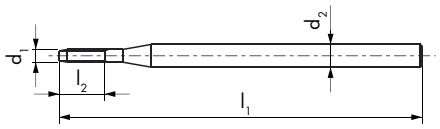
CMS50VS R12 VS — 31 / 62 / 63 / 73 / 74 / 83 / 93

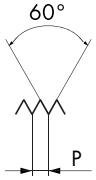




	CMS50	CMS50VS		
	C 2.5 x P	C 2.5 x P		
	ISO 1 4H	ISO 1 4H		

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
1.4	0.2	32	5.2	2	3	1.2	● 193656	● 193719
1.6	0.2	32	6	2	3	1.4	● 193657	● 193720
1.8	0.2	32	6.7	2	3	1.6	● 193658	● 193721
2	0.2	39	7.5	3	3	1.8	● 193659	● 193722
2	0.25	39	7.5	3	3	1.75	● 193660	● 193723
2.2	0.2	39	8.2	3	3	2	● 193661	● 193724
2.2	0.25	39	8.2	3	3	1.95	● 193662	● 193725
2.3	0.2	39	8.6	3	3	2.1	● 193663	● 193726
2.3	0.25	39	8.6	3	3	2.05	● 193664	● 193727
2.5	0.2	39	9.3	3	3	2.3	● 193665	● 193728
2.5	0.25	39	9.3	3	3	2.25	● 193666	● 193729





	CMS50	CMS50VS		
	ISO 2 6H	ISO 2 6H		

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
2.5	0.35	39	9.3	3	3	2.15	● 193667	● 193730
2.6	0.35	39	9.7	3	3	2.25	● 193668	● 193731

UNC ASME B1.1

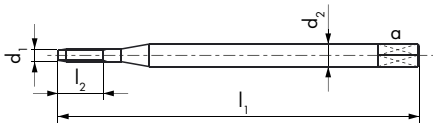
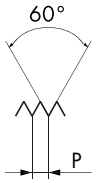
CLASSIC SYNCHRO

PM

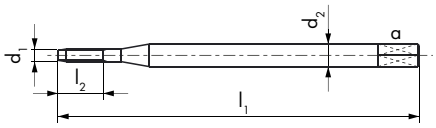
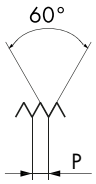
DC – DIN 371

TAN

TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

TAN40	TAN40VS	TAN50	TAN50VS
 			
C 2xP	C 2xP	C 2xP	C 2xP
2B	2B	2B	2B

Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1	64	1.85	40	5.6	2.5		3	1.45	● 193857	● 193894	● 193931	● 193964
2	56	2.18	45	9	2.8	2.1	3	1.75	● 193858	● 193895	● 193932	● 193965
3	48	2.51	50	10	2.8	2.1	3	2	● 193859	● 193896	● 193933	● 193966

3B 3B 3B 3B

Ø d_1 UNC(J)	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1	64	1.85	40	5.6	2.5		3	1.45	● 193860	● 193897	● 193934	● 193967
2	56	2.18	45	9	2.8	2.1	3	1.75	● 193861	● 193898	● 193935	● 193968
3	48	2.51	50	10	2.8	2.1	3	2	● 193862	● 193899	● 193936	● 193969

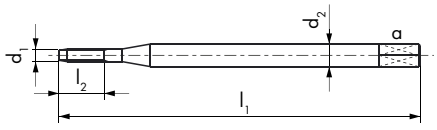
UNC ASME B1.1

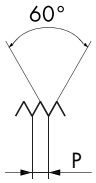
CLASSIC | SYNCHRO | PM | DC – DIN 371

TAZ

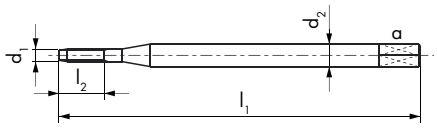
TAZ40	L20		
TAZ40VS	L20	VS	21 22 23 41 42 61 64
TAZ50	R25		
TAZ50VS	R25	VS	21 22 23 41 42 61 64

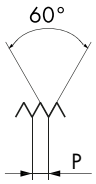
TAZ40	TAZ40VS	TAZ50	TAZ50VS
D 4xP	D 4xP	C 2xP	C 2xP
2B	2B	2B	2B





Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1	64	1.85	40	5.6	2.5		3	1.45	194021	194081	194146	194204
2	56	2.18	45	9	2.8	2.1	3	1.75	194022	194082	194147	194205
3	48	2.51	50	10	2.8	2.1	3	2	194023	194083	194148	194206





									3B	3B	3B	3B
Ø d_1 UNC(J)	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1	64	1.85	40	5.6	2.5		3	1.45	194024	194084	194149	194207
2	56	2.18	45	9	2.8	2.1	3	1.75	194025	194085	194150	194208
3	48	2.51	50	10	2.8	2.1	3	2	194026	194086	194151	194209

UNC ASME B1.1

CLASSIC SYNCHRO

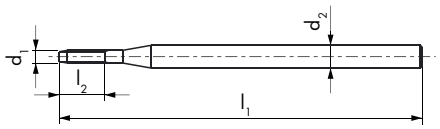
VHM CAR

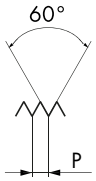
DC

CMS

CMS50	R12		62 63 93
CMS50VS	R12	VS	31 62 63 73 74 83 93

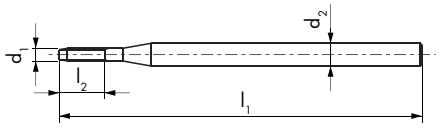
CMS50	CMS50VS		
<3 x D	<3 x D		

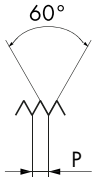




C 2.5 x P — 2B

Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
1	64	1.85	32	6.9	2	3	1.45	● 193669	● 193732
2	56	2.18	39	8.1	3	3	1.75	● 193670	● 193733
3	48	2.51	39	9.4	3	3	2	● 193671	● 193734





3B

Ø d_1 UNC(J)	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
1	64	1.85	32	6.9	2	3	1.45	● 193672	● 193735
2	56	2.18	39	8.1	3	3	1.75	● 193673	● 193736
3	48	2.51	39	9.4	3	3	2	● 193674	● 193737

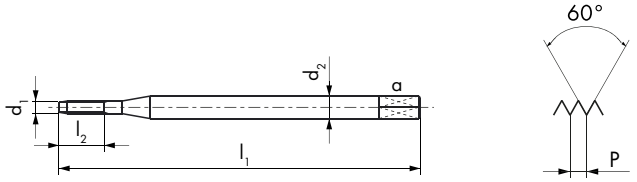
UNF ASME B1.1

CLASSIC | SYNCHRO | PM | DC – DIN 371

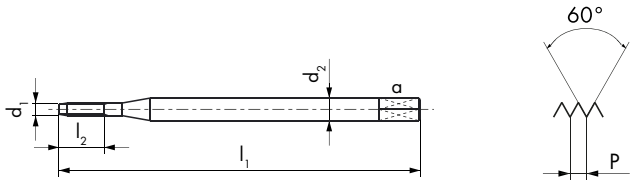
TAN

TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

TAN40	TAN40VS	TAN50	TAN50VS



									TAN40	TAN40VS	TAN50	TAN50VS
Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
0	80	1.52	40	4.6	2.5		3	1.2	● 193863	● 193900	● 193937	● 193970
1	72	1.85	40	5.6	2.5		3	1.5	● 193864	● 193901	● 193938	● 193971
2	64	2.18	45	9	2.8	2.1	3	1.8	● 193865	● 193902	● 193939	● 193972
3	56	2.51	50	10	2.8	2.1	3	2.1	● 193866	● 193903	● 193940	● 193973



									TAN40	TAN40VS	TAN50	TAN50VS
Ø d_1 UNF(J)	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
0	80	1.52	40	4.6	2.5		3	1.2	● 193867	● 193904	● 193941	● 193974
1	72	1.85	40	5.6	2.5		3	1.5	● 193868	● 193905	● 193942	● 193975
2	64	2.18	45	9	2.8	2.1	3	1.8	● 193869	● 193906	● 193943	● 193976
3	56	2.51	50	10	2.8	2.1	3	2.1	● 193870	● 193907	● 193944	● 193977

UNF ASME B1.1

CLASSIC SYNCHRO

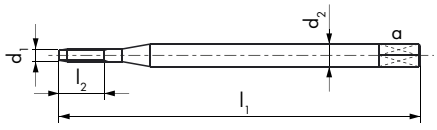
PM

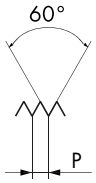
DC – DIN 371

TAZ

TAZ40	L20		
TAZ40VS	L20	VS	21 22 23 41 42 61 64
TAZ50	R25		
TAZ50VS	R25	VS	21 22 23 41 42 61 64

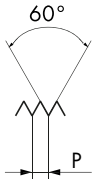
TAZ40	TAZ40VS	TAZ50	TAZ50VS





D 4 x P	D 4 x P	C 2 x P	C 2 x P
2B	2B	2B	2B

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
0	80	1.52	40	4.6	2.5		3	1.2	194027	194087	194152	194210
1	72	1.85	40	5.6	2.5		3	1.5	194028	194088	194153	194211
2	64	2.18	45	9	2.8	2.1	3	1.8	194029	194089	194154	194212
3	56	2.51	50	10	2.8	2.1	3	2.1	194030	194090	194155	194213



3B	3B	3B	3B

Ø d_1 UNF(J)	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
0	80	1.52	40	4.6	2.5		3	1.2	194031	194091	194156	194214
1	72	1.85	40	5.6	2.5		3	1.5	194032	194092	194157	194215
2	64	2.18	45	9	2.8	2.1	3	1.8	194033	194093	194158	194216
3	56	2.51	50	10	2.8	2.1	3	2.1	194034	194094	194159	194217

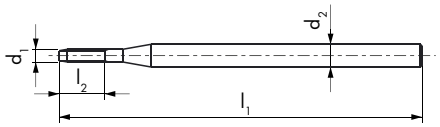
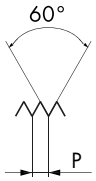
UNF ASME B1.1

CLASSIC SYNCHRO

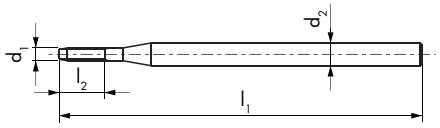
VHM CAR

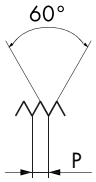
DC

CMS

	CMS50	CMS50VS		
				
	2B	2B		

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
0	80	1.52	32	5.7	2	3	1.2	● 193675	● 193738
1	72	1.85	32	6.9	2	3	1.5	● 193676	● 193739
2	64	2.18	39	8.1	3	3	1.8	● 193677	● 193740
3	56	2.51	39	9.4	3	3	2.1	● 193678	● 193741





3B 3B

Ø d_1 UNF(J)	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
0	80	1.52	32	5.7	2	3	1.2	● 193679	● 193742
1	72	1.85	32	6.9	2	3	1.5	● 193680	● 193743
2	64	2.18	39	8.1	3	3	1.8	● 193681	● 193744
3	56	2.51	39	9.4	3	3	2.1	● 193682	● 193745

S NIHS 06-10

CLASSIC SYNCHRO

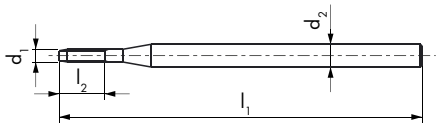
PM

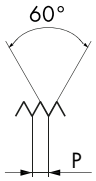
DC

TAN

TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

TAN40	TAN40VS	TAN50	TAN50VS
NIHS	NIHS	NIHS	NIHS





Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 mm			ID	ID	ID	ID
0.5	0.125	25	1.5	2	3	Δ0.41	161816	157021	159301	158384
0.6	0.15	25	1.8	2	3	Δ0.5	152510	152509	151567	152544
0.7	0.175	25	2.1	2	3	Δ0.58	152514	152513	151768	152546
0.8	0.2	25	2.4	2	3	Δ0.66	152518	152517	152550	152549
0.9	0.225	25	2.7	2	3	Δ0.74	152522	152521	152553	151563
1	0.25	40	3	2.5	3	Δ0.82	152526	152525	152557	152556
1.2	0.25	40	3.6	2.5	3	Δ1.02	152530	152529	152560	152559
1.4	0.3	40	4.2	2.5	3	Δ1.18	152533	152532	152564	152563

Δ 4H5H → 4H6H = +0.02 mm

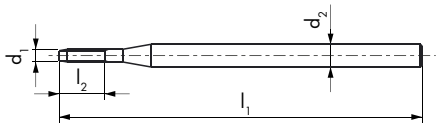
S NIHS 06-10

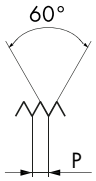
CLASSIC SYNCHRO PM DC

TAZ

TAZ40	L20		
TAZ40VS	L20	VS	21 22 23 41 42 61 64
TAZ50	R25		
TAZ50VS	R25	VS	21 22 23 41 42 61 64

TAZ40	TAZ40VS	TAZ50	TAZ50VS
<2 x D	<2 x D	<2 x D	<2 x D
D 4 x P	D 4 x P	C 2 x P	C 2 x P
NIHS	NIHS	NIHS	NIHS





Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 mm			ID	ID	ID	ID
0.5	0.125	25	1.5	2	3	Δ0.41	193978	194043	194103	194168
0.6	0.15	25	1.8	2	3	Δ0.5	193979	194044	194104	194169
0.7	0.175	25	2.1	2	3	Δ0.58	193980	194045	194105	194170
0.8	0.2	25	2.4	2	3	Δ0.66	193981	194046	194106	188515
0.9	0.225	25	2.7	2	3	Δ0.74	193982	194047	194107	188521
1	0.25	40	3	2.5	3	Δ0.82	193983	194048	194108	194171
1.2	0.25	40	3.6	2.5	3	Δ1.02	193984	194049	194109	194172
1.4	0.3	40	4.2	2.5	3	Δ1.18	193985	194050	194110	194173

Δ 4H5H → 4H6H = +0.02 mm

S NIHS 06-10

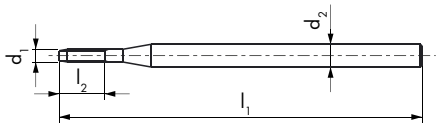
CLASSIC | SYNCHRO | VHM CAR | DC

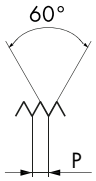
CMS

	CMS50	CMS50VS
	<3 x D	<3 x D
	C 2.5 x P	C 2.5 x P
	NIHS	NIHS

CMS50 R12 62 63 93

CMS50VS R12 VS 31 62 63 73 74 83 93





Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
0.3	0.08	32	1.1	1.5	3	0.23	● 178257	● 193683
0.35	0.09	32	1.3	1.5	3	0.28	● 178260	● 193684
0.4	0.1	32	1.5	1.5	3	Δ0.32	● 178263	● 193685
0.5	0.125	32	1.8	1.5	3	Δ0.41	● 178266	● 193686
0.6	0.15	32	2.2	1.5	3	Δ0.5	● 178269	● 193687
0.7	0.175	32	2.6	1.5	3	Δ0.58	● 178272	● 193688
0.8	0.2	32	3	1.5	3	Δ0.66	● 178275	● 193689
0.9	0.225	32	3.3	1.5	3	Δ0.74	● 178278	● 193690
1	0.25	32	3.7	2	3	Δ0.82	● 178281	● 193691
1.2	0.25	32	4.5	2	3	Δ1.02	● 178284	● 193692
1.4	0.3	32	5.2	2	3	Δ1.18	● 178287	● 193693

Δ 4H5H → 4H6H = +0.02 mm

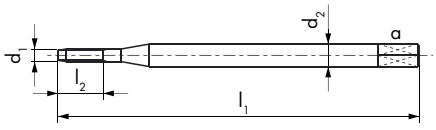
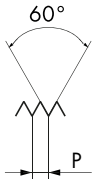
SF

NIHS 06-10 Fine Thread

CLASSIC | SYNCHRO | PM | DC – DIN 371

TAN

TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

TAN40	TAN40VS	TAN50	TAN50VS
			
C 2xP NIHS	C 2xP NIHS	C 2xP NIHS	C 2xP NIHS

Ø d_1 SF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1.4	0.2	40	4.2	2.5		3	Δ1.26	193833	170491	169767	170492
1.6	0.2	40	4.8	2.5		3	Δ1.46	193834	193871	193908	193945
1.8	0.2	40	5.4	2.5		3	Δ1.66	193835	193872	193909	193946
2	0.2	45	6	2.8	2.1	3	Δ1.86	193836	193873	193910	193947
2.2	0.2	45	6.6	2.8	2.1	3	Δ2.06	193837	193874	193911	193948
2.2	0.25	45	6.6	2.8	2.1	3	Δ2.02	193838	193875	193912	193949
2.5	0.2	50	7.5	2.8	2.1	3	Δ2.36	193839	193876	193913	193950
2.5	0.25	50	7.5	2.8	2.1	3	Δ2.32	193840	193877	193914	193951

Δ 4H5H → 4H6H = +0.02 mm

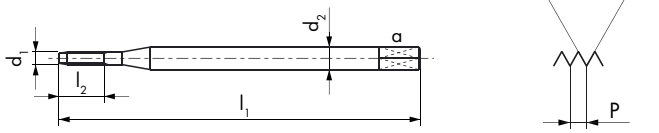
SF

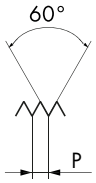
NIHS 06-10 Fine Thread

CLASSIC | SYNCHRO | PM | DC – DIN 371

TAZ

	TAZ40	TAZ40VS	TAZ50	TAZ50VS
	L20	L20 VS	R25	R25 VS
		21 22 23 41 42 61 64		21 22 23 41 42 61 64





	TAZ40	TAZ40VS	TAZ50	TAZ50VS
	D 4 x P	D 4 x P	C 2 x P	C 2 x P
	NIHS	NIHS	NIHS	NIHS

Ø d_1 SF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			TAZ40 ID	TAZ40VS ID	TAZ50 ID	TAZ50VS ID
1.4	0.2	40	4.2	2.5		3	Δ1.26	193986	194051	194111	194174
1.6	0.2	40	4.8	2.5		3	Δ1.46	193987	194052	194112	194175
1.8	0.2	40	5.4	2.5		3	Δ1.66	193988	194053	194113	194176
2	0.2	45	6	2.8	2.1	3	Δ1.86	193989	194054	194114	194177
2.2	0.2	45	6.6	2.8	2.1	3	Δ2.06	193990	194055	194115	194178
2.2	0.25	45	6.6	2.8	2.1	3	Δ2.02	193991	194056	194116	194179
2.5	0.2	50	7.5	2.8	2.1	3	Δ2.36	193992	194057	194117	194180
2.5	0.25	50	7.5	2.8	2.1	3	Δ2.32	193993	194058	194118	194181

Δ 4H5H → 4H6H = +0.02 mm

SF

NIHS 06-10 Fine Thread

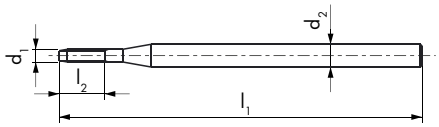
CLASSIC | SYNCHRO | VHM CAR | DC

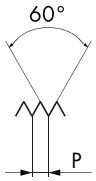
CMS

	CMS50	CMS50VS		
	NIHS	NIHS		

CMS50 R12 — 62 / 63 / 93

CMS50VS R12 VS — 31 / 62 / 63 / 73 / 74 / 83 / 93



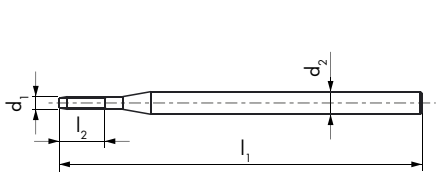


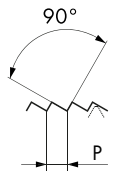
Ø d_1 SF	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
1.4	0.2	32	5.2	2	3	Δ1.26	180329	193694
1.6	0.2	32	6	2	3	Δ1.46	193632	193695
1.8	0.2	32	6.7	2	3	Δ1.66	193633	193696
2	0.2	39	7.5	3	3	Δ1.86	193634	193697
2.2	0.2	39	8.2	3	3	Δ2.06	193635	193698
2.2	0.25	39	8.2	3	3	Δ2.02	193636	193699
2.5	0.2	39	9.3	3	3	Δ2.36	193637	193700
2.5	0.25	39	9.3	3	3	Δ2.32	193638	193701

Δ 4H5H → 4H6H = +0.02 mm

TAN

TAN40	L20		62 63 91
TAN40VS	L20	VS	11 12 13 14 32 62 63 71 72 73 74 81 93
TAN50	R25		62 63 91
TAN50VS	R25	VS	11 12 13 14 32 62 63 71 72 73 74 81 93

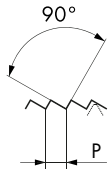




Ø d_1 SL	P mm	l_1 mm	l_2 mm	d_2 mm			TAN40 ID	TAN40VS ID	TAN50 ID	TAN50VS ID
0.5	0.1	25	1.5	2	3	0.46	600065	600073	600081	600089
0.6	0.125	25	1.8	2	3	0.55	600066	600074	600082	600090
0.7	0.15	25	2.1	2	3	0.64	600067	600075	600083	600091
0.8	0.15	25	2.4	2	3	0.74	600068	600076	600084	600092
0.9	0.175	25	2.7	2	3	0.83	600069	600077	600085	600093
1	0.2	40	3	2.5	3	0.92	600070	600078	600086	600094
1.2	0.2	40	3.6	2.5	3	1.12	600071	600079	600087	600095
1.4	0.25	40	4.2	2.5	3	1.3	600072	600080	600088	600096

TAZ

	TAZ40	TAZ40VS	TAZ50	TAZ50VS
	L20	L20 VS	R25	R25 VS
Coolant		21 22 23 41 42 61 64		21 22 23 41 42 61 64



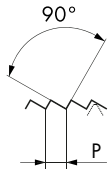
Ø d_1 SL	P mm	l_1 mm	l_2 mm	d_2 mm			ID	ID	ID	ID
0.5	0.1	25	1.5	2	3	0.46	600210	600218	600194	600202
0.6	0.125	25	1.8	2	3	0.55	600211	600219	600195	600203
0.7	0.15	25	2.1	2	3	0.64	600212	600220	600196	600204
0.8	0.15	25	2.4	2	3	0.74	600213	600221	600197	600205
0.9	0.175	25	2.7	2	3	0.83	600214	600222	600198	600206
1	0.2	40	3	2.5	3	0.92	600215	600223	600199	600207
1.2	0.2	40	3.6	2.5	3	1.12	600216	600224	600200	600208
1.4	0.25	40	4.2	2.5	3	1.3	600217	600225	600201	600209

CMS

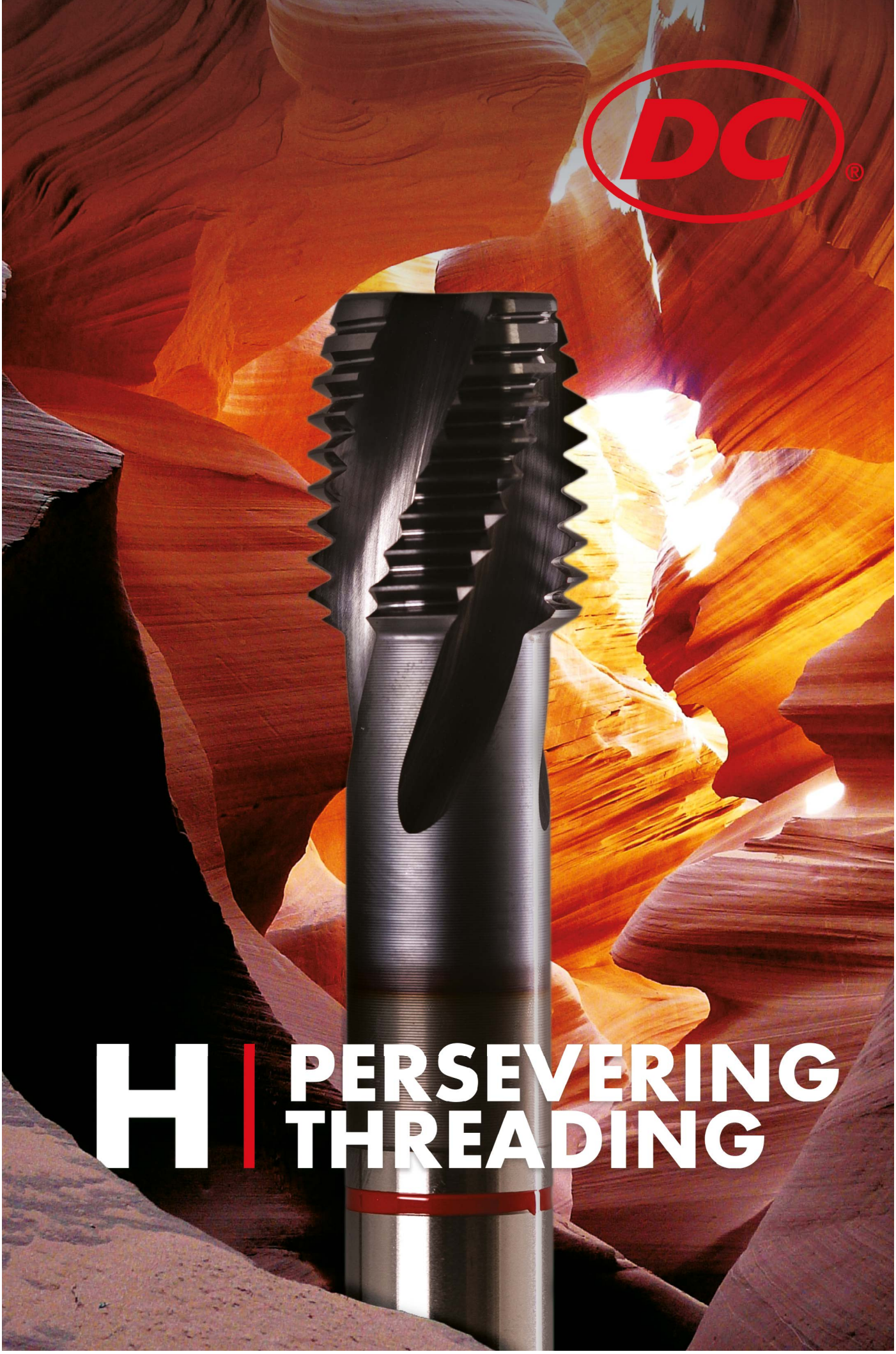
	CMS50	CMS50VS		

CMS50 R12 — 62 63 93

CMS50VS R12 VS — 31 62 63 73 74 83 93



Ø d_1 SL	P mm	l_1 mm	l_2 mm	d_2 h5 mm			ID	ID
0.3	0.06	32	1.1	1.5	3	0.27	• 600097	• 600226
0.35	0.06	32	1.3	1.5	3	0.32	• 600098	• 600227
0.4	0.08	32	1.5	1.5	3	0.36	• 600099	• 600228
0.5	0.1	32	1.8	1.5	3	0.46	• 600039	• 600229
0.6	0.125	32	2.2	1.5	3	0.55	• 600040	• 600230
0.7	0.15	32	2.6	1.5	3	0.64	• 600041	• 600231
0.8	0.15	32	3	1.5	3	0.74	• 600042	• 600232
0.9	0.175	32	3.3	1.5	3	0.83	• 600043	• 600233
1	0.2	32	3.7	2	3	0.92	• 600044	• 600234
1.2	0.2	32	4.5	2	3	1.12	• 600045	• 600235
1.4	0.25	32	5.2	2	3	1.3	• 600046	• 600236


DC
H | PERSEVERING THREADING

GEWINDEFORMER NANO
THREAD FORMERS NANO

DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		*Werkstoffbezeichnung*	Material designation	*Härte* Hardness (HB)	*Festigkeit* Tensile strength Rm (N/mm²)	*Dehnung* Elongation A (%)
10	*Stahl* Steels	11	*Automatenstahl*	Free-cutting steels	< 200	< 700	< 10
		12	*Baustahl, Einsatzstahl*	Structural, cementation steels	< 200	< 700	< 30
		13	*Kohlenstoffstahl*	Carbon steels	< 300	< 1000	< 20
		14	*Stahl legiert < 850 N/mm²*	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	*Stahl legiert / vergütet > 850 - < 1150 N/mm²*	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	*Hochfester Stahl ≤ 44 HRC*	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	*Stahl gehärtet > 54 - ≤ 63 HRC*	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	*Rostfreier Stahl* Stainless steels	21	*Rostfreier Stahl, geschwefelt*	Free machining stainless steels	< 250	< 850	< 25
		22	*Austenitisch*	Austenitic stainless steels	< 250	< 850	> 20
		23	*Ferritisch, martensitisch < 850 N/mm²*	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	*Ferritisch, martensitisch > 850 - < 1150 N/mm²*	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	*Guss* Cast iron	31	*Grauguss*	Cast iron	< 250	< 850	< 10
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	*Titan* Titanium	41	*Reintitan*	Pure titanium	< 250	< 850	> 20
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	< 20
50	*Nickel* Nickel	51	*Nickellegierung 1 ≤ 850 N/mm²*	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	*Nickellegierung 2 > 850 - ≤ 1150 N/mm²*	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	*Kupfer* Copper	61	*Reinkupfer (Elektrolytkupfer)*	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	*Messing, Bronze, Rotguss (kurzspanend)*	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	> 12
		64	*Messing bleifrei*	Lead free brass	< 220	< 700	> 15
70	*Aluminium Magnesium* Aluminium Magnesium	71	*Al unlegiert*	Al unalloyed	< 100	< 350	> 15
		72	*Al legiert Si < 1.5 %*	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	*Al legiert Si > 1.5 % - < 10 %*	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	*Al legiert Si > 10 %, Mg-Legierungen*	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	*Silber*	Silver	-	-	-

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

GEWINDEFORMER NANO — THREAD FORMERS NANO

CLASSIC SYNCHRO

Ab Seite: From page:
M
MF
UNC
UNF
S
SF
SL

	Vc (m/min) Guide Line Ø 0.3 - 1.4 mm Beschichtet Coated	Ø 1.4 - 2.8 mm Beschichtet Coated	FA Normale Werkstoffe Normal materials FA80VS	FA83VS	CFA Nichteisen-Metalle Non-ferrous materials CFA80VS	CFA83VS	
			363	363	370	370	
			364	364			
			365	365	371	371	
			366	366	372	372	
			367	367	373	373	
			368	368			
			369	369			
			FA80VS	FA83VS	CFA80VS	CFA83VS	
11	4 - 10	12 - 20	O E	O E			11
12	4 - 10	12 - 20	O E	O E			12
13	4 - 10	12 - 20	O E	O E			13
14	4 - 10	12 - 20	O E	O E			14
15	3 - 6	6 - 12	O	O			15
16							16
17							17
18							18
21	4 - 10	12 - 20	O E	O E			21
22	3 - 6	6 - 12	O E	O E			22
23	3 - 6	6 - 12	O E	O E			23
24	3 - 6	6 - 12	O	O			24
31							31
32							32
41							41
42							42
51	3 - 6	6 - 12	O	O			51
52							52
53							53
61	4 - 10	12 - 20	O E	O E			61
62	4 - 10	12 - 20			O E	O E	62
63	4 - 10	12 - 20	O E	O E	O E	O E	63
64	4 - 10	12 - 20	O E	O E			64
71	4 - 10	12 - 20	O E	O E			71
72	4 - 10	12 - 20	O E	O E			72
73	4 - 10	12 - 20	O E	O E			73
74							74
81							81
82							82
83							83
91	4 - 10	12 - 20	O E	O E	O E	O E	91
92	4 - 10	12 - 20	O E	O E	O E	O E	92
93	4 - 10	12 - 20					93
94	4 - 10	12 - 20	O E	O E	O E	O E	94

A *Optimal mit Luft* Optimal with air

A *Geeignet mit Luft* Suitable with air

Bedingt geeignet Limited

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

Inhaltsverzeichnis — Maschinengewindeformer nano
Directory — Machine thread formers nano

CLASSIC SYNCHRO

				FA		CFA	
Merkmale **Characteristics**				VS E 1.5 x P	VS C 2.5 x P	VS E 1.5 x P	VS C 2.5 x P
Lochart **Hole type**				< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
				FA80VS	**FA83VS**	**CFA80VS**	**CFA83VS**
M	**4HX / 6HX**	**ISO DIN 14 ISO DIN 13**	**DC ~DIN 371**	363	363	370	370
MF	**4HX / 6HX**	**ISO DIN 13**	**DC ~DIN 371**	364	364		
UNC	**2BX**	**ASME B1.1**	**DC ~DIN 371**	365	365	371	371
	3BX	**ASME B1.1**	**DC ~DIN 371**	365	365		
UNF	**2BX**	**ASME B1.1**	**DC ~DIN 371**	366	366	372	372
	3BX	**ASME B1.1**	**DC ~DIN 371**	366	366		
S	**NIHS**	**NIHS 06 - 10**	**DC**	367	367	373	373
SF	**NIHS**	**NIHS 06-10 Fine Thread**	**DC**	368	368		
SL	**Safelock**	**SL 15 - 01**	**DC**	369	369		

M ISO DIN 13 ISO DIN 14

CLASSIC SYNCHRO

PM

DC – DIN 371

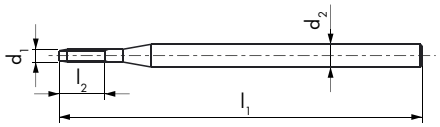
FA

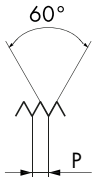
FA80VS	FA83VS		

FA80VS VS

FA83VS VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94





E 1.5 x P

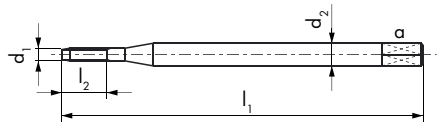
C 2.5 x P

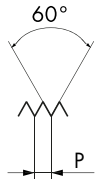
4HX

4HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm		ID	ID
0.5	0.125	25	1.5	2	Δ 0.44	● 161750	● 173719
0.6	0.15	25	1.8	2	Δ 0.53	● 152412	● 173720
0.7	0.175	25	2.1	2	Δ 0.62	● 152415	● 173721
0.8	0.2	25	2.4	2	Δ 0.71	● 152418	● 173722
0.9	0.225	25	2.7	2	Δ 0.8	● 152421	● 173723
1	0.25	40	3	2.5	Δ 0.88	● 151559	● 173729
1.2	0.25	40	3.6	2.5	Δ 1.08	● 151565	● 173730
1.4	0.3	40	4.2	2.5	Δ 1.25	● 152429	● 173731

Δ Tol. = +0/0.02 mm





6HX

6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
1.6	0.35	40	4.8	2.5		Δ 1.45	● 152433	● 193801
1.8	0.35	40	5.4	2.5		Δ 1.65	● 193764	● 193802
2	0.4	45	8	2.8	2.1	Δ 1.8	● 151566	● 193803
2.3	0.4	45	9	2.8	2.1	Δ 2.1	● 193765	● 193804
2.5	0.45	50	10	2.8	2.1	Δ 2.3	● 193766	● 193805
2.6	0.45	50	10	2.8	2.1	Δ 2.4	● 193767	● 193806

Δ Tol. = +0/0.02 mm

MF ISO DIN 13

CLASSIC | SYNCHRO | PM | DC – DIN 371

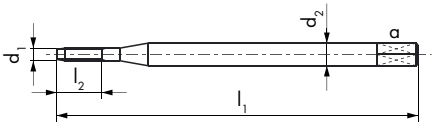
FA

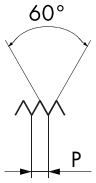
FA80VS | VS

FA83VS | VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94

FA80VS	FA83VS
< 2.5 x D	< 2.5 x D



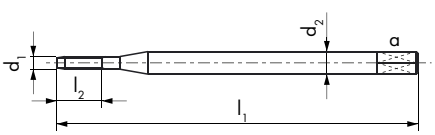


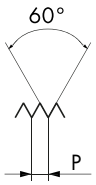
E 1.5 x P | C 2.5 x P

4HX | 4HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
1.4	0.2	40	4.2	2.5		Δ 1.31	155928	180436
1.6	0.2	40	4.8	2.5		Δ 1.51	156480	193807
1.8	0.2	40	5.4	2.5		Δ 1.71	193768	193808
2	0.2	45	6	2.8	2.1	Δ 1.91	193769	193809
2	0.25	45	6	2.8	2.1	Δ 1.88	193770	193810
2.2	0.2	45	6.6	2.8	2.1	Δ 2.11	193771	193811
2.2	0.25	45	6.6	2.8	2.1	Δ 2.08	193772	193812
2.3	0.2	45	6.9	2.8	2.1	Δ 2.21	193773	193813
2.3	0.25	45	6.9	2.8	2.1	Δ 2.18	193774	193814
2.5	0.2	50	7.5	2.8	2.1	Δ 2.41	193775	193815
2.5	0.25	50	7.5	2.8	2.1	Δ 2.38	193776	193816

Δ Tol. = +0/0.02 mm





6HX | 6HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
2.5	0.35	50	7.5	2.8	2.1	Δ 2.35	193777	193817
2.6	0.35	50	7.8	2.8	2.1	Δ 2.45	193778	193818

Δ Tol. = +0/0.02 mm

UNC ASME B1.1

CLASSIC SYNCHRO

PM

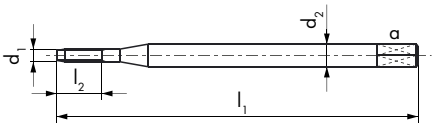
DC – DIN 371

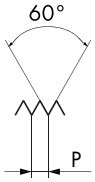
FA

	FA80VS	FA83VS		

FA80VS

FA83VS



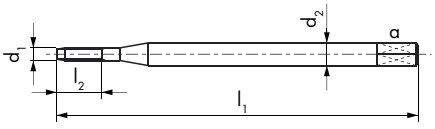


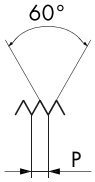
E 1.5 x P — C 2.5 x P

2BX — 2BX

Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm	Δ	ID	ID
1	64	1.85	40	5.6	2.5		Δ1.65	● 193779	● 193819
2	56	2.18	45	9	2.8	2.1	Δ2	● 193780	● 193820
3	48	2.51	50	10	2.8	2.1	Δ2.25	● 193781	● 193821

Δ Tol. = +0/0.02 mm





3BX — 3BX

Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm	Δ	ID	ID
1	64	1.85	40	5.6	2.5		Δ1.65	● 193782	● 193822
2	56	2.18	45	9	2.8	2.1	Δ2	● 193783	● 193823
3	48	2.51	50	10	2.8	2.1	Δ2.25	● 193784	● 193824

Δ Tol. = +0/0.02 mm

UNF ASME B1.1

CLASSIC SYNCHRO

PM

DC – DIN 371

FA

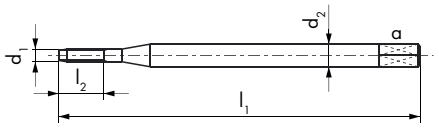
FA80VS	FA83VS		

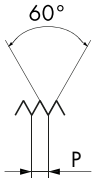
FA80VS

VS

FA83VS

VS



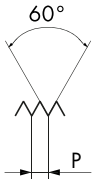


2BX

2BX

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
0	80	1.52	40	4.6	2.5		Δ1.4	● 193785	● 193825
1	72	1.85	40	5.6	2.5		Δ1.7	● 193786	● 193826
2	64	2.18	45	9	2.8	2.1	Δ2	● 193787	● 193827
3	56	2.51	50	10	2.8	2.1	Δ2.3	● 193788	● 193828

Δ Tol. = +0/0.02 mm



3BX

3BX

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
0	80	1.52	40	4.6	2.5		Δ1.4	● 193789	● 193829
1	72	1.85	40	5.6	2.5		Δ1.7	● 193790	● 193830
2	64	2.18	45	9	2.8	2.1	Δ2	● 193791	● 193831
3	56	2.51	50	10	2.8	2.1	Δ2.3	● 193792	● 193832

Δ Tol. = +0/0.02 mm

S NIHS 06-10

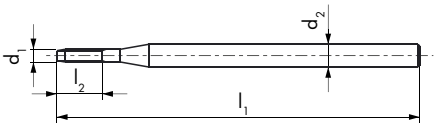
CLASSIC SYNCHRO PM DC

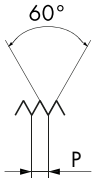
FA

FA80VS	FA83VS		

FA80VS VS

FA83VS VS





NIHS NIHS

Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 mm		ID	ID
0.5	0.125	25	1.5	2	Δ 0.44	● 158977	● 173724
0.6	0.15	25	1.8	2	Δ 0.53	● 151561	● 173725
0.7	0.175	25	2.1	2	Δ 0.62	● 151742	● 173726
0.8	0.2	25	2.4	2	Δ 0.71	● 151564	● 173727
0.9	0.225	25	2.7	2	Δ 0.8	● 151562	● 173728
1	0.25	40	3.0	2.5	Δ 0.88	● 151542	● 173732
1.2	0.25	40	3.6	2.5	Δ 1.08	● 151543	● 173733
1.4	0.3	40	4.2	2.5	Δ 1.25	● 152427	● 173734

Δ **Tol. =** +0/0.02 mm

SF

NIHS 06-10 Fine Thread

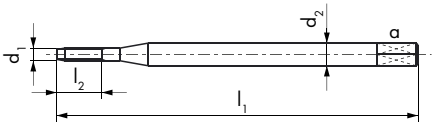
CLASSIC | SYNCHRO | PM | DC – DIN 371

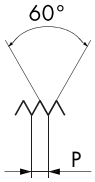
FA

	FA80VS	FA83VS		

FA80VS

FA83VS





							FA80VS	FA83VS
Ø d_1 SF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
1.4	0.2	40	4.2	2.5		Δ1.31	● 176180	● 193793
1.6	0.2	40	4.8	2.5		Δ1.51	● 193757	● 193794
1.8	0.2	40	5.4	2.5		Δ1.71	● 193758	● 193795
2	0.2	45	6	2.8	2.1	Δ1.91	● 193759	● 193796
2.2	0.2	45	6.6	2.8	2.1	Δ2.11	● 193760	● 193797
2.2	0.25	45	6.6	2.8	2.1	Δ2.08	● 193761	● 193798
2.5	0.2	50	7.5	2.8	2.1	Δ2.41	● 193762	● 193799
2.5	0.25	50	7.5	2.8	2.1	Δ2.38	● 193763	● 193800

Δ Tol. = +0/0.02 mm

SL SL 15-01

Micro Safelock®

CLASSIC SYNCHRO

PM

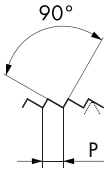
FA

FA80VS VS

FA83VS VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94

FA80VS	FA83VS		



Ø d_1 SL	P mm	l_1 mm	l_2 mm	d_2 mm	ID	ID
0.5	0.1	25	1.5	2	600049	600100
0.6	0.125	25	1.8	2	600050	600101
0.7	0.15	25	2.1	2	600051	600102
0.8	0.15	25	2.4	2	600052	600103
0.9	0.175	25	2.7	2	600053	600104
1	0.2	40	3	2.5	600054	600105
1.2	0.2	40	3.6	2.5	600055	600106
1.4	0.25	40	4.2	2.5	600056	600107

M ISO DIN 13 ISO DIN 14

CLASSIC SYNCHRO

VHM CAR

DC

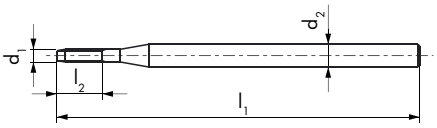
CFA

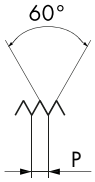
CFA80VS	CFA83VS		

CFA80VS VS

62 63 91 92 94

CFA83VS VS

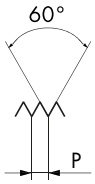




4HX 4HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2h5 mm		ID	ID
0.5	0.125	32	1.5	1.5	Δ0.44	● 171771	● 193611
0.6	0.15	32	1.8	1.5	Δ0.53	● 171773	● 193612
0.7	0.175	32	2.1	1.5	Δ0.62	● 171775	● 193613
0.8	0.2	32	2.4	1.5	Δ0.71	● 171777	● 193614
0.9	0.225	32	2.7	1.5	Δ0.8	● 171779	● 193615
1	0.25	32	3	2	Δ0.88	● 171782	● 193616
1.2	0.25	32	3.6	2	Δ1.08	● 171783	● 193617
1.4	0.3	32	4.2	2	Δ1.25	● 171785	● 193618

Δ Tol. = +0/0.02 mm



6HX 6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2h5 mm		ID	ID
1.6	0.35	32	4.8	2	Δ1.45	● 193590	● 193619
1.8	0.35	32	5.4	2	Δ1.65	● 193591	● 193620
2	0.4	39	8	3	Δ1.8	● 193592	● 193621
2.3	0.4	39	9	3	Δ2.1	● 193593	● 193622
2.5	0.45	39	10	3	Δ2.3	● 193594	● 193623
2.6	0.45	39	10	3	Δ2.4	● 193595	● 193624

Δ Tol. = +0/0.02 mm

UNC ASME B1.1

CLASSIC SYNCHRO

VHM CAR

DC

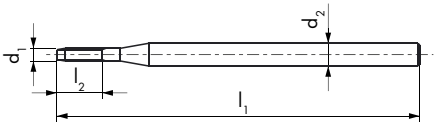
CFA

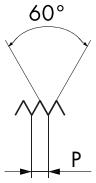
	CFA80VS	CFA83VS		
	2BX	2BX		

CFA80VS VS

62 63 91 92 94

CFA83VS VS





Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h5 mm		ID	ID
1	64	1.85	32	5.5	2	Δ 1.65	● 193596	● 193625
2	56	2.18	39	8.6	3	Δ 2	● 193597	● 193626
3	48	2.51	39	10	3	Δ 2.25	● 193598	● 193627

Δ Tol. = +0/0.02 mm

UNF ASME B1.1

CLASSIC SYNCHRO

VHM CAR

DC

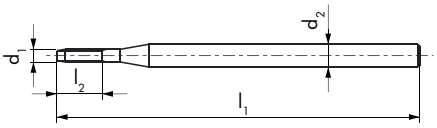
CFA

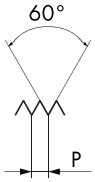
CFA80VS	CFA83VS		

CFA80VS VS

62 63 91 92 94

CFA83VS VS





2BX 2BX

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2h5 mm		ID	ID
0	80	1.52	32	4.5	2	Δ1.4	● 193599	● 193628
1	72	1.85	32	5.5	2	Δ1.7	● 193600	● 193629
2	64	2.18	39	8.6	3	Δ2	● 193601	● 193630
3	56	2.51	39	10	3	Δ2.3	● 193602	● 193631

Δ Tol. = +0/0.02 mm

S NIHS 06-10

CLASSIC SYNCHRO

VHM CAR

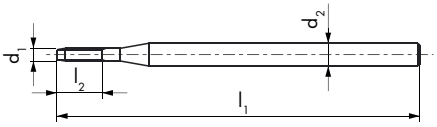
CFA

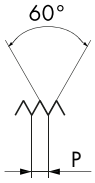
CFA80VS VS

CFA83VS VS

62 63 91 92 94

CFA80VS	CFA83VS		





NIHS NIHS

Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 h5 mm		ID	ID
0.5	0.125	32	1.5	1.5	Δ 0.44	171770	193603
0.6	0.15	32	1.8	1.5	Δ 0.53	171772	193604
0.7	0.175	32	2.1	1.5	Δ 0.62	171774	193605
0.8	0.2	32	2.4	1.5	Δ 0.71	171776	193606
0.9	0.225	32	2.7	1.5	Δ 0.8	171778	193607
1	0.25	32	3	2	Δ 0.88	171780	193608
1.2	0.25	32	3.6	2	Δ 1.08	171781	193609
1.4	0.3	32	4.2	2	Δ 1.25	171784	193610

Δ Tol. = +0/0.02 mm

GEWINDELEHREN NANO — NANO THREAD GAUGES

GEWINDELEHRDORNE — THREAD PLUG GAUGES

MESSTECHNIK — METROLOGY

GO

NO-GO

PRODUKTION — PRODUCTION

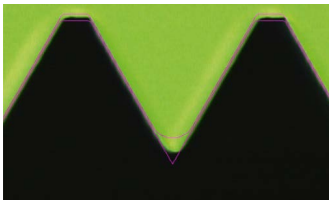
GO

< 2.74 mm

SWISS ACCREDITATION
sas.admin.ch
SCS 0143

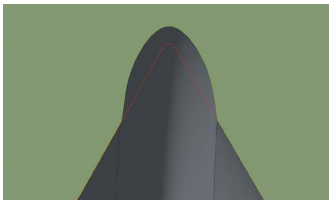
EINSATZ

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

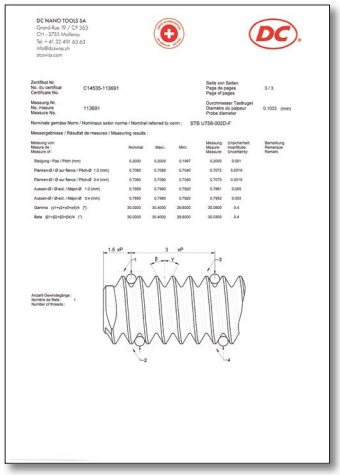
A coupling screw enables the GO gauge to be connected to the NO-GO section as required. The rigid box protects the gauges during transportation. Its moulded interior keeps the product clean and protects it from impacts.

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 17025:2017 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 17025:2017 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

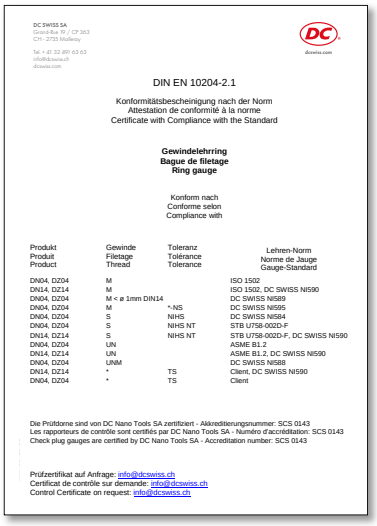
DOWNLOAD YOUR DC ATTESTATION

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

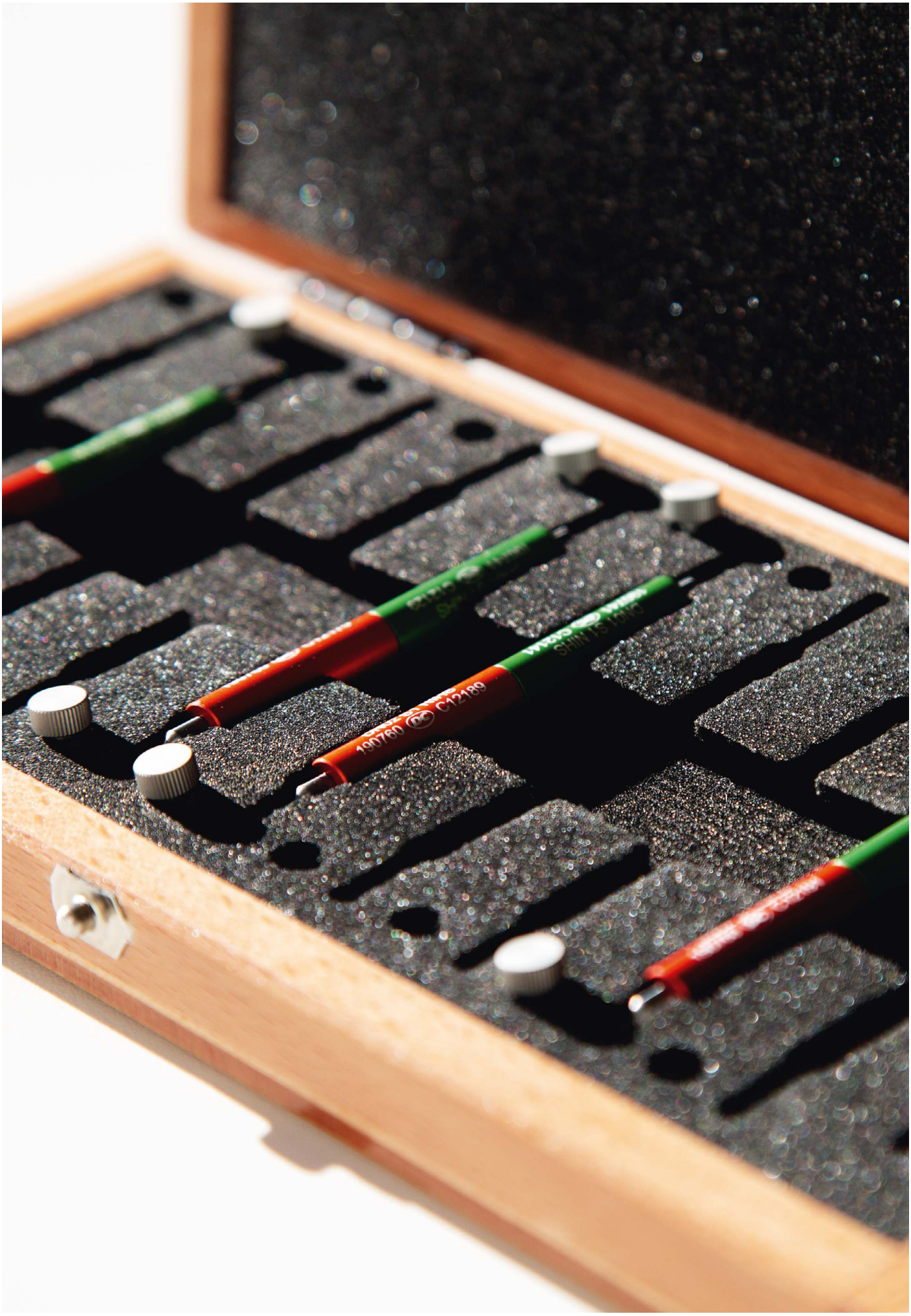
Gewindelehrring
Bague de filetage
Ring gauge

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


190760 C12189

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

BESTELLUNG NANO-GEWINDELEHREN — NANO THREAD GAUGES ORDER

WERKZEUGTYP — TOOL TYPE

☐
☐
☐

☐
☐
☐
☐

☐
☐
☐
☐

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			
Merkmale Characteristics												
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**
M 4H / 5h	ISO DIN 14 ISO DIN 13		382	382	383	383	384	384	399	399	400	400
M 6H / 6g	ISO DIN 13		382	382	383	383	384	384	399	399	400	400
M 5H / 6h	ISO DIN 13		382	382	383	383	384	384	399	399	400	400
MF 4H / 4h	ISO DIN 13		385	385	386	386	387	387	402	402	403	403
MF 6H / 6g	ISO DIN 13		385	385	386	386	387	387	402	402	403	403
MF 6h	ISO DIN 13				386	386	387	387	402	402	403	403
UNC 2B / 2A	ASME B1.1		388	388	389	389	390	390	405	405	406	406
UNC 3B / 3A	ASME B1.1		388	388	389	389	390	390	405	405	406	406
UNF 2B / 2A	ASME B1.1		388	388	389	389	390	390	405	405	406	406
UNF 3B / 3A	ASME B1.1		388	388	389	389	390	390	405	405	406	406
S NIHS 3G	NIHS	391										
S NIHS 4H	NIHS		391									
S NIHS 4H / 3G	NIHS			391								
S NIHS	NIHS				393	393	394	394	407	407	408	408
S NIHS NT	NIHS		392	392	393	393	394	394	407	407	408	408
SF NIHS 3G	NIHS	395										
SF NIHS 4H	NIHS		395									
SF NIHS 4H / 3G	NIHS			395								
SF NIHS	NIHS				396	396	397	397	409	409	410	410
SF NIHS NT	NIHS								409	409	410	410
SL	SL 15-01		398	398								

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

		Abnutzungsprüfdorne Master plug gauges WEAR		*Kalibrier-Gewindelehrdorne* Calibration thread plug gauges
Merkmale Characteristics				
Typ Type		RN05-3 WEAR	RN15-3 WEAR	EN00
M 4H / 5h	ISO DIN 14 ISO DIN 13			
M 6H / 6g	ISO DIN 14 ISO DIN 13	401	401	
M 5H / 6h	ISO DIN 13	401	401	
MF 4H / 4h	ISO DIN 13	404	404	
MF 6H / 6g	ISO DIN 13	404	404	
MF 6h	ISO DIN 13	404	404	
S NIHS	NIHS			411

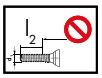
Piktogramme - Pictographs

"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

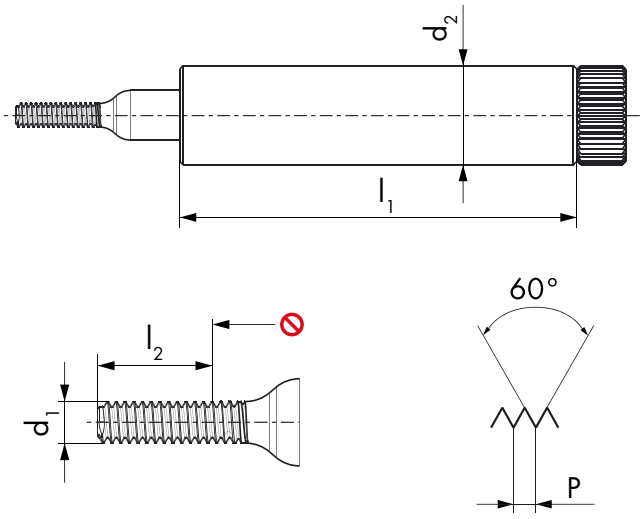
LH — *Alle Gewindelehren sind auf Anfrage auch für Linksgewinde lieferbar*
All gauges can be supplied with a left-hand thread upon request

Einsatz — Use

RN05-1
RN05-2
→ DN04/DZ04

RN15-1
RN15-2
→ DN14/DZ14

nano



Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm	DN01 GO 4H ID	DN02 NO-GO 4H ID	DN01 GO 5H ID	DN02 NO-GO 5H 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	● 191424
1.2	0.25	24	3.6	6	● 191114	● 191128	● 191422	● 191425
1.4	0.3	24	4.2	6	● 191115	● 191129	● 191423	● 191426

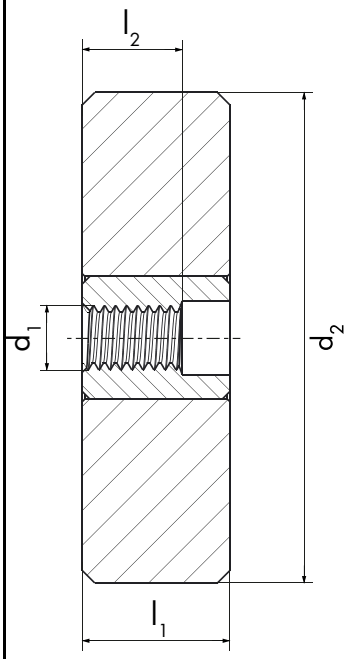
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm	6H ID	6H ID
1.6	0.35	24	4.5	6	● 191427	● 191433
1.8	0.35	24	4.5	6	● 191428	● 191434
2	0.4	24	4.5	6	● 191429	● 191435
2.3	0.4	24	4.5	6	● 191430	● 191436
2.5	0.45	24	4.5	6	● 191431	● 191437
2.6	0.45	24	4.5	6	● 191432	● 191438

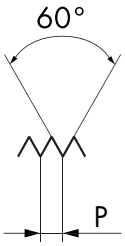
All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

M ISO DIN 14 / ISO DIN 13
DC SWISS NI589 / DZ04: ISO 1502 / DZ14: ISO 1502, DC SWISS NI590

PHYN. KL

nano





DZ04 GO	DZ14 NO-GO	DZ04 GO	DZ14 NO-GO
5h	5h	6h	6h

Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
* 0.3	0.08	6	0.45	20	● 192842	● 192850		
* 0.35	0.09	6	0.53	20	● 192843	● 192851		
0.4	0.1	6	0.6	20	● 192844	● 192852		
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	● 191476
1.2	0.25	6	1.8	20			● 191474	● 191477
1.4	0.3	6	2.1	20			● 191475	● 191478

* In development

							6g	6g
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm			ID	ID
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

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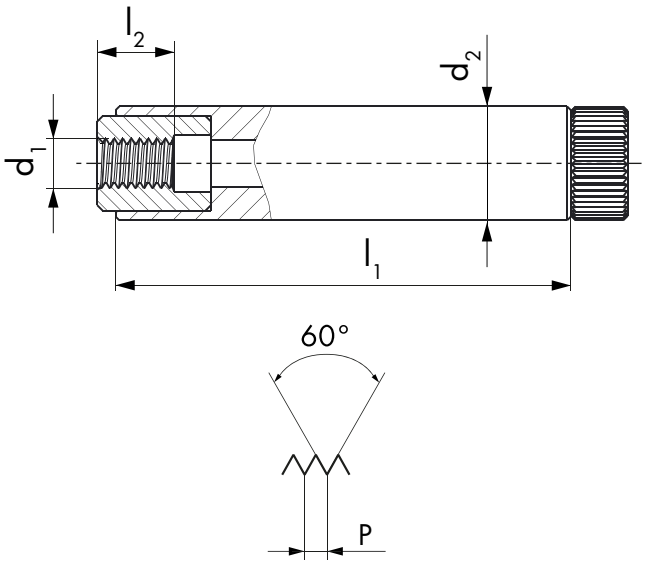
The paid certificate is available on request.

M ISO DIN 14 / ISO DIN 13
DC SWISS NI589 / DN04: ISO 1502 / DN14: ISO 1502, DC SWISS NI590

PHYN. KL

nano



DN04 GO	DN14 NO-GO	DN04 GO	DN14 NO-GO
5h	5h	6h	6h

Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
* 0.3	0.08	24	0.45	6	● 192800	● 192808		
* 0.35	0.09	24	0.53	6	● 192801	● 192809		
0.4	0.1	24	0.6	6	● 192802	● 192810		
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	● 191450
1.2	0.25	24	1.8	6			● 191448	● 191451
1.4	0.3	24	2.1	6			● 191449	● 191452

* In development

							6g	6g
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm			ID	ID
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

All nano ring gauges have a certificate of measurement, established with SCS certified plug check gauges.
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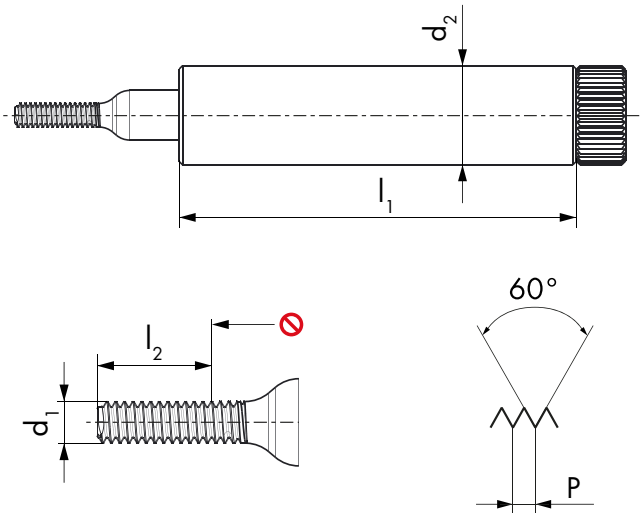
MF ISO DIN 13 ISO 1502

VHM CAR

nano



Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm	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

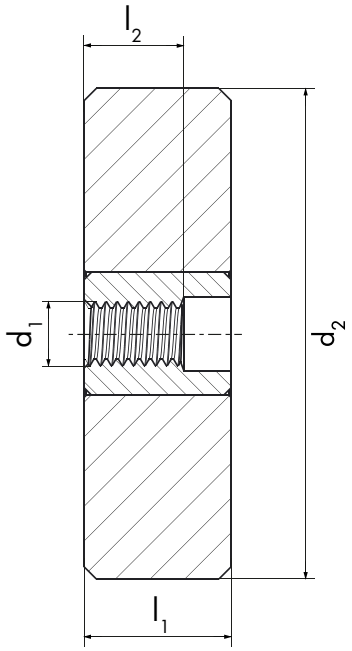
All nano thread plug gauges are SCS-certified and the paid certificate is available on request.

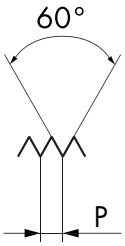
MF

ISO DIN 13
DZ04: ISO 1502 / DZ14: ISO 1502, DC SWISS NI590

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 mm	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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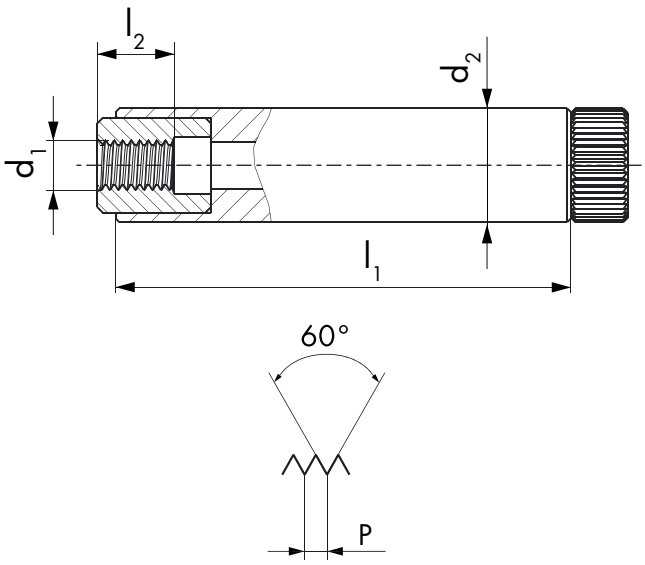
MF

ISO DIN 13
DN04: ISO 1502 / DN14: ISO 1502, DC SWISS NI590

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 mm	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

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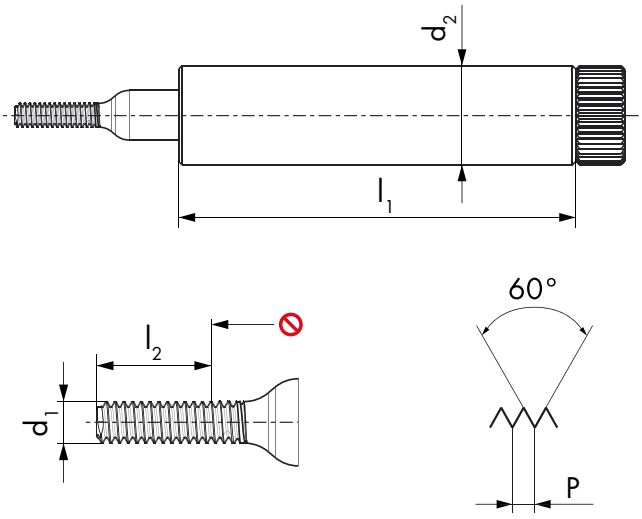
UNC, UNF

ASME B1.1
ASME B1.2

VHM CAR

nano



DN01 GO	DN02 NO-GO	DN01 GO	DN02 NO-GO
2B	2B	3B	3B

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

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

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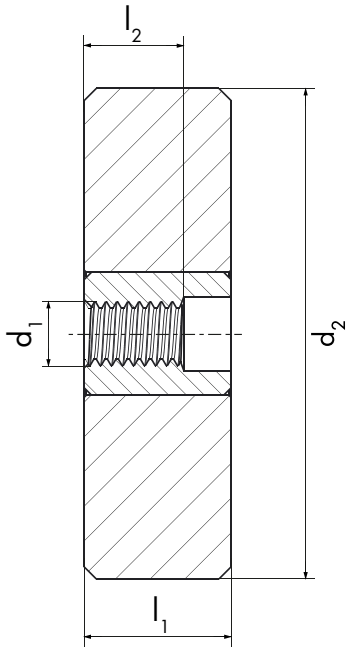
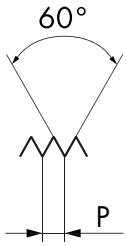
UNC, UNF

ASME B1.1
DZ04: ASME B1.2 / DZ14: ASME B1.2, DC SWISS NI590

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 mm	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 mm	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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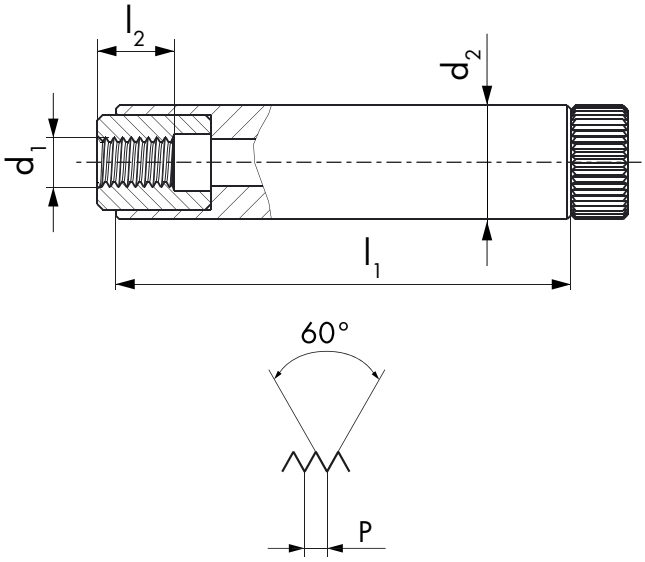
UNC, UNF

ASME B1.1
DN04: ASME B1.2 / DN14: ASME B1.2, DC SWISS NI590

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 mm	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 mm	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

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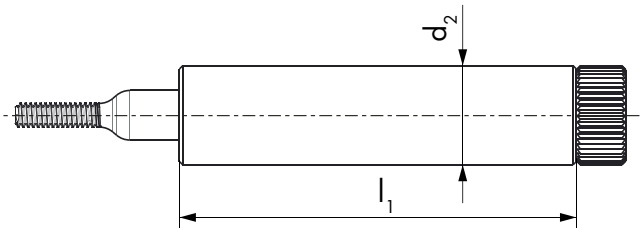
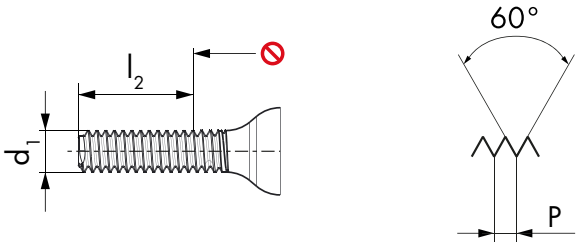
nano





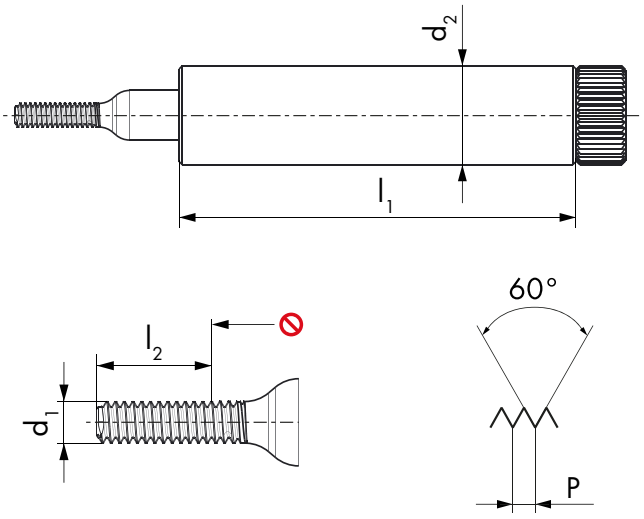
DN01 GO	DN01 GO	DN02 NO-GO	

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

Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	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

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

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 mm	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

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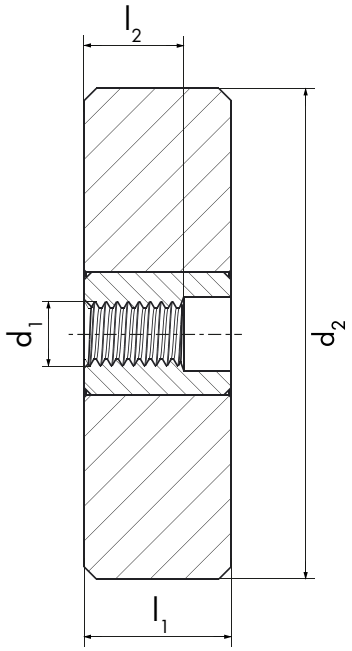
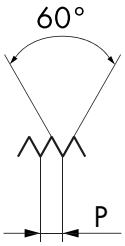
S NIHS / NIHS NT
DC SWISS NI584 / DZ04: STB U758-002D-F / DZ14: STB U758-002D-F, DC SWISS NI590

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 mm	ID	ID	ID	ID
* 0.3	0.08	6	0.45	20	● 190809	● 190828	● 190847	● 190866
* 0.35	0.09	6	0.53	20	● 190810	● 190829	● 190848	● 190867
0.4	0.1	6	0.6	20	● 190811	● 190830	● 190849	● 190868
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

* In development

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

S NIHS / NIHS NT
DC SWISS NI584 / DN04: STB U758-002D-F / DN14: STB U758-002D-F, DC SWISS NI590

PHYN. KL

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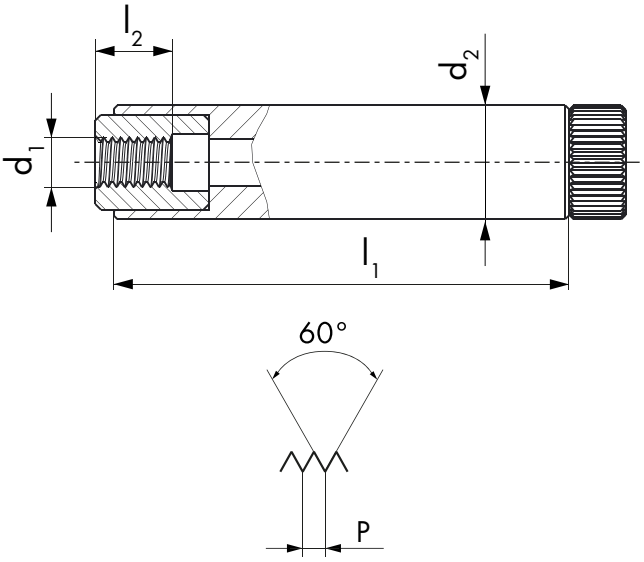

DN04 GO	DN14 NO-GO	DN04 GO	DN14 NO-GO
NIHS	NIHS	NIHS NT	NIHS NT

Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
* 0.3	0.08	24	0.45	6	● 190885	● 190904	● 190923	● 190942
* 0.35	0.09	24	0.53	6	● 190886	● 190905	● 190924	● 190943
0.4	0.1	24	0.6	6	● 190887	● 190906	● 190925	● 190944
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

*In development

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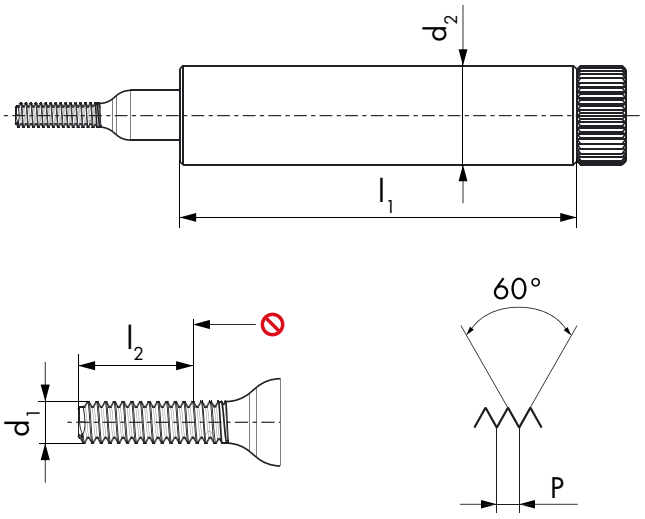
nano



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 mm	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

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

SF NIHS
DC SWISS NI584

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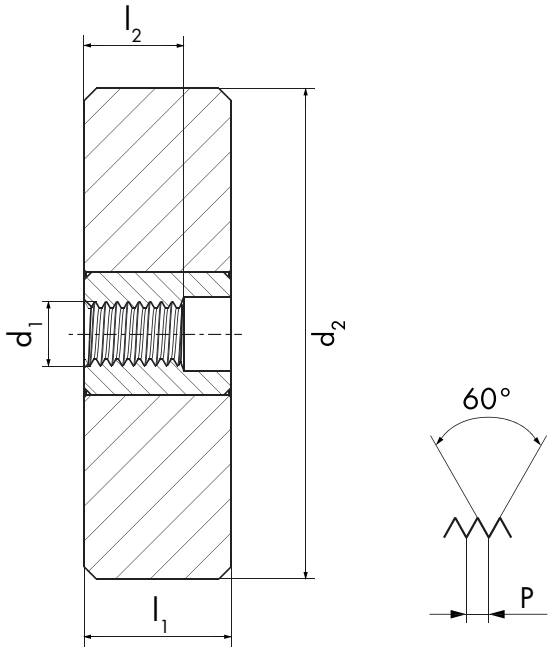
DZ04 GO	DZ14 NO-GO		

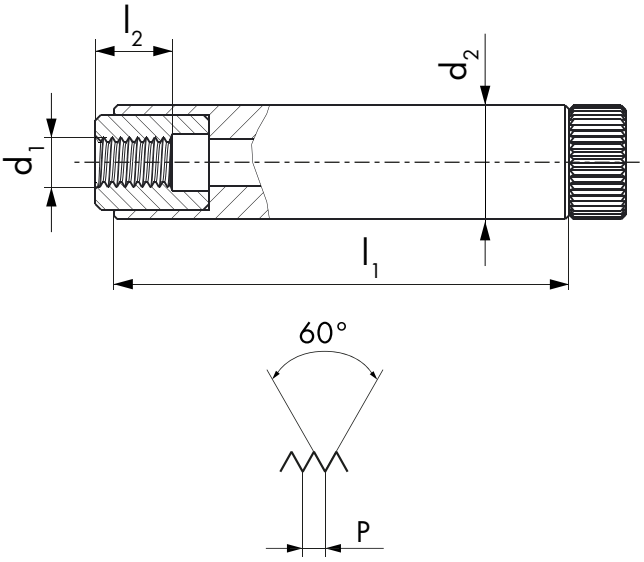


NIHS NIHS

Ø d_1 SF	P mm	l_1 mm	l_2 GO mm	d_2 mm	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



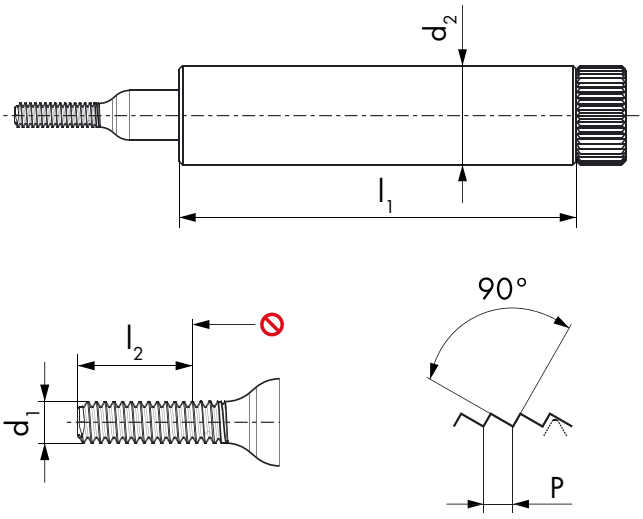
DN04 GO	DN14 NO-GO		

NIHS NIHS

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

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

nano

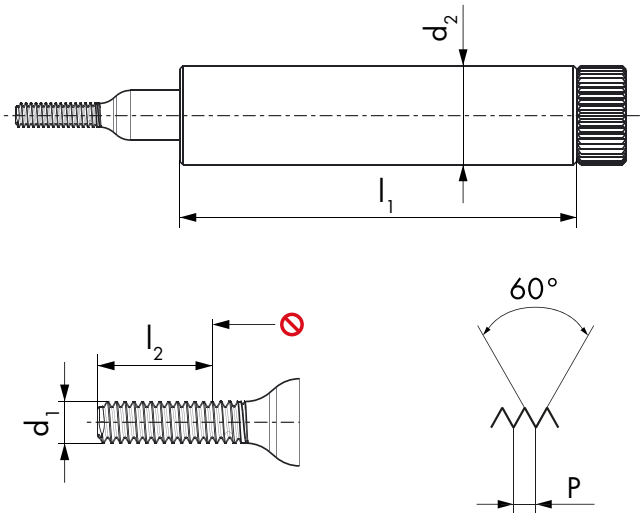


DN01 GO	DN02 NO-GO		

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

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

nano



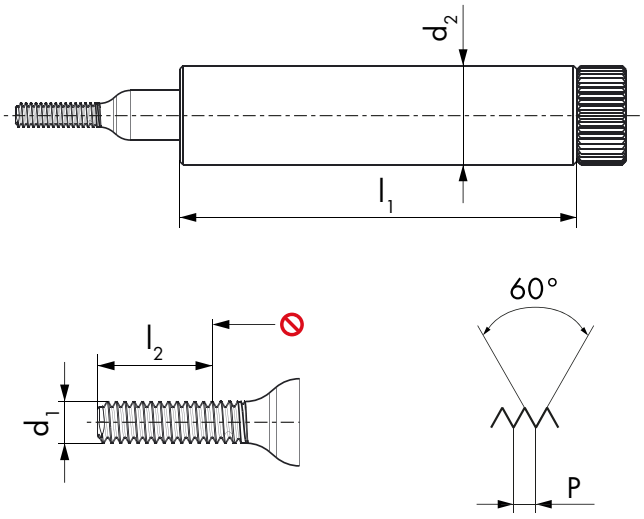
RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO

					5h	5h	6h	6h
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm	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	● 191508
1.2	0.25	24	2.3	6			● 191500	● 191509
1.4	0.3	24	2.7	6			● 191501	● 191510

							6g	6g
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm			ID	ID
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

SCS certificate included.

nano



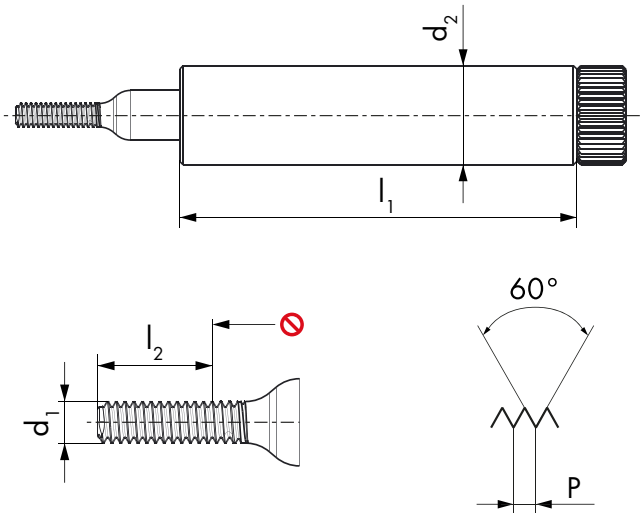
RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO

					5h	5h	6h	6h
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm	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	● 191511
1.2	0.25	24	2.3	6			● 191503	● 191512
1.4	0.3	24	2.7	6			● 191504	● 191513

							6g	6g
Ø d_1 M	P mm	l_1 mm	l_2 GO mm	d_2 mm			ID	ID
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

SCS certificate included.

nano



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 mm	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.

MF ISO DIN 13 ISO 1502

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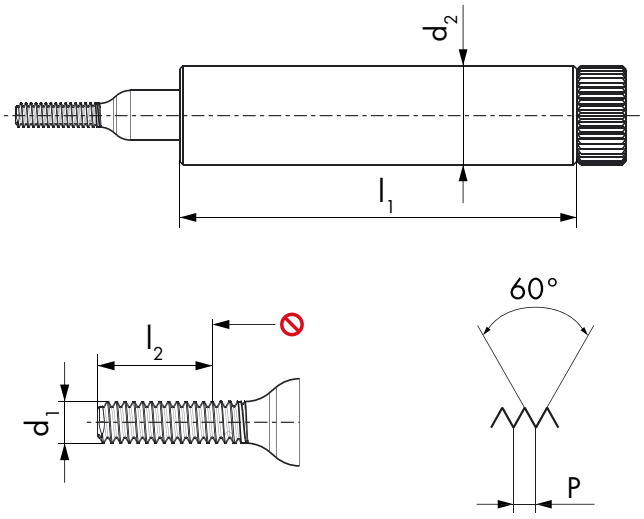

	RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO
	4h	4h	6h	6h

Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
1.4	0.2	24	2.5	6	191256	191298	192932	192945
1.6	0.2	24	2.2	6	195874	195876	192933	192946
1.8	0.2	24	2.2	6	197711	197712	192934	192947
2	0.2	24	2.2	6	197724	197725	192935	192948
2	0.25	24	2.75	6	197726	197727	192936	192949
2.2	0.2	24	2.2	6	197713	197714	192937	192950
2.2	0.25	24	2.75	6	197715	197716	192938	192951
2.3	0.2	24	2.2	6	197717	197718	192939	192952
2.3	0.25	24	2.75	6	197719	197720	192940	192953
2.5	0.2	24	2.2	6	197721	197722	192941	192954
2.5	0.25	24	2.75	6	190683	197723	192942	192955

							6g	6g
Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm			ID	ID
2.5	0.35	24	4.45	6			192943	192956
2.6	0.35	24	4.6	6			192944	192957

SCS certificate included.

MF ISO DIN 13 ISO 1502

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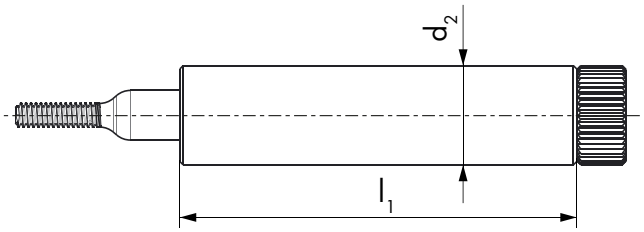
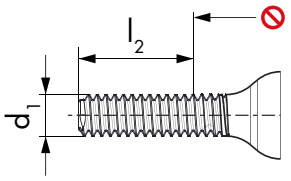
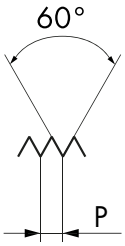






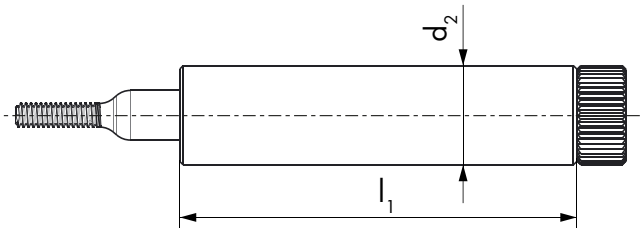
RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO

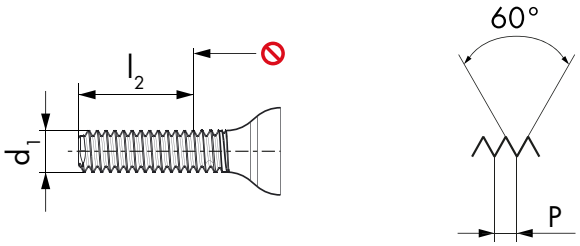
Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm	4h ID	4h ID	6h ID	6h ID
1.4	0.2	24	2.5	6	191270	197728	192958	192971
1.6	0.2	24	1.6	6	195875	195877	192959	192972
1.8	0.2	24	1.6	6	197729	197730	192960	192973
2	0.2	24	1.6	6	199060	199061	192961	192974
2	0.25	24	2	6	199062	199063	192962	192975
2.2	0.2	24	1.6	6	197731	197732	192963	192976
2.2	0.25	24	2	6	197733	199364	192964	192977
2.3	0.2	24	1.6	6	199053	199054	192965	192978
2.3	0.25	24	2	6	199055	199056	192966	192979
2.5	0.2	24	1.6	6	199057	199058	192967	192980
2.5	0.25	24	2	6	190686	199059	192968	192981

Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm	6g ID	6g ID
2.5	0.35	24	4.45	6	192969	192982
2.6	0.35	24	4.6	6	192970	192983

SCS certificate included.

nano





RN05-3 WEAR	RN15-3 WEAR	RN05-3 WEAR	RN15-3 WEAR
4h	4h	6h	6h

Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
1.4	0.2	24	2.5	6	191284	191326	192984	192997
1.6	0.2	24	1.6	6	199064	199065	192985	192998
1.8	0.2	24	1.6	6	199066	199067	192986	192999
2	0.2	24	1.6	6	199360	199361	192987	193000
2	0.25	24	2	6	199362	199363	192988	193001
2.2	0.2	24	1.6	6	199068	199069	192989	193002
2.2	0.25	24	2	6	199070	199071	192990	193003
2.3	0.2	24	1.6	6	199072	199073	192991	193004
2.3	0.25	24	2	6	199074	199075	192992	193005
2.5	0.2	24	1.6	6	199076	199077	192993	193006
2.5	0.25	24	2	6	199358	199359	192994	193007

							6g	6g
Ø d_1 MF	P mm	l_1 mm	l_2 GO mm	d_2 mm			ID	ID
2.5	0.35	24	4.45	6			192995	193008
2.6	0.35	24	4.6	6			192996	193009

SCS certificate included.

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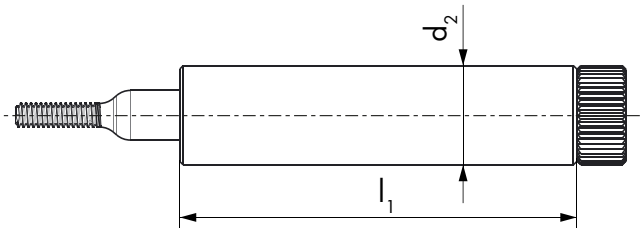

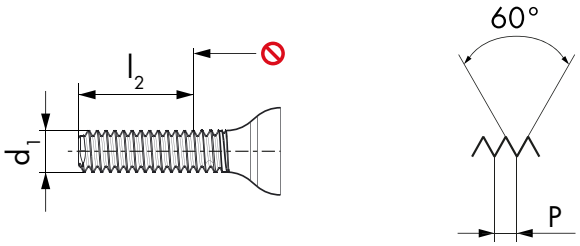

RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO

2A	2A	3A	3A

Ø d_1 UNC	P TPI	Ø d_1 mm	l_1 mm	l_2 GO mm	d_2 mm	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 mm	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.

UNC, UNF

ASME B1.1
DC SWISS NI582

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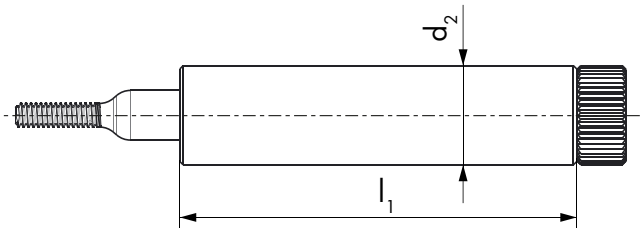
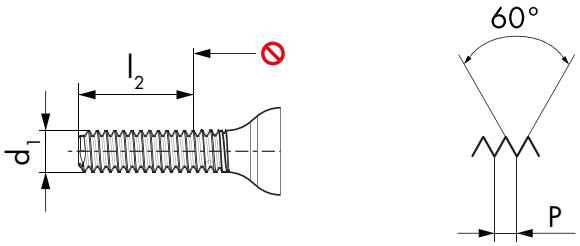




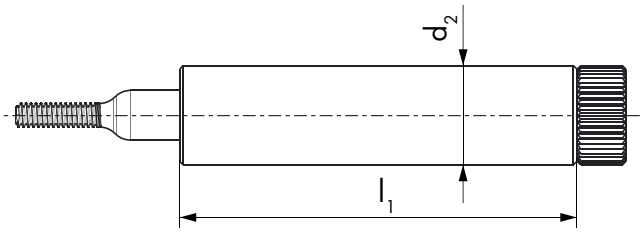
	RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO
	2A	2A	3A	3A

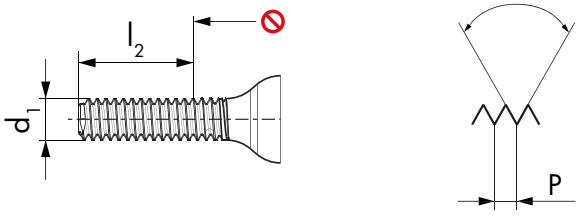
Ø d_1 UNC	P TPI	Ø d_1 mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
1	64	1.854	24	3.58	6	● 191616	● 191622	● 191628	● 191634
2	56	2.184	24	4.18	6	● 191617	● 191623	● 191629	● 191635
3	48	2.515	24	4.83	6	● 191618	● 191624	● 191630	● 191636

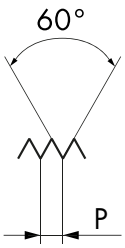
Ø d_1 UNF	P TPI	Ø d_1 mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
0	80	1.524	24	2.92	6	● 191689	● 191697	● 191705	● 191713
1	72	1.854	24	3.49	6	● 191690	● 191698	● 191706	● 191714
2	64	2.184	24	4.07	6	● 191691	● 191699	● 191707	● 191715
3	56	2.515	24	4.68	6	● 191692	● 191700	● 191708	● 191716

SCS certificate included.

nano





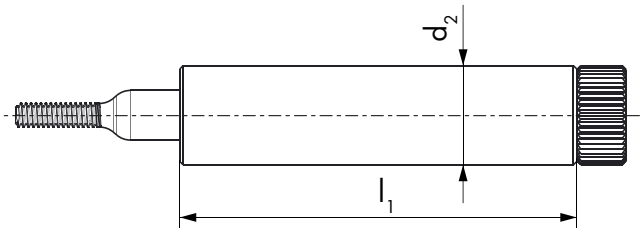


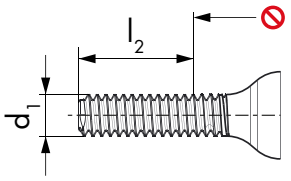
RN05-1 GO	RN15-1 GO	RN05-1 GO	RN15-1 GO
NIHS	NIHS	NIHS NT	NIHS NT

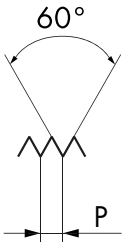
Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
0.3	0.08	24	0.61	6	190961	190999	191037	191075
0.35	0.09	24	0.71	6	190962	191000	191038	191076
0.4	0.1	24	0.8	6	190963	191001	191039	191077
0.5	0.125	24	1	6	190964	191002	191040	191078
0.6	0.15	24	1.2	6	190965	191003	191041	191079
0.7	0.175	24	1.4	6	190966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

SCS certificate included.

nano







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

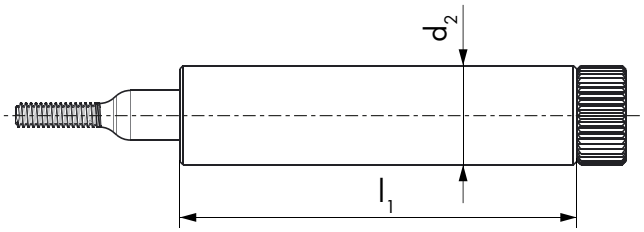
Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
0.3	0.08	24	0.61	6	190980	191018	191056	191094
0.35	0.09	24	0.71	6	190981	191019	191057	191095
0.4	0.1	24	0.8	6	190982	191020	191058	191096
0.5	0.125	24	1	6	190983	191021	191059	191097
0.6	0.15	24	1.2	6	190984	191022	191060	191098
0.7	0.175	24	1.4	6	190985	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

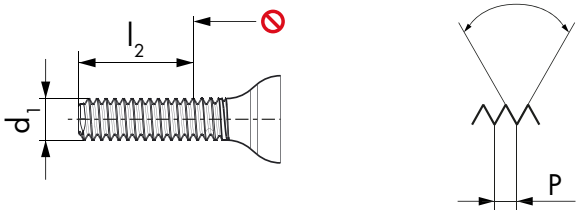
SCS certificate included.

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

VHM CAR

nano





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

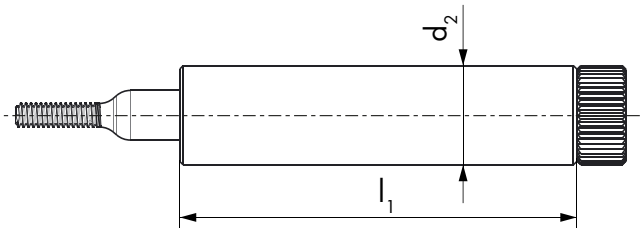
Ø d_1 SF	P mm	l_1 mm	l_2 GO mm	d_2 mm	ID	ID	ID	ID
1.4	0.2	24	2.5	6	190972	191010	191048	191086
1.6	0.2	24	2.2	6	190973	191011	191049	191087
1.8	0.2	24	2.2	6	190974	191012	191050	191088
2	0.2	24	2.2	6	190975	191013	191051	191089
2.2	0.2	24	2.2	6	190976	191014	191052	191090
2.2	0.25	24	2.75	6	190977	191015	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

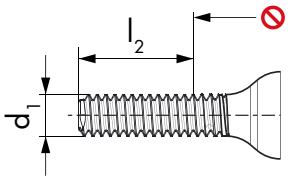
SCS certificate included.

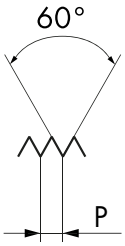
SF NIHS / NIHS NT
DC SWISS NI584 / DC SWISS NI585

VHM CAR

nano







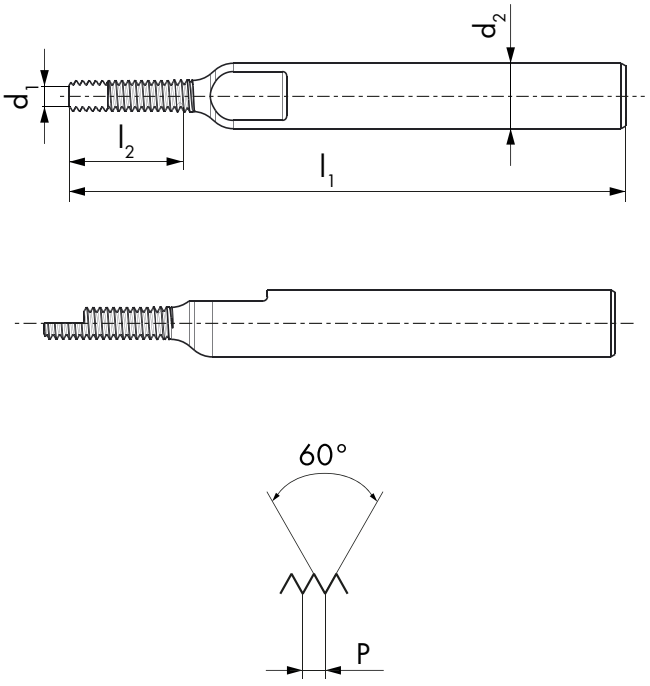
RN05-2 NO-GO	RN15-2 NO-GO	RN05-2 NO-GO	RN15-2 NO-GO
NIHS	NIHS	NIHS NT	NIHS NT

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

nano

EN00



NIHS

Ø d_1 S	P mm	l_1 mm	l_2 GO mm	d_2 mm	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.

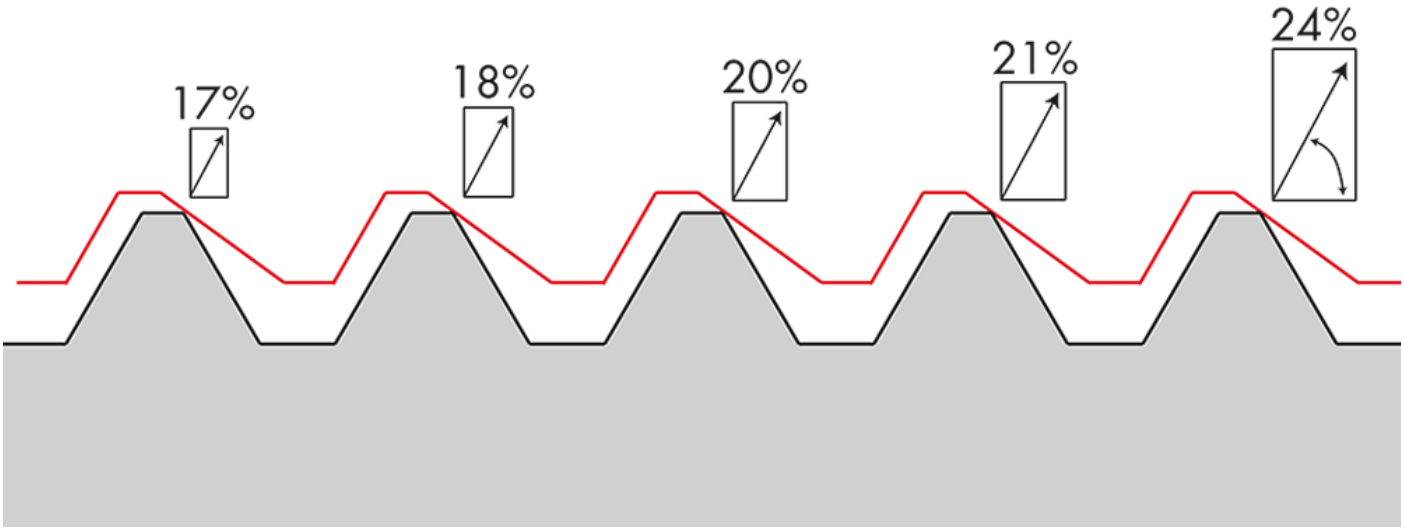
SCS certificate included.

MICRO SAFELOCK

Die von DC SWISS registrierte und geschützte Marke Micro-Safelock identifiziert die Werkzeuge, die vom Safelock-System profitieren und garantiert die von DC SWISS entwickelte und patentierte selbstblockierende Schraubverbindung.

Die Komponenten einer herkömmlichen selbstsichernden, asymmetrischen Gewindeverbindung können bei Durchmessern unter 1.5 mm aufgrund der besonderen Anforderungen an die Toleranzfelder für die Innen- und Aussengewinde nicht unter Einsatz der üblichen Produktions- und Messweisen industriell gefertigt werden.

Unter dem Markennamen Micro-Safelock wurde so ein selbstsicherndes, asymmetrisches, genormtes Gewindesystem für Durchmesser von 0.30 bis 1.40 mm entwickelt und patentiert, das die Toleranzen von Mini-Gewinden einhält. Es ist ebenso vibrations- und stossfest wie die grösseren Gewindesysteme, da es auf der gleichen Technologie beruht und ebenfalls einen Flankenwinkel von 30° (Innengewinde/Mutter) aufweist, sodass sich die Schräubchen leicht montieren lassen.



Durch die beim Anziehen angewendete Zugkraft zentriert sich die Schraube selbst, während ihre Gewindeflanken sich mit dem asymmetrischen Profil (der Steigung) des Innengewindes verzahnen. Durch den tangentialen Kontakt verteilt sich die Last gleichmässig auf alle Gewindegänge.

Indem die Schraubengewinde auf der gesamten Länge belastet und die ersten Gewindegänge entsprechend entlastet werden, ist hier die Gefährdung der Schraubenverbindung durch Ermüdung signifikant verringert. Daher können solche Verbindungen auch ohne Qualitätsverlust mehrfach montiert und demontiert werden.

Um möglichst alle masslichen Anforderungen erfüllen zu können, wurde die Seele der Schraube gegenüber einer Schraube mit gleich grossem NIHS- oder M-Gewinde und 60° Flankenwinkel grosszügig verstärkt.

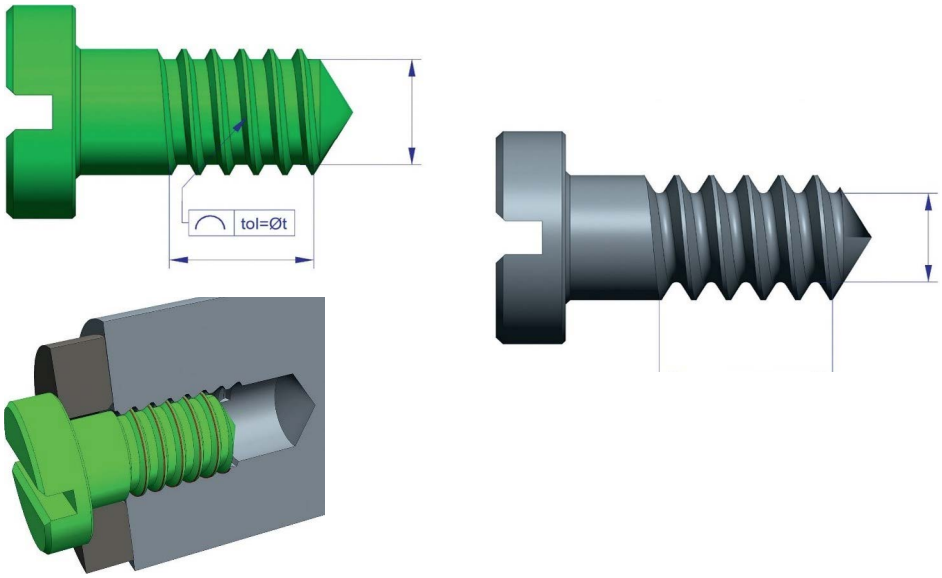
Die Gänge sind enger als bei einem Gewinde nach NIHS-Norm, sodass beide Befestigungselemente bei gleicher Gewindelänge über eine grössere Kontaktfläche verfügen. Das hat beträchtliche Vorteile – insbesondere dann, wenn weiche Werkstoffe und Schräubchen mit kleinem Kopf und kurzem Gewinde verwendet werden.

DIE VORTEILE DES SELBSTSICHERNDEN GEWINDEPROFILS

- *Verteilung der Zugkraft auf die gesamte Länge des Gewindes*
- *Bis zu 25 % geringeres nominales Klemmdrehmoment im Vergleich zur herkömmlichen Gewindeverbindung*
- *Rein mechanische Lösung, ohne chemische Hilfsmittel*

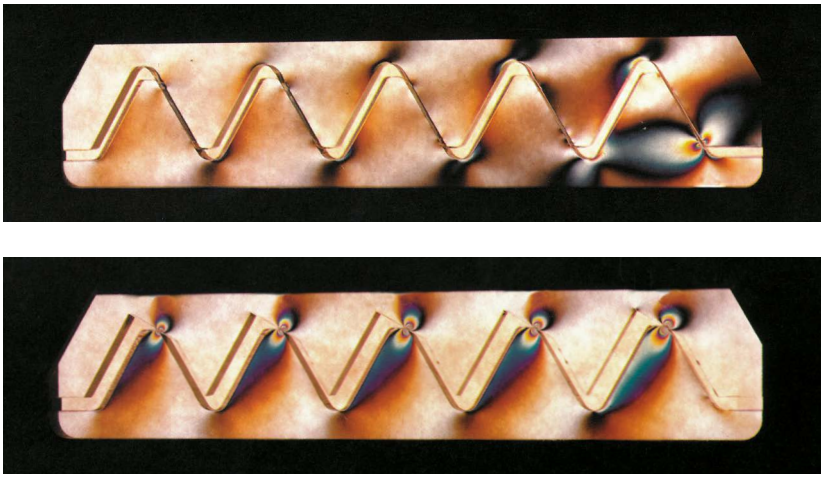
DIE VORTEILE DER SCHRAUBE

- *Gewinde mit anwendungsspezifischen Toleranzen: sichert den permanenten Kontakt zwischen Schraube und Mutter*
- *Feingewinde: bietet eine grössere Kontaktfläche bei gleicher Gewindelänge*
- *Höhere Zugfestigkeit: durch den um 19 % grösseren Gewinde-Innendurchmesser (mehr als 40 % im Querschnitt)*
- *Mehrmaliges Auf- und Abschrauben ohne Beeinträchtigung der mechanischen Eigenschaften*

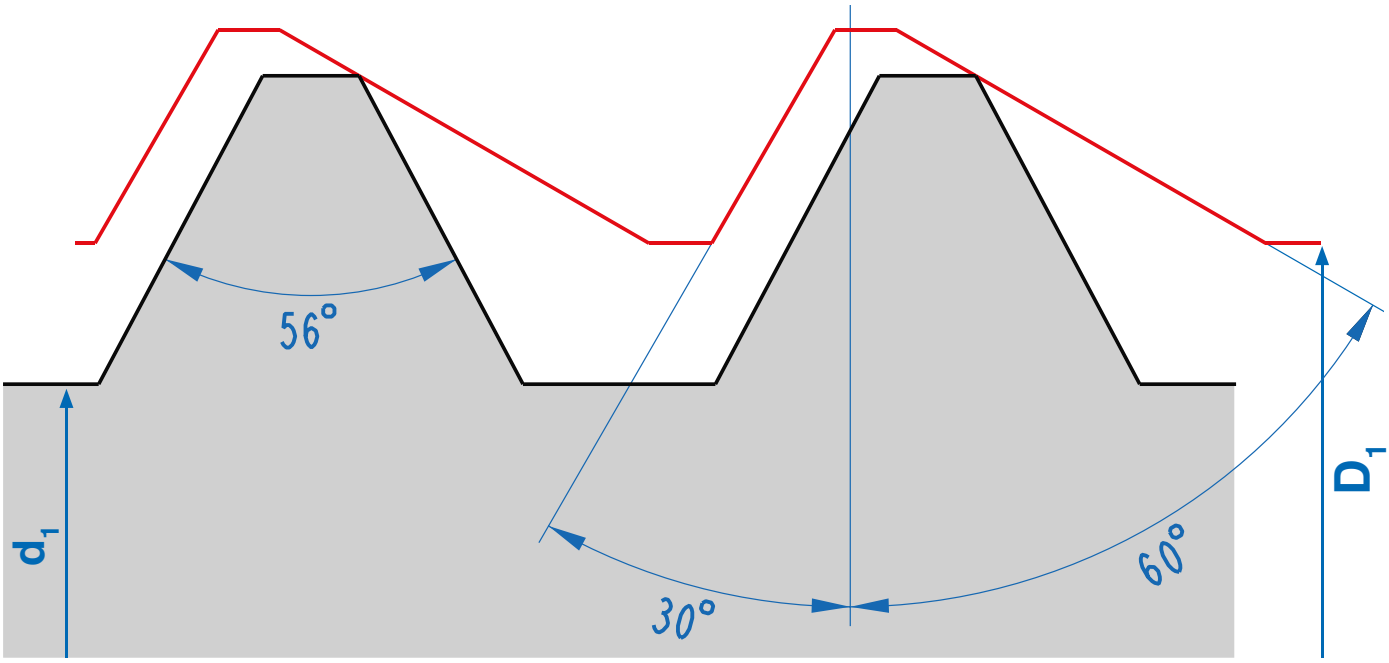


Wie zahlreiche Stossfestigkeitstests eindeutig gezeigt haben, sind diese Gewindeverbindungen absolut zuverlässig. Sie stellen daher eine überzeugende Lösung für alle Fälle dar, in denen die Festigkeit einer Schraubenverbindung unter besonders schwierigen Bedingungen gewährleistet werden muss.

Die bei den Prüfungen angewendeten Anzugsdrehmomente lagen um 25 % unter den von den Herstellern der chemischen Schraubensicherungsmittel empfohlenen Werten.



SAFELOCK MASSE UND NORMEN



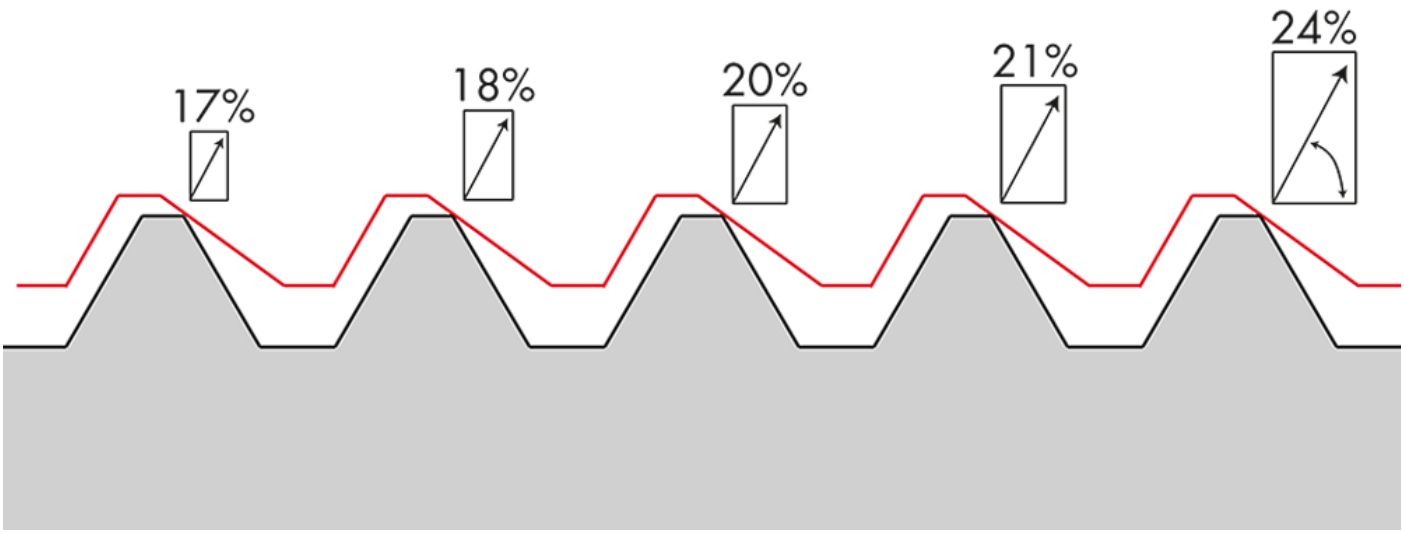
Abmessung	Steigung mm	d_1 mini mm	d_1 maxi mm	Flankenwinkel Mutter	Flankenwinkel Schraube	d_1
SL 0.3	0.06	0.264	0.278	30°/60°	56°	0.247
SL 0.35	0.06	0.314	0.328	30°/60°	56°	0.297
SL 0.4	0.08	0.356	0.372	30°/60°	56°	0.331
SL 0.5	0.1	0.448	0.466	30°/60°	56°	0.416
SL 0.6	0.125	0.538	0.559	30°/60°	56°	0.496
SL 0.7	0.15	0.628	0.651	30°/60°	56°	0.576
SL 0.8	0.15	0.728	0.751	30°/60°	56°	0.676
SL 0.9	0.175	0.818	0.844	30°/60°	56°	0.756
SL 1.0	0.2	0.908	0.936	30°/60°	56°	0.836
SL 1.2	0.2	1.108	1.136	30°/60°	56°	1.036
SL 1.4	0.25	1.288	1.321	30°/60°	56°	1.197

MICRO SAFELOCK

The Micro-Safelock brand, registered and protected by DC SWISS, identifies the tools benefiting from the Safelock system guaranteeing the threaded self-locking assembly, developed and patented by DC SWISS.

For diameters of less than 1.5 mm, the requirements for the interior and exterior threading tolerance are such that conventional method for production and measurement do not permit the industrial production of components for conventional self-locking asymmetrical screw assemblies.

This standard self-locking asymmetrical threaded micro-assembly for diameters ranging from 0.30 to 1.40 mm, which adheres to the tolerances inherent in micro-screw threads, has been designed and patented under the name of Micro-Safelock. It offers exceptional performance in terms of resistance to shocks and vibrations, based on the technology used for larger-scale assemblies and fully integrating the 30° gradient into the interior thread (nut), making it easier to assemble the screw.



When tightening torque is applied, the tensile force exerted on the screw forces it to auto-centre, and the profile points of the screw come into contact with the edges of the asymmetrical profile of the interior screw thread (gradient), thus leading to tangential contact and a regular distribution of load across all the turns of the thread.

Reducing the load on the first few turns of the thread and directing the stress towards compressing the screw significantly reduces the fatigue experienced by the screw/nut assembly, thereby making it possible to assemble and disassemble it numerous times without changing its characteristics.

To correspond to the dimensional requirements, the core of the screw has been amply reinforced compared with a 60° NIHS or M type thread of the same dimension.

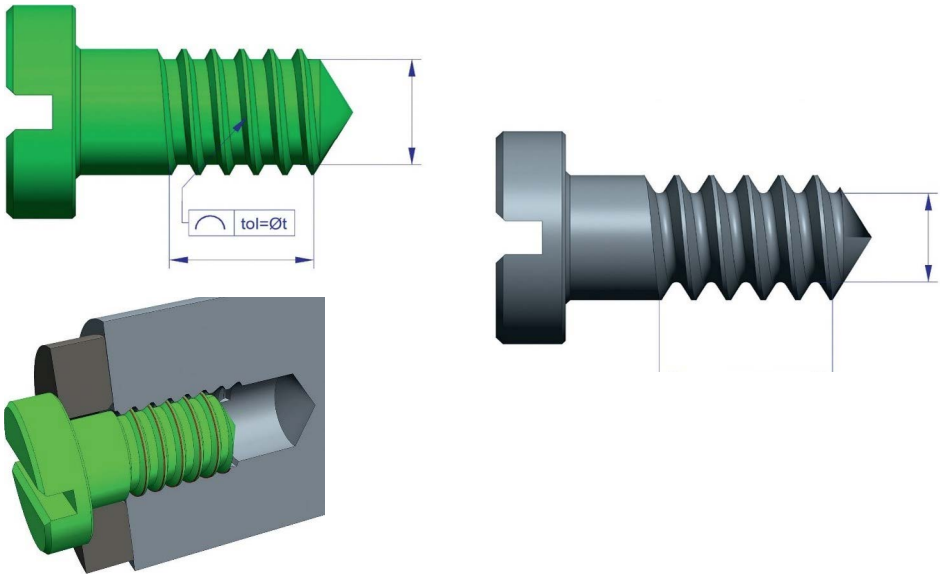
The length of the pitch has been reduced in comparison with the NIHS standard in order to increase the area of contact between the two fixing elements, with the usable length remaining the same. This obviously offers considerable advantages, particularly when working with soft materials and small-headed screws with a reduced thread length.

THE ADVANTAGES OF THE SELF-LOCKING

- Distributes the tensile force along the entire length of the screw thread
- Nominal blocking torque up to 25 % less than that of a conventional assembly
- Completely mechanical, with no chemical additives

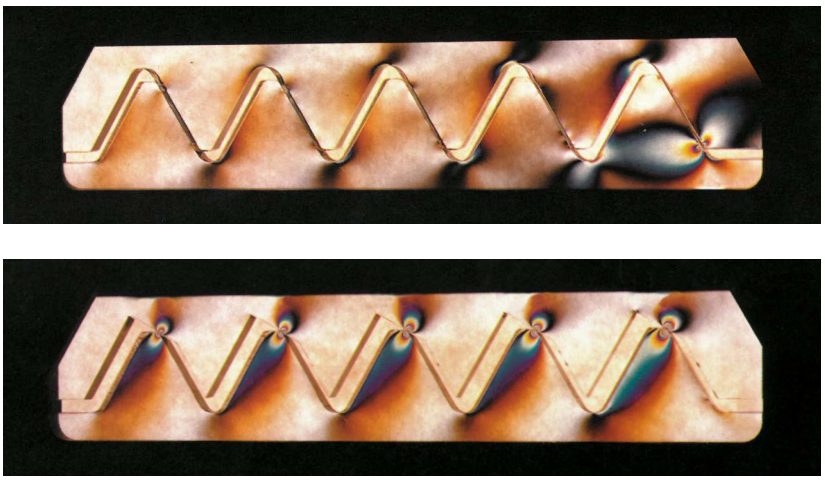
THE ADVANTAGES OF THE SCREW

- Screw thread with tolerances tailored to meet requirements, enabling uninterrupted contact between screw and nut
- Fine pitch, increasing the surface in contact with the nut for the same length of thread
- Improved tensile strength thanks to an interior diameter of the profile that is 19 % greater (more than 40 % in section)
- Multiple assembly / disassembly with no change in mechanical properties

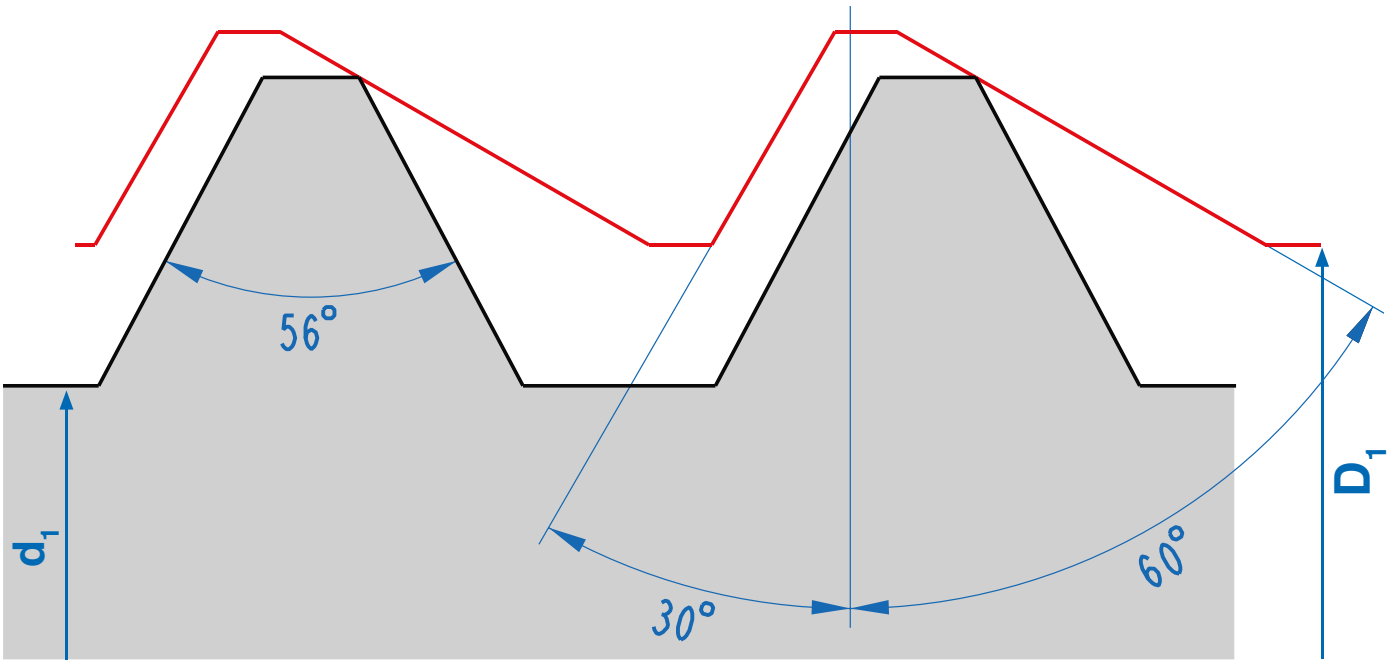


The numerous impact resistance tests that have been carried out, clearly show that the threaded assemblies are totally reliable and now offer a credible response to problems affecting screw resistance.

The tightening torques applied to specimen screws are 25 % less than the values recommended by manufacturers of chemical “threadlocking” coatings.



SAFELOCK DIMENSIONS AND STANDARDS



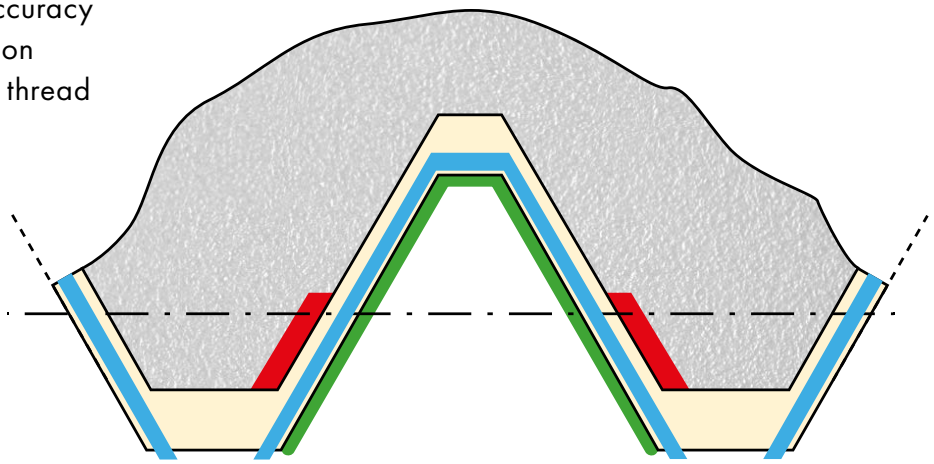
Dimension	Pitch mm	d_1 mini mm	d_1 maxi mm	Angles of sides of nut	Angles of sides of screw	d_1
SL 0.3	0.06	0.264	0.278	30°/60°	56°	0.247
SL 0.35	0.06	0.314	0.328	30°/60°	56°	0.297
SL 0.4	0.08	0.356	0.372	30°/60°	56°	0.331
SL 0.5	0.1	0.448	0.466	30°/60°	56°	0.416
SL 0.6	0.125	0.538	0.559	30°/60°	56°	0.496
SL 0.7	0.15	0.628	0.651	30°/60°	56°	0.576
SL 0.8	0.15	0.728	0.751	30°/60°	56°	0.676
SL 0.9	0.175	0.818	0.844	30°/60°	56°	0.756
SL 1.0	0.2	0.908	0.936	30°/60°	56°	0.836
SL 1.2	0.2	1.108	1.136	30°/60°	56°	1.036
SL 1.4	0.25	1.288	1.321	30°/60°	56°	1.197

TOLERANZEN FÜR M- UND MF-GEWINDE
TOLERANCES FOR M AND MF THREADS

Muttergewinde
Nut thread

Toleranz 6H
—Zahl = Genauigkeitsgrad
—Buchstabe = Toleranzlage
—Grossbuchstabe = Innengewinde

Tolerance 6H
—Number = degree of accuracy
—Letter = tolerance position
—Capital letter = internal thread



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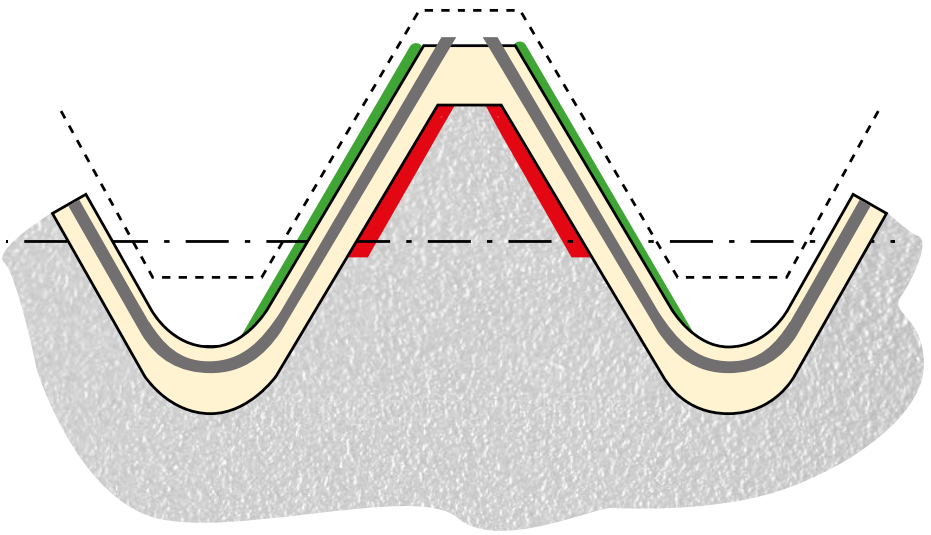
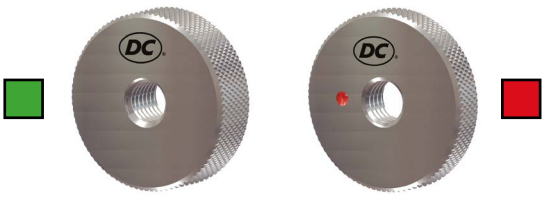


Bolzengewinde
Bolt thread

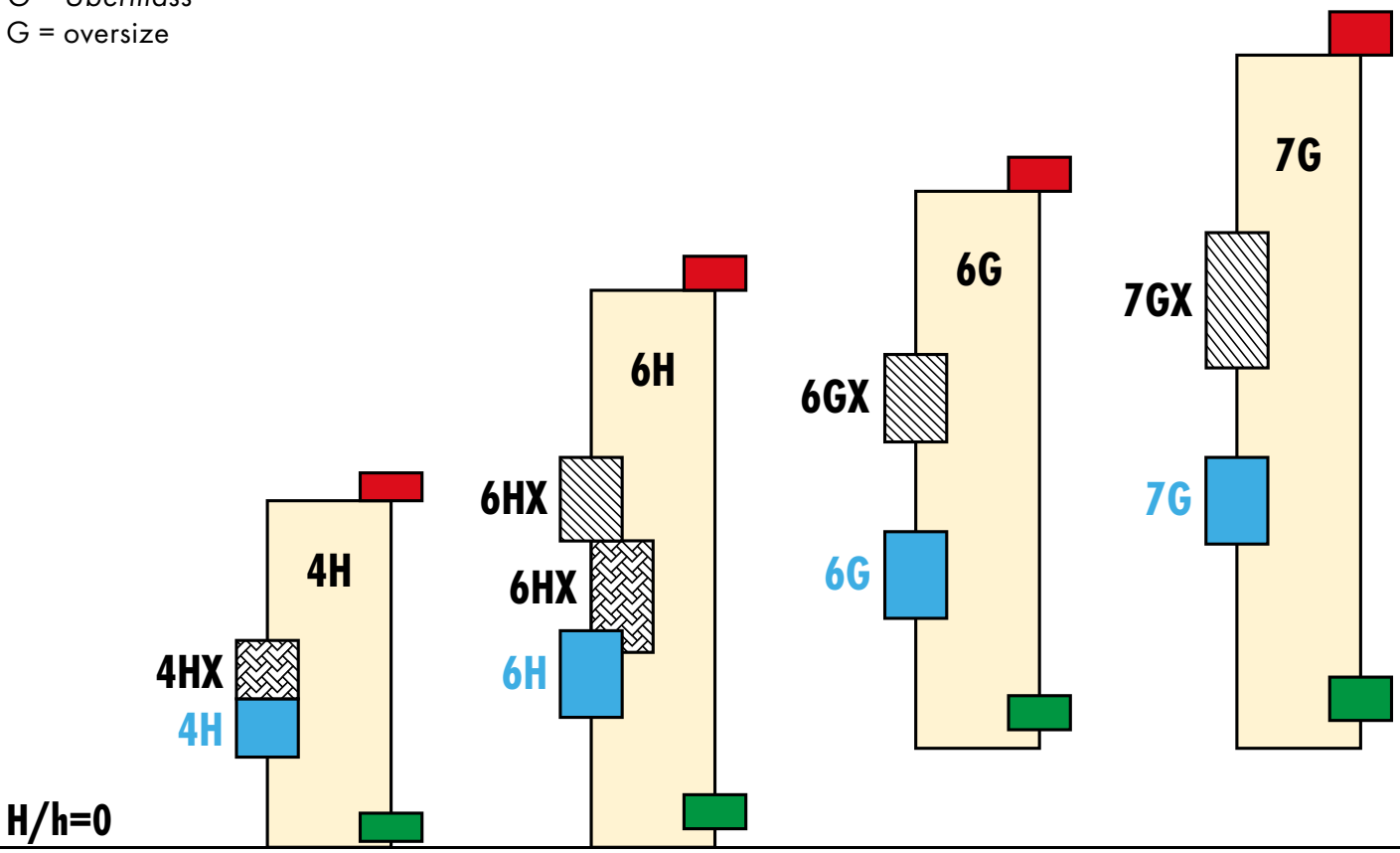
Toleranz 6g
—Zahl = Genauigkeitsgrad
—Kleinbuchstabe = Aussengewinde

Tolerance 6g
—Number = degree of accuracy
—Lowercase letter = external thread

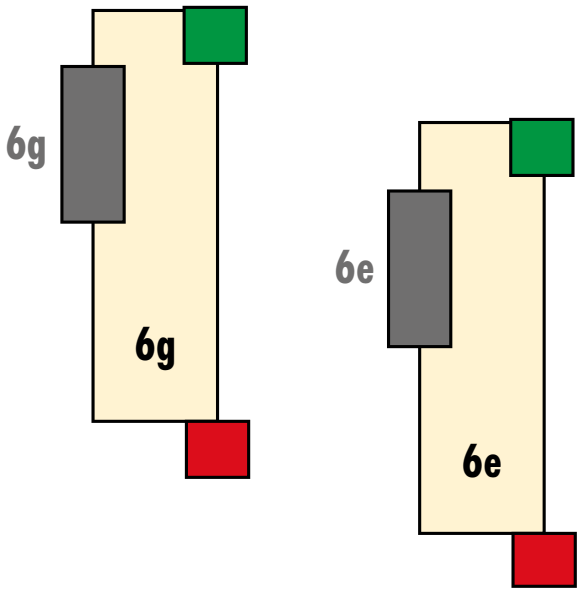


TOLERANZEN FÜR M- UND MF-GEWINDE
TOLERANCES FOR M AND MF THREADS

G = Übermass
G = oversize



e = Untermass
e = undersize



TOLERANZBEZEICHNUNGEN NACH DIN EN 22857 FÜR GEWINDEBOHRER MIT METRISCHEM ISO-GEWINDE

Die Norm DIN 802, Teil 1, wurde zurückgezogen und durch die Norm DIN EN 22857 ersetzt.

In der nachfolgenden Tabelle ist in einer Gegenüberstellung die Norm DIN EN 22857 zu der zurückgezogenen Norm DIN 802, Teil 1, festgehalten. Eine wesentliche Änderung ist die Umstellung der Gewindebohrer-Toleranzklassen in die Bezeichnung der Gewindebohrer nach Anwendungsklassen.

Anwendungsklassen der Gewindebohrer nach DIN EN 22857		*Toleranzklassen nach zurückgezogener Norm DIN 802, Teil 1*	*Zuordnung zu den Toleranzfeldern des zu schneidenden Muttergewindes*				
Benennung	*Kennzeichnung*						
Klasse 1	**ISO 1**	4H	4H	5H	-	-	-
Klasse 2	**ISO 2**	6H	4G	5G	6H	-	-
Klasse 3	**ISO 3**	6G	-	-	6G	7H	8H
	-	7G	-	-	-	7G	8G

Für die Änderung ist mit einer entsprechenden Übergangszeit zu rechnen.

Die Kennzeichnungen der Toleranzklassen 7G / 8G und der "X"-Toleranzlagen sind in der Norm DIN EN 22857 noch nicht genormt und werden deshalb weiterhin unverändert nach der zurückgezogenen Norm DIN 802, Teil 1, vorgenommen.

TOLERANCE NOTATIONS TO DIN EN 22857 FOR TAPS WITH METRIC ISO THREADS

The standard DIN 802, part 1, has been withdrawn and replaced by DIN EN 22857.

The following chart gives a comparison between the standard DIN EN 22857 and the withdrawn standard DIN 802, part 1. An important change is the re-classification from tap tolerance classes to tap application classes.

Application classes for taps to DIN EN 22857		Tolerance classes to withdrawn standard DIN 802, part 1	Allotment of the tolerance zones of the nut thread to be cut				
Name	Code						
Class 1	**ISO 1**	4H	4H	5H	-	-	-
Class 2	**ISO 2**	6H	4G	5G	6H	-	-
Class 3	**ISO 3**	6G	-	-	6G	7H	8H
-	-	7G	-	-	-	7G	8G

A suitable transition period is to be expected.

Codes for tolerance classes 7G / 8G and the "X" tolerance zones have not yet been standardised within DIN EN 22857 and the values from DIN 802 part 1 will continue to be valid.

METRISCHES ISO-GEWINDE DIN 13

Nennmasse, Flankendurchmesser-Grenzmasse

Gewinde-Nennmasse		Steigung	Toleranz	Muttergewinde Flankendurchmesser		Toleranz	Bolzengewinde Flankendurchmesser	
				min.	max.		max.	min.
M	1	(x0.25)	4H	0.838	0.883	6h	0.838	0.785
M	1.4	(x0.3)	4H	1.205	1.253	6h	1.205	1.149
M	1.6	(x0.35)	6H	1.373	1.458	6g	1.354	1.291
M	2	(x0.4)	6H	1.740	1.830	6g	1.721	1.654
M	2	x0.25	4H	1.838	1.886	6h	1.838	1.782
M	2.2	(x0.45)	6H	1.908	2.003	6g	1.888	1.817
M	2.5	(x0.45)	6H	2.208	2.303	6g	2.188	2.117
M	3	(x0.5)	6H	2.675	2.775	6g	2.655	2.580
M	3	x0.35	6H	2.773	2.863	6g	2.754	2.687
M	3.5	(x0.6)	6H	3.110	3.222	6g	3.089	3.004
M	4	(x0.7)	6H	3.545	3.663	6g	3.523	3.433
M	4	x0.5	6H	3.675	3.775	6g	3.655	3.580
M	4.5	(x0.75)	6H	4.013	4.131	6g	3.991	3.901
M	5	(x0.8)	6H	4.480	4.605	6g	4.456	4.361
M	6	(x1)	6H	5.350	5.500	6g	5.324	5.212
M	6	x0.75	6H	5.513	5.645	6g	5.491	5.391
M	6	x0.5	6H	5.675	5.787	6g	5.655	5.570
M	7	(x1)	6H	6.350	6.500	6g	6.324	6.212
M	8	(x1.25)	6H	7.188	7.348	6g	7.160	7.042
M	10	(x1.5)	6H	9.026	9.206	6g	8.994	8.862
M	12	(x1.75)	6H	10.863	11.063	6g	10.829	10.679
M	12	x1.5	6H	11.026	11.216	6g	10.994	10.854
M	12	x1.25	6H	11.188	11.368	6g	11.160	11.028
M	12	x1	6H	11.350	11.510	6g	11.324	11.206
M	12	x0.75	6H	11.513	11.653	6g	11.491	11.385
M	12	x0.5	6H	11.675	11.793	6g	11.655	11.565
M	14	(x2)	6H	12.701	12.913	6g	12.663	12.503
M	16	(x2)	6H	14.701	14.913	6g	14.663	14.503
M	18	(x2.5)	6H	16.376	16.600	6g	16.334	16.164
M	20	(x2.5)	6H	18.376	18.600	6g	18.334	18.164
M	22	(x2.5)	6H	20.376	20.600	6g	20.334	20.164
M	24	(x3)	6H	22.051	22.316	6g	22.003	21.803
M	24	x2	6H	22.701	22.925	6g	22.663	22.493
M	24	x1.5	6H	23.026	23.226	6g	22.994	22.844
M	24	x1	6H	23.350	23.520	6g	23.324	23.199
M	27	(x3)	6H	25.051	25.316	6g	25.003	24.803
M	30	(x3.5)	6H	27.727	28.007	6g	27.674	27.462
M	33	(x3.5)	6H	30.727	31.007	6g	30.674	30.462
M	36	(x4)	6H	33.402	33.702	6g	33.342	33.118
M	39	(x4)	6H	36.402	36.702	6g	36.342	36.118
M	42	(x4.5)	6H	39.077	39.392	6g	39.014	38.778
M	45	(x4.5)	6H	42.077	42.392	6g	42.014	41.778
M	48	(x5)	6H	44.752	45.087	6g	44.681	44.431
M	48	x4	6H	45.402	45.717	6g	45.342	45.106
M	48	x3	6H	46.051	46.331	6g	46.003	45.791
M	48	x2	6H	46.701	46.937	6g	46.663	46.483
M	48	1.5	6H	47.026	47.238	6g	46.994	46.834
M	48	x1	6H	47.350	47.530	6g	47.324	47.184
M	52	(x5)	6H	48.752	49.087	6g	48.681	48.431
M	56	(x5.5)	6H	52.428	52.783	6g	52.353	52.088
M	60	(x5.5)	6H	56.428	56.783	6g	56.353	56.088
M	64	(x6)	6H	60.103	60.478	6g	60.023	59.743
M	68	(x6)	6H	64.103	64.478	6g	64.023	63.743

Andere Durchmesser-Steigungs-Kombinationen

Die Nenn- und Grenzwerte von anderen, in dieser Tabelle nicht aufgeführten metrischen ISO-Gewinden, können sehr leicht von einem oben aufgeführten Gewinde gleicher Steigung, durch Addition oder Subtraktion der Durchmesser-Differenz der Nennwerte, bestimmt werden; z.B. erhält man die Nenn- und Grenzwerte eines Gewindes MF11 x 0.5 aus denjenigen des Gewindes MF6 x 0.5, indem zu allen Nenn- und Grenzwerten 5 mm addiert werden. Diese Berechnungsregeln gelten allerdings nur innerhalb eines der nachstehenden Durchmesserbereiches:

über 0.99	bis 1.4 mm	über 5.6	bis 11.2 mm	über 45	bis 90 mm
über 1.4	bis 2.8 mm	über 11.2	bis 22.4 mm	über 90	bis 180 mm
über 2.8	bis 5.6 mm	über 22.4	bis 45.0 mm	über 180	bis 355 mm

METRIC THREADS ISO DIN 13

Nominal thread diameters - Pitch diameters

Nominal thread diameters	Pitch	Tol.	Nut thread Pitch diameters		Tol.	Bolt thread Pitch diameters	
			mini	maxi		maxi	mini
M 1	(x0.25)	4H	0.838	0.883	6h	0.838	0.785
M 1.4	(x0.3)	4H	1.205	1.253	6h	1.205	1.149
M 1.6	(x0.35)	6H	1.373	1.458	6g	1.354	1.291
M 2	(x0.4)	6H	1.740	1.830	6g	1.721	1.654
M 2	x0.25	4H	1.838	1.886	6h	1.838	1.782
M 2.2	(x0.45)	6H	1.908	2.003	6g	1.888	1.817
M 2.5	(x0.45)	6H	2.208	2.303	6g	2.188	2.117
M 3	(x0.5)	6H	2.675	2.775	6g	2.655	2.580
M 3	x0.35	6H	2.773	2.863	6g	2.754	2.687
M 3.5	(x0.6)	6H	3.110	3.222	6g	3.089	3.004
M 4	(x0.7)	6H	3.545	3.663	6g	3.523	3.433
M 4	x0.5	6H	3.675	3.775	6g	3.655	3.580
M 4.5	(x0.75)	6H	4.013	4.131	6g	3.991	3.901
M 5	(x0.8)	6H	4.480	4.605	6g	4.456	4.361
M 6	(x1)	6H	5.350	5.500	6g	5.324	5.212
M 6	x0.75	6H	5.513	5.645	6g	5.491	5.391
M 6	x0.5	6H	5.675	5.787	6g	5.655	5.570
M 7	(x1)	6H	6.350	6.500	6g	6.324	6.212
M 8	(x1.25)	6H	7.188	7.348	6g	7.160	7.042
M 10	(x1.5)	6H	9.026	9.206	6g	8.994	8.862
M 12	(x1.75)	6H	10.863	11.063	6g	10.829	10.679
M 12	x1.5	6H	11.026	11.216	6g	10.994	10.854
M 12	x1.25	6H	11.188	11.368	6g	11.160	11.028
M 12	x1	6H	11.350	11.510	6g	11.324	11.206
M 12	x0.75	6H	11.513	11.653	6g	11.491	11.385
M 12	x0.5	6H	11.675	11.793	6g	11.655	11.565
M 14	(x2)	6H	12.701	12.913	6g	12.663	12.503
M 16	(x2)	6H	14.701	14.913	6g	14.663	14.503
M 18	(x2.5)	6H	16.376	16.600	6g	16.334	16.164
M 20	(x2.5)	6H	18.376	18.600	6g	18.334	18.164
M 22	(x2.5)	6H	20.376	20.600	6g	20.334	20.164
M 24	(x3)	6H	22.051	22.316	6g	22.003	21.803
M 24	x2	6H	22.701	22.925	6g	22.663	22.493
M 24	x1.5	6H	23.026	23.226	6g	22.994	22.844
M 24	x1	6H	23.350	23.520	6g	23.324	23.199
M 27	(x3)	6H	25.051	25.316	6g	25.003	24.803
M 30	(x3.5)	6H	27.727	28.007	6g	27.674	27.462
M 33	(x3.5)	6H	30.727	31.007	6g	30.674	30.462
M 36	(x4)	6H	33.402	33.702	6g	33.342	33.118
M 39	(x4)	6H	36.402	36.702	6g	36.342	36.118
M 42	(x4.5)	6H	39.077	39.392	6g	39.014	38.778
M 45	(x4.5)	6H	42.077	42.392	6g	42.014	41.778
M 48	(x5)	6H	44.752	45.087	6g	44.681	44.431
M 48	x4	6H	45.402	45.717	6g	45.342	45.106
M 48	x3	6H	46.051	46.331	6g	46.003	45.791
M 48	x2	6H	46.701	46.937	6g	46.663	46.483
M 48	1.5	6H	47.026	47.238	6g	46.994	46.834
M 48	x1	6H	47.350	47.530	6g	47.324	47.184
M 52	(x5)	6H	48.752	49.087	6g	48.681	48.431
M 56	(x5.5)	6H	52.428	52.783	6g	52.353	52.088
M 60	(x5.5)	6H	56.428	56.783	6g	56.353	56.088
M 64	(x6)	6H	60.103	60.478	6g	60.023	59.743
M 68	(x6)	6H	64.103	64.478	6g	64.023	63.743

Other diameter/pitch combinations

The nominal and tolerance values of other metric ISO threads not listed in this chart can easily be established for threads of the same pitch by the addition or subtraction of the difference in the nominal diameter: E.G. the nominal and tolerance values for an MF11 x 0.5 thread are obtained by simply adding 5 mm to the values for the thread MF6 x 0.5. However, this rule only applies within the following diameter ranges:

over 0.99	to 1.4 mm	over 5.6	to 11.2 mm	over 45	to 90 mm
over 1.4	to 2.8 mm	over 11.2	to 22.4 mm	over 90	to 180 mm
over 2.8	to 5.6 mm	over 22.4	to 45.0 mm	over 180	to 355 mm

METRISCHES ISO-GEWINDE

Flankendurchmesser-Toleranzen für Gewindebohrer

Gewinde Nenn-Ø (Aussen-Ø) über	bis	Gewinde-Steigung P	Toleranzklasse	Unteres Abmass	Oberes Abmass
0.99	1.4	0.2	ISO 1 / 4H	+ 5	+ 15
		0.25	ISO 1 / 4H	+ 6	+ 17
		0.3	ISO 1 / 4H	+ 6	+ 18
			ISO 2 / 6H	+ 18	+ 30
1.4	2.8	0.2	ISO 1 / 4H	+ 5	+ 15
		0.25	ISO 1 / 4H	+ 6	+ 18
		0.35	ISO 1 / 4H	+ 7	+ 20
			ISO 2 / 6H	+ 20	+ 34
		0.4	ISO 1 / 4H	+ 7	+ 21
			ISO 2 / 6H	+ 21	+ 36
		0.45	ISO 1 / 4H	+ 8	+ 23
			ISO 2 / 6H	+ 23	+ 38
2.8	5.6	0.35	ISO 1 / 4H	+ 7	+ 21
			ISO 2 / 6H	+ 21	+ 36
		0.5	ISO 1 / 4H	+ 8	+ 24
			ISO 2 / 6H	+ 24	+ 40
			ISO 3 / 6G	+ 40	+ 55
			7G	+ 55	+ 70
		0.6	ISO 1 / 4H	+ 9	+ 27
			ISO 2 / 6H	+ 27	+ 45
			ISO 3 / 6G	+ 45	+ 63
			7G	+ 63	+ 81
		0.7	ISO 1 / 4H	+ 10	+ 29
		0.75	ISO 2 / 6H	+ 29	+ 48
			ISO 3 / 6G	+ 48	+ 67
			7G	+ 67	+ 86
		0.8	ISO 1 / 4H	+ 10	+ 30
			ISO 2 / 6H	+ 30	+ 50
			ISO 3 / 6G	+ 50	+ 70
			7G	+ 70	+ 90
5.6	11.2	1	ISO 1 / 4H	+ 12	+ 35
			ISO 2 / 6H	+ 35	+ 59
			ISO 3 / 6G	+ 59	+ 83
			7G	+ 83	+ 107
		1.25	ISO 1 / 4H	+ 13	+ 38
			ISO 2 / 6H	+ 38	+ 63
			ISO 3 / 6G	+ 63	+ 88
			7G	+ 88	+ 113
		1.5	ISO 1 / 4H	+ 14	+ 42
			ISO 2 / 6H	+ 42	+ 70
			ISO 3 / 6G	+ 70	+ 98
			7G	+ 98	+ 126
11.2	22.4	1	ISO 1 / 4H	+ 13	+ 38
			ISO 2 / 6H	+ 38	+ 63
			ISO 3 / 6G	+ 63	+ 88
			7G	+ 88	+ 113
		1.25	ISO 1 / 4H	+ 14	+ 42
			ISO 2 / 6H	+ 42	+ 70
			ISO 3 / 6G	+ 70	+ 98
			7G	+ 98	+ 126
		1.5	ISO 1 / 4H	+ 15	+ 45
			ISO 2 / 6H	+ 45	+ 75
			ISO 3 / 6G	+ 75	+ 105
			7G	+ 105	+ 135
		1.75	ISO 1 / 4H	+ 16	+ 48
			ISO 2 / 6H	+ 48	+ 80
			ISO 3 / 6G	+ 80	+ 112
			7G	+ 112	+ 144
		2	ISO 1 / 4H	+ 17	+ 51
			ISO 2 / 6H	+ 51	+ 85
			ISO 3 / 6G	+ 85	+ 119
			7G	+ 119	+ 153
11.2	22.4	2.5	ISO 1 / 4H	+ 18	+ 54
			ISO 2 / 6H	+ 54	+ 90
			ISO 3 / 6G	+ 90	+ 126
			7G	+ 126	+ 162
22.4	45	1	ISO 1 / 4H	+ 13	+ 40
			ISO 2 / 6H	+ 40	+ 66
			ISO 3 / 6G	+ 66	+ 92
			7G	+ 92	+ 118
		1.5	ISO 1 / 4H	+ 16	+ 48
			ISO 2 / 6H	+ 48	+ 80
			ISO 3 / 6G	+ 80	+ 112
			7G	+ 112	+ 144
		2	ISO 1 / 4H	+ 18	+ 54
			ISO 2 / 6H	+ 54	+ 90
			ISO 3 / 6G	+ 90	+ 126
			7G	+ 126	+ 162
		3	ISO 1 / 4H	+ 21	+ 64
			ISO 2 / 6H	+ 64	+ 106
			ISO 3 / 6G	+ 106	+ 148
			7G	+ 148	+ 190
		3.5	ISO 1 / 4H	+ 22	+ 67
			ISO 2 / 6H	+ 67	+ 112
			ISO 3 / 6G	+ 112	+ 157
			7G	+ 157	+ 202
		4	ISO 1 / 4H	+ 24	+ 71
			ISO 2 / 6H	+ 71	+ 118
			ISO 3 / 6G	+ 118	+ 165
			7G	+ 165	+ 212
		4.5	ISO 1 / 4H	+ 25	+ 75
			ISO 2 / 6H	+ 75	+ 125
			ISO 3 / 6G	+ 125	+ 175
			7G	+ 175	+ 225
45	90	1.5	ISO 1 / 4H	+ 17	+ 51
			ISO 2 / 6H	+ 51	+ 85
			ISO 3 / 6G	+ 85	+ 119
			7G	+ 119	+ 153
		2	ISO 1 / 4H	+ 19	+ 57
			ISO 2 / 6H	+ 57	+ 95
			ISO 3 / 6G	+ 95	+ 133
			7G	+ 133	+ 171
		3	ISO 1 / 4H	+ 22	+ 67
			ISO 2 / 6H	+ 67	+ 112
			ISO 3 / 6G	+ 112	+ 157
			7G	+ 157	+ 202
		4	ISO 1 / 4H	+ 25	+ 75
			ISO 2 / 6H	+ 75	+ 125
			ISO 3 / 6G	+ 125	+ 175
			7G	+ 175	+ 225
		5	ISO 1 / 4H	+ 27	+ 80
			ISO 2 / 6H	+ 80	+ 133
			ISO 3 / 6G	+ 133	+ 186
			7G	+ 186	+ 239
		5.5	ISO 1 / 4H	+ 28	+ 84
			ISO 2 / 6H	+ 84	+ 140
			ISO 3 / 6G	+ 140	+ 196
			7G	+ 196	+ 252
		6	ISO 1 / 4H	+ 30	+ 90
			ISO 2 / 6H	+ 90	+ 150
			ISO 3 / 6G	+ 150	+ 210
			7G	+ 210	+ 270

METRIC ISO THREADS

Pitch diameter tolerances for taps

Nominal thread Ø over	to	Pitch P	Tolerance classes	Lower limit	Upper limit
0.99	1.4	0.2	ISO 1 / 4H	+ 5	+ 15
		0.25	ISO 1 / 4H	+ 6	+ 17
		0.3	ISO 1 / 4H	+ 6	+ 18
			ISO 2 / 6H	+ 18	+ 30
1.4	2.8	0.2	ISO 1 / 4H	+ 5	+ 15
		0.25	ISO 1 / 4H	+ 6	+ 18
		0.35	ISO 1 / 4H	+ 7	+ 20
			ISO 2 / 6H	+ 20	+ 34
		0.4	ISO 1 / 4H	+ 7	+ 21
			ISO 2 / 6H	+ 21	+ 36
		0.45	ISO 1 / 4H	+ 8	+ 23
			ISO 2 / 6H	+ 23	+ 38
2.8	5.6	0.35	ISO 1 / 4H	+ 7	+ 21
			ISO 2 / 6H	+ 21	+ 36
		0.5	ISO 1 / 4H	+ 8	+ 24
			ISO 2 / 6H	+ 24	+ 40
			ISO 3 / 6G	+ 40	+ 55
			7G	+ 55	+ 70
		0.6	ISO 1 / 4H	+ 9	+ 27
			ISO 2 / 6H	+ 27	+ 45
			ISO 3 / 6G	+ 45	+ 63
			7G	+ 63	+ 81
		0.7	ISO 1 / 4H	+ 10	+ 29
		0.75	ISO 2 / 6H	+ 29	+ 48
			ISO 3 / 6G	+ 48	+ 67
			7G	+ 67	+ 86
		0.8	ISO 1 / 4H	+ 10	+ 30
			ISO 2 / 6H	+ 30	+ 50
			ISO 3 / 6G	+ 50	+ 70
			7G	+ 70	+ 90
5.6	11.2	1	ISO 1 / 4H	+ 12	+ 35
			ISO 2 / 6H	+ 35	+ 59
			ISO 3 / 6G	+ 59	+ 83
			7G	+ 83	+ 107
		1.25	ISO 1 / 4H	+ 13	+ 38
			ISO 2 / 6H	+ 38	+ 63
			ISO 3 / 6G	+ 63	+ 88
			7G	+ 88	+ 113
		1.5	ISO 1 / 4H	+ 14	+ 42
			ISO 2 / 6H	+ 42	+ 70
			ISO 3 / 6G	+ 70	+ 98
			7G	+ 98	+ 126
11.2	22.4	1	ISO 1 / 4H	+ 13	+ 38
			ISO 2 / 6H	+ 38	+ 63
			ISO 3 / 6G	+ 63	+ 88
			7G	+ 88	+ 113
		1.25	ISO 1 / 4H	+ 14	+ 42
			ISO 2 / 6H	+ 42	+ 70
			ISO 3 / 6G	+ 70	+ 98
			7G	+ 98	+ 126
		1.5	ISO 1 / 4H	+ 15	+ 45
			ISO 2 / 6H	+ 45	+ 75
			ISO 3 / 6G	+ 75	+ 105
			7G	+ 105	+ 135
		1.75	ISO 1 / 4H	+ 16	+ 48
			ISO 2 / 6H	+ 48	+ 80
			ISO 3 / 6G	+ 80	+ 112
			7G	+ 112	+ 144
		2	ISO 1 / 4H	+ 17	+ 51
			ISO 2 / 6H	+ 51	+ 85
			ISO 3 / 6G	+ 85	+ 119
			7G	+ 119	+ 153

Nominal thread Ø over	to	Pitch P	Tolerance classes	Lower limit	Upper limit
11.2	22.4	2.5	ISO 1 / 4H	+ 18	+ 54
			ISO 2 / 6H	+ 54	+ 90
			ISO 3 / 6G	+ 90	+ 126
			7G	+ 126	+ 162
22.4	45	1	ISO 1 / 4H	+ 13	+ 40
			ISO 2 / 6H	+ 40	+ 66
			ISO 3 / 6G	+ 66	+ 92
			7G	+ 92	+ 118
		1.5	ISO 1 / 4H	+ 16	+ 48
			ISO 2 / 6H	+ 48	+ 80
			ISO 3 / 6G	+ 80	+ 112
			7G	+ 112	+ 144
		2	ISO 1 / 4H	+ 18	+ 54
			ISO 2 / 6H	+ 54	+ 90
			ISO 3 / 6G	+ 90	+ 126
			7G	+ 126	+ 162
		3	ISO 1 / 4H	+ 21	+ 64
			ISO 2 / 6H	+ 64	+ 106
			ISO 3 / 6G	+ 106	+ 148
			7G	+ 148	+ 190
		3.5	ISO 1 / 4H	+ 22	+ 67
			ISO 2 / 6H	+ 67	+ 112
			ISO 3 / 6G	+ 112	+ 157
			7G	+ 157	+ 202
		4	ISO 1 / 4H	+ 24	+ 71
			ISO 2 / 6H	+ 71	+ 118
			ISO 3 / 6G	+ 118	+ 165
			7G	+ 165	+ 212
		4.5	ISO 1 / 4H	+ 25	+ 75
			ISO 2 / 6H	+ 75	+ 125
			ISO 3 / 6G	+ 125	+ 175
			7G	+ 175	+ 225
45	90	1.5	ISO 1 / 4H	+ 17	+ 51
			ISO 2 / 6H	+ 51	+ 85
			ISO 3 / 6G	+ 85	+ 119
			7G	+ 119	+ 153
		2	ISO 1 / 4H	+ 19	+ 57
			ISO 2 / 6H	+ 57	+ 95
			ISO 3 / 6G	+ 95	+ 133
			7G	+ 133	+ 171
		3	ISO 1 / 4H	+ 22	+ 67
			ISO 2 / 6H	+ 67	+ 112
			ISO 3 / 6G	+ 112	+ 157
			7G	+ 157	+ 202
		4	ISO 1 / 4H	+ 25	+ 75
			ISO 2 / 6H	+ 75	+ 125
			ISO 3 / 6G	+ 125	+ 175
			7G	+ 175	+ 225
		5	ISO 1 / 4H	+ 27	+ 80
			ISO 2 / 6H	+ 80	+ 133
			ISO 3 / 6G	+ 133	+ 186
			7G	+ 186	+ 239
		5.5	ISO 1 / 4H	+ 28	+ 84
			ISO 2 / 6H	+ 84	+ 140
			ISO 3 / 6G	+ 140	+ 196
			7G	+ 196	+ 252
		6	ISO 1 / 4H	+ 30	+ 90
			ISO 2 / 6H	+ 90	+ 150
			ISO 3 / 6G	+ 150	+ 210
			7G	+ 210	+ 270

INTERESSANTE HINWEISE ZUM GEWINDESCHNEIDEN

Optimale Einsatzbedingungen reduzieren die effektiven Arbeitszeiten und erhöhen die Lebensdauer der Gewindebohrer.

Wahl des bestgeeigneten Gewindebohrers

Welcher Gewindebohrer-Typ, oder ob Gewindeformer eingesetzt werden können, hängt von der Art des zu bearbeitenden Werkstoffes ab.

Allgemein gilt als Richtlinie, dass sich Werkstoffe mit einer Bruchdehnung von mindestens 10 % kalt verformen lassen.

Zur Bestimmung des bestgeeigneten Gewindebohrers dienen Ihnen die DC-Anwendungstabellen.

Kernlochbohrungen

- *Die Kernlochbohrungen sollten sauber und die Bohrspäne entfernt sein.*
- *Die Kernlochdurchmesser sind nach Norm, Auszug in diesem Katalog im technischen Teil, und je nach Arbeitsfall im oberen Grenzbereich, zu bestimmen.*

Schmiermittel in Bezug auf Bearbeitungszentren

Oft erweisen sich die auf Bearbeitungszentren verwendeten Kühlmittel für das Gewindeschneiden als ungenügend, weil die Schmierfähigkeit zu niedrig ist. Wenn es nicht möglich ist, die Schmierfähigkeit der Emulsion zu erhöhen, kann das Schmierproblem oft auf anderem Weg gelöst werden, z.B.:

Schmieren mit dem Konzentrat der Emulsion

A. *Der Maschinensteuerung angeschlossen, schiesst ein Schmiergerät, zum gewollten Zeitpunkt, eine bestimmte Menge Schmierkonzentrat ins Gewinde-Kernloch oder an den Gewindebohrer.*
B. *Aus separatem Behälter, gesteuert durch die Maschine, befördert eine Pumpe die bestimmte Menge Konzentrat zum Gewinde-Kernloch.*

Gewindeschneiden in Nacharbeit

Dieses Vorgehen ermöglicht es, das ideale Schmiermittel zu verwenden.

Schnittgeschwindigkeiten für Gewindebohrer

Die Schnittgeschwindigkeit hat einen grossen Einfluss auf die Spanabfuhr und die Lebensdauer der Gewindebohrer. Es lohnt sich deshalb, die ideale Schnittgeschwindigkeit durch Schneidversuche zu ermitteln; Richtwerte siehe DC-Anwendungstabellen.

Die Schnittgeschwindigkeit sollte den Charakteristiken des Werkstoffes, der Maschine, sowie deren Ausrüstung entsprechen.

Auswirkungen von nicht angepasster Schnittgeschwindigkeit:

- *Aufbauschneiden*
- *Ausbrüche am Anschnitt infolge Überlastung der Schneidzähne*
- *aufgerissene Gewinde*
- *ungenügende Standzeit der Gewindebohrer*
- *Ausschuss-Gewinde*

INTERESSANTE HINWEISE ZUM GEWINDESCHNEIDEN

Kaltschweissungen

Aus welchen Gründen entstehen Kaltschweissungen?
- *Zu hohe oder zu niedrige Drehzahl*
- *Nicht geeigneter Gewindebohrer-Typ*
- *Gewindebohrer mit unpassender Schneidengeometrie*
- *Schmiermittel, nicht dem Werkstoff entsprechend*
- *Schmiermittel, Menge ungenügend*
- *Axial-Druck oder Zug auf Gewindebohrer*
- *Kernloch zu klein*
- *Aufgerissene Kernloch-Wandungen*
- *Bohrspäne in der Bohrung*
- *Zentrierfehler*
- *Rundlauffehler*

Auswirkungen der Kaltschweissungen:
- *aufgerissene Gewinde*
- *ungenügende Standzeiten der Gewindebohrer*
- *Ausschussgewinde*
- *Werkzeugbruch*
- *Ausschuss-Werkstücke*

Gewindebohrer-Aufspannung

- *Der Gewindebohrer ist axial zum Kernloch einzuspannen.*
- *Bei nicht vollsynchronisierten Maschinen (Interpolation - Vorschub/Drehzahl) empfehlen wir den Einsatz eines Gewindeschneidfutters (Gewindeschneidspindel).*

Aufnahme-Futter für Gewindebohrer

Bei nicht vollsynchronisierter Maschinenspindel (Vorschub/Umdrehungen) ist der Vorschub in der Regel ca. 5 - 10 % kleiner zu programmieren als die Gewindesteigung. In diesen Fällen ist ein Gewindeschneidfutter zu verwenden, bei dem es möglich ist, den Unterschied zwischen dem Vorschub und der Steigung zu kompensieren.

Wichtig ist, dass die Zugfeder des Längenausgleichs leichtgängig eingestellt ist, um den Gewindebohrer nicht mit axialem Zug zu belasten.

Die Andruckfeder hingegen ist so stark zu spannen, dass der Gewindebohrer anschneidet, ohne diese zu komprimieren, oder bis höchstens um den Wert der halben Steigung.

Wichtige Hinweise:
Eine gute Stabilität von Maschine und Aufnahme sind Voraussetzung für eine optimale Qualität und Leistung.
Stellen Sie sicher, dass die richtige Schnittgeschwindigkeit gewählt ist.
Achten Sie darauf, dass beim Gewindeschneiden reichlich Schmiermittel verwendet wird.

INTERESTING HINTS FOR TAPPING

Optimum tapping conditions reduce effective machining times and increase tap life.

Selection of the most suitable tap

Which types of tap or whether or not a thread former can be used, depends on the type of material to be machined.

As a general guide, materials with an extension of at least 10 % can be cold-formed.

To determine the most suitable tap, refer to the DC application charts.

Core holes

—Core holes should be clean and swarf-free.
—Core holes should be of the prescribed size, see chart extract in the technical part of this catalogue, and dependent on the actual application, selected towards the upper diameter limit.

Lubricant in relation to machining centers

Frequently the coolants used on machining centers are insufficient for tapping because their percentage lubricant content is too low. If it is not possible to increase the percentage of lubricant in the emulsion, the lubrication problem can be solved in other ways, i.e.:

Lubricating with concentrated emulsion

A. A lubricating unit, connected to the machine control, delivers at the required instant a specific quantity of concentrated emulsion into the core hole or onto the tap.
B. A pump in a separate tank, controlled by the machine, delivers a specific quantity of concentrate into the core hole.

Tapping in separate operations
This procedure allows the use of the ideal tapping lubricant.

Cutting speeds for taps

The cutting speed has a great influence on chip flow and the life time of the tap. It is therefore worthwhile to establish the ideal cutting speed by tapping trials. Guide values see on the DC application charts.

The cutting speed should be in relation to the characteristics of the material to be performed, the machine and its equipment.

Effects of unsuitable cutting speeds

—forced tapping
—tap lead chipping caused by overloaded cutting tooth
—torn threads
—unsatisfactory tap life
—rejected threads

INTERESTING HINTS FOR TAPPING

Cold welding

What are the causes of cold welding?
- —Cutting speed too high or too low
- —Unsuitable tap selection
- —Tap with non-adapted cutting geometry
- —Coolant unsuitable for material
- —Insufficient coolant
- —Axial pressure (pull or push) on the tap
- —Core hole too small
- —Torn core hole walls
- —Drill chips in the hole
- —Centering error
- —Concentricity error

Effects of cold welding:
- —torn threads
- —short tap life
- —rejected threads
- —tool breakage
- —scrap workpieces

Tap fitting

- —The tap must be clamped axially to the core hole.
- —On non-synchronized machines (feed/speed), we recommend the use of a tapping spindle.

Tapping heads

With non-synchronized machine spindles (feed/speed) the feed rate should, as a rule, be programmed approx. 5 - 10 % lower than the thread pitch. In these cases a tapping chuck must be used which will compensate the difference between the feed rate and the thread pitch.

It is important that the tension spring in the axial compensation is set to a light rate to avoid axially loading the tap.

The compression spring, on the other hand, should be tensioned so that the tap starts to cut by compressing the spring at the most up to one half pitch.

Important hints:
A good stability of machine and equipment is a prerequisite for optimum quality and performance.
Ensure that the correct cutting speed is selected.
Make sure that ample lubricating coolant is used when tapping.

GEWINDEBOHRER-EINSATZ, ANWENDUNG-TIPS

Problem	***Ursachen***	***Abhilfe durch***
Zahnausbrüche am Gewindebohrer	*Spanstau*	*Schnittgeschwindigkeit überprüfen. Anderen Gewindebohrer-Typen einsetzen (K / N.62.-3 / Z.70VS).*
	Gewindebohrer ist auf den Grund des Kernloches aufgestossen	*Kernloch- und Gewindetiefe kontrollieren. Kernloch tiefer bohren.*
	Unregelmässige Struktur des Werkstoffes	*Schnittgeschwindigkeit anpassen. Schmierfähigkeit des Kühlschmiermittels verbessern. Gewindebohrer mit anderer Schneidengeometrie / Beschichtung einsetzen.*
	Gewindebohrer falsch nachgeschliffen (Anschnittdurchmesser zu klein, deshalb zu wenig arbeitende Zähne)	*Beim Nachschleifen darauf achten, dass die gleichen Werte wie bei neuen Werkzeugen angewendet werden.*

Problem	***Ursachen***	***Abhilfe durch***
Übermässige Abnützung	*Falsche Schnittgeschwindigkeit*	*Schnittgeschwindigkeit dem zu bearbeitenden Werkstoff anpassen. Gewindebohrer mit empfohlener Beschichtung einsetzen.*
	Kühlschmiermittel ungenügend in Bezug auf Schmierfähigkeit und / oder Zufuhr	*Kühlschmierung verbessern. Dafür sorgen, dass das Kühlschmiermittel ausreichend bis an die Anschnittzone des Gewindebohrers geführt wird.*
	Oberfläche des Kernloches ist verdichtet	*Einsatzbedingungen für Kernlochbohrungen überprüfen (sorgfältig bohren, damit sich der Werkstoff so wenig wie möglich verfestigt). Schneidkanten des Spiralbohrers kontrollieren.*
	Synchronisierung	*Synchronisierungsstatus prüfen. Starres Gewindeschneiden in Materialien mit hohen mechanischen Eigenschaften vermeiden.*

Problem	***Ursachen***	***Abhilfe durch***
Gewindebohrer-bruch	*Falscher Gewindebohrer im Einsatz (Schneidengeometrie ist für Arbeitsfall ungeeignet)*	*Gewindebohrer für die zu zerspanende Werkstoffgruppe einsetzen.*
	Schlechter Spanabfluss	*Geometrie der zu schneidenden Gewindetiefe anpassen. Wenn nötig, Nutenlänge anpassen.*
	Zentrierfehler	*Dafür sorgen, dass der Gewindebohrer axial zum Kernloch eingespannt wird.*
	Gewindebohrer ist stumpf	*Gewindebohrer nachschleifen. Darauf achten, dass Gewindebohrer sorgfältig gelagert werden.*
	Gewindebohrer ist auf den Kernlochgrund aufgestossen	*Gewindeschneidspindel mit Längenausgleich und Drehmoment-Überlastungskupplung einsetzen (nicht geeignet für CNC-Maschinen).*
	Kernlochbohrung zu klein	*Kernlochdurchmesser nach Tabelle im technischen Teil dieses Kataloges wählen.*

GEWINDEBOHRER-EINSATZ, ANWENDUNG-TIPS

Problem	***Ursachen***	***Abhilfe durch***
Gewinde zu gross	*Falscher Gewindebohrer-Typ im Einsatz (Schneidengeometrie ist für den Arbeitsfall ungeeignet)*	*Gewindebohrer für die zu zerspanende Werkstoffgruppe einsetzen.*
	Schlechte Zentrierung	*Sich vergewissern, dass Gewindebohrer und Kernloch axial zueinander verlaufen.*
	Kaltschweissungen	*Schmierfähigkeit und Zufuhr des Kühlschmiermittels verbessern.* *Schnittgeschwindigkeit anpassen.* *Gewindebohrer mit empfohlener Oberflächenbehandlung oder Beschichtung einsetzen.*
	Nachgeschliffene Gewindebohrer (Anschnitt ist nicht konzentrisch)	*Gewindebohrer auf Anschnitt-Schleifmaschine nochmals korrekt nachschleifen.*

Problem	***Ursachen***	***Abhilfe durch***
Gewinde verschnitten	*Falscher Gewindebohrer im Einsatz (Schneidengeometrie ist für den Arbeitsfall ungeeignet)*	*Gewindebohrer für die zu zerspanende Werkstoffgruppe einsetzen.*
	Umdrehungen der Spindel stimmen nicht mit Vorschub überein	*Programmierung bzw. Steigung der Leitspindel kontrollieren.* *Einsatz einer Gewindeschneidspindel mit Längenausgleich oder Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer.*
	Synchronisierung	*Synchronisierungsstatus prüfen.* *Starres Gewindeschneiden in Materialien mit hohen mechanischen Eigenschaften vermeiden.*
	Gewindebohrer mit Schälanschnitt wird mit zu geringem Anschnittdruck eingesetzt	*Stärkeres Andrücken beim Anschneiden.*

Problem	***Ursachen***	***Abhilfe durch***
Gewinde mit Vorweite	*Das Gewinde wurde mit falschem Anschnittdruck geschnitten*	*Gewindeschneidspindel mit Längenausgleich einsetzen.*

Problem	***Ursachen***	***Abhilfe durch***
Unsaubere Gewindeoberfläche	*Falscher Gewindebohrer im Einsatz (Schneidengeometrie ist für Arbeitsfall ungeeignet)*	*Gewindebohrer für die zu zerspanende Werkstoffgruppe einsetzen.*
	Gewindebohrer ist stumpf	*Gewindebohrer auswechseln oder nachschleifen.*
	Gewindebohrer falsch nachgeschliffen	*Gewindebohrer nochmals nachschleifen. Kontrollieren, dass Schneidengeometrie Werkstoff entspricht.*
	Kühlschmiermittel ungenügend in Bezug auf Schmierfähigkeit und / oder Zufuhr	*Dafür sorgen, dass Kühlschmiermittel geeignet und ausreichend ist.*

APPLICATION AND USE OF THREADING TAPS

Problem	Causes	Solutions
Partial chipping of tap	Swarf jamming	Check cutting speed. Use alternative tap type (K / N.62.-3 / Z.70VS).
	Tap hits bottom of core hole	Check hole and thread depths. Drill core hole deeper.
	Irregular workpiece material structure	Adjust cutting speed. Improve lubricating quality of coolant. Use tap with other cutting geometry / other coating.
	Tap incorrectly re-ground (lead-in diameter too small, therefore too few cutting teeth)	Ensure that original values are maintained when re-grinding.

Problem	Causes	Solutions
Excessive tap wear	Incorrect cutting speed	Adjust cutting speed to suit workpiece material. Use tap with recommended surface coating.
	Coolant lacking in lubricating qualities and / or quantity	Ensure the use of a suitable coolant and an ample supply. Check that coolant is reaching the cutting zone.
	Surface of the core hole is compacted	Check core hole drilling conditions (drill carefully to reduce risk of surface compacting). Check drill cutting edges.
	Synchronization	Check status of synchronization. Avoid rigid tapping in materials with high mechanical properties.

Problem	Causes	Solutions
Tap breakage	Incorrect tap in use (cutting geometry unsuitable for application)	Use tap from the relevant materil group.
	Bad swarf evacuation	Adapt cutting geometry to the depth to be tapped. Adapt length of flutes if necessary.
	Centering error	Ensure that axes of tap and core hole are aligned.
	Blunt tap	Re-grind tap. Ensure that taps are carefully stored.
	Tap has reached bottom of the core hole	Use tapping spindle with axial float and slipping clutch.
	Core hole too small	Select core hole as per chart in the technical part of this catalogue.

APPLICATION AND USE OF THREADING TAPS

Problem	Causes	Solutions
Tapped hole oversize	Incorrect tap in use (cutting geometry unsuitable for application)	Use tap selected from the relevant material group.
	Faulty alignment	Ensure that the tap is correctly aligned with the core hole axis.
	Cold welding	Improve lubrication and direction of coolant. Adjust cutting speed. Use taps with recommended surface treatment or coating.
	Re-ground tap (lead-in is not concentric)	Re-grind tap lead correctly on a suitable tap grinding machine.

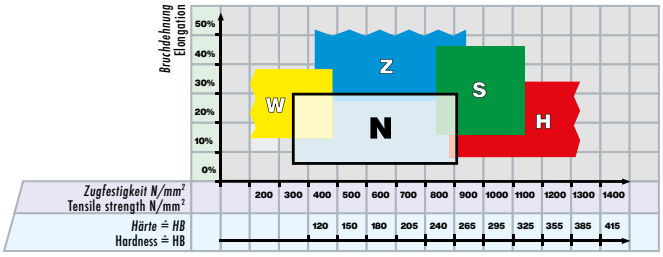
Problem	Causes	Solutions
Stripped threads	Incorrect tap in use (cutting geometry incorrect for application)	Use a tap from the relevant material group.
	Spindle speed and feed rate not synchronized	Check feed rate programming and / or pitch of leading spindle. Use a tapping spindle with axial float or a tapping chuck with axial shock absorber.
	Synchronization	Check status of synchronization. Avoid rigid tapping in materials with high mechanical properties.
	Insufficient start pressure exerted on tap with peeling-cut	Increase start pressure.

Problem	Causes	Solutions
Bell mouthed tapped hole	Incorrect start pressure applied to tap	Use a tapping spindle with axial float.

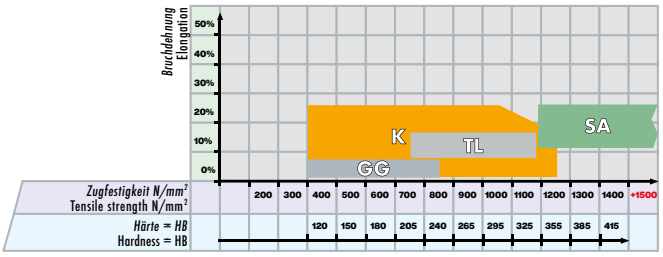
Problem	Causes	Solutions
Unsatisfactory thread surface finish	Incorrect tap in use (cutting geometry unsuitable for application)	Select tap from the relevant material group.
	The tap is blunt	Replace or re-grind tap.
	Tap badly re-ground	Re-grind tap again. Check that cutting geometry is suitable for material.
	Coolant lacking in lubricating qualities and / or quantity	Ensure the use of a suitable coolant and an ample supply.

ANWENDUNGSTABELLE — APPLICATION CHART

Gewindeschneiden
Thread cutting



Gewindeschneiden
Thread cutting



DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Dehnung Elongation A (%)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
		22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
		42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
		64	Messing bleifrei	Lead free brass	< 220	< 700	> 15
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	Silber	Silver	-	-	-

KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING

CLASSIC

Ab Seite: From page:	N Normale Werkstoffe Normal materials										
MJ / M	60	62	60	64	64	72	72	74	60	74	74
MF	125	124	125	125		124		131	131	131	
UNJC / UNC / UNC(J)	154	154	154	154				156	156	156	
UNJF / UNF / UNF(J)	176	176	176	176				178	178	178	
UNEF / UN / UNS	198	198						199	199		
G / Rp / Rc / W / SV	204	205	205	205				206	206	206	
NPT / NPTF	220										
PG / TR	222	222									
EG M / EG UNC / EG UNF		226	226					227	227		

	Vc (m/min) Guide Line						N.10	N.20	N.20V	N.20TN	N.20TC	N.50	N.50V	N.60	N.60V	N.60TN	N.60TC	
	Ø 1 - 2.8 mm		Ø 2.8 - 26 mm		Ø 26 - 60 mm													
	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated												
11	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10				O E	O E	O E		O E		O E	O E	O E	11
12	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10				O E	O E	O E		O E		O E	O E	O E	12
13	8 - 12	10 - 20	8 - 12	16 - 24	10 - 15					O E	O E					O E	O E	13
14	8 - 12	10 - 20	8 - 12	16 - 24	4 - 8				O	O E	O E		O		O	O E	O E	14
15	2 - 4	4 - 10	3 - 5	6 - 12	2 - 4	3 - 5												15
16		2 - 4	3 - 5	3 - 5	2 - 4	3 - 5												16
17			2 - 4															17
18																		18
21	4 - 10	10 - 15	10 - 15	20 - 30	5 - 10					O	O E					O	O E	21
22	3 - 6	4 - 8	3 - 6	6 - 12														22
23	3 - 6	4 - 8	3 - 6	6 - 12														23
24		3 - 5		4 - 8		3 - 5												24
31	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10	15 - 25	E				E						E	31
32	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10				O E	O E	O E		O E		O E	O E	O E	32
41	2 - 4	4 - 8	4 - 8	4 - 8														41
42	2 - 4	3 - 5	3 - 5	3 - 5														42
51		3 - 5		6 - 12														51
52			4 - 8	4 - 8														52
53			2 - 4															53
61	8 - 12		8 - 12	12 - 16	4 - 8			O						O				61
62	6 - 12	6 - 12	20 - 30	30 - 40	15 - 25	25 - 35	O E	E			O E	O E					O E	62
63	10 - 20		16 - 24		8 - 12		O	O E				O E		O E				63
64	10 - 20		16 - 24		8 - 12		O	E			O E	O E					O E	64
71	10 - 15	10 - 15	10 - 15	20 - 40	5 - 10			O				O		O				71
72	10 - 20	20 - 30	20 - 30	20 - 40	10 - 15			O E				O E		O E				72
73	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10		E	E			E	E		E			E	73
74	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10		E	E			E	E		E			E	74
81	10 - 20		20 - 30	30 - 50	10 - 15			E				E		E				81
82	8 - 16	16 - 24	8 - 16	16 - 24	5 - 12	10 - 15					E						E	82
83		6 - 12		8 - 16		5 - 12					E A						E A	83
91	12 - 20		20 - 30				E	O E				O E		O E				91
92		12 - 16		12 - 16							O						O	92
93		4 - 8		4 - 8														93
94		12 - 20		16 - 24							O						O	94

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

KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING

CLASSIC

Ab Seite: From page:	W Weiche Werkstoffe Soft materials				Z Zähe Werkstoffe Tough materials					
MJ / M	86	86	87	87	88	88	89	90	90	90
MF					134	134	134		134	
UNJC / UNC / UNC(J)					158	158	159		160	
UNJF / UNF / UNF(J)					180	180	181		182	
UNEF / UN / UNS										
G / Rp / Rc / W / SV			207	207	208	208	208		209	
NPT / NPTF										
PG / TR										
EG M / EG UNC / EG UNF									231	

	Vc (m/min) Guide Line						W.20	W.20DL	W.60	W.60DL	Z.20V	Z.20VS	Z.60V Z.62V	Z.60VS Z.62VS	Z.70VS	Z.73VS	
	Ø 1 - 2.8 mm		Ø 2.8 - 26 mm		Ø 26 - 60 mm												
	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated											
11	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10						O	O E					11
12	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10						O	O E	O	O E			12
13	8 - 12	10 - 20	8 - 12	16 - 24	10 - 15						O	O E					13
14	8 - 12	10 - 20	8 - 12	16 - 24	4 - 8							O E		O E	O E	O E	14
15	2 - 4	4 - 10	3 - 5	6 - 12	2 - 4	3 - 5						O		O	O E	O E	15
16		2 - 4	3 - 5	3 - 5	2 - 4	3 - 5											16
17			2 - 4														17
18																	18
21	4 - 10	10 - 15	10 - 15	20 - 30	5 - 10						O	O E	O	O E	O E	O E	21
22	3 - 6	4 - 8	3 - 6	6 - 12							O	O E	O	O E	O E	O E	22
23	3 - 6	4 - 8	3 - 6	6 - 12							O	O E	O	O E	O E	O E	23
24		3 - 5		4 - 8		3 - 5						O		O	O E	O E	24
31	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10	15 - 25											31
32	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10						O	O E	O	O E			32
41	2 - 4	4 - 8	4 - 8	4 - 8													41
42	2 - 4	3 - 5	3 - 5	3 - 5													42
51		3 - 5		6 - 12								O		O	O E	O E	51
52			4 - 8	4 - 8											O	O	52
53			2 - 4														53
61	8 - 12		8 - 12	12 - 16	4 - 8							O E		O E	O E	O E	61
62	6 - 12	6 - 12	20 - 30	30 - 40	15 - 25	25 - 35											62
63	10 - 20		16 - 24		8 - 12							O E		O E			63
64	10 - 20		16 - 24		8 - 12												64
71	10 - 15	10 - 15	10 - 15	20 - 40	5 - 10		O E	O E	O E	O E							71
72	10 - 20	20 - 30	20 - 30	20 - 40	10 - 15		O E	O E	O E	O E							72
73	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10			O E		O E							73
74	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10												74
81	10 - 20		20 - 30	30 - 50	10 - 15		E		E								81
82	8 - 16	16 - 24	8 - 16	16 - 24	5 - 12	10 - 15											82
83		6 - 12		8 - 16		5 - 12											83
91	12 - 20		20 - 30														91
92		12 - 16		12 - 16													92
93		4 - 8		4 - 8													93
94		12 - 20		16 - 24								O E			O E	O E	94

A *Optimal mit Luft*
Optimal with air

A *Geeignet mit Luft*
Suitable with air

Bedingt geeignet
Limited

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

KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING

CLASSIC

Ab Seite: From page:	H				S			
MJ / M	94	94	96	96	46	99	46	On request
MF	136	136	137	137	138	138		
UNJC / UNC / UNC(J)	161	161	162	162	48	164	48	
UNJF / UNF / UNF(J)	184	184	185	185	50	186	50	
UNEF / UN / UNS								
G / Rp / Rc / W / SV			207					
NPT / NPTF								
PG / TR								
EG M / EG UNC / EG UNF								

	Vc (m/min) Guide Line													
	Ø 1 - 2.8 mm		Ø 2.8 - 26 mm		Ø 26 - 60 mm		H.20	H.20TC	H.50	H.50TC	S.20VS	S.60VS	S.70VX	S.73VX	
	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated									
11	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10										11
12	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10										12
13	8 - 12	10 - 20	8 - 12	16 - 24	10 - 15						E	E			13
14	8 - 12	10 - 20	8 - 12	16 - 24	4 - 8										14
15	2 - 4	4 - 10	3 - 5	6 - 12	2 - 4	3 - 5	O E	O E	O E	O E	O E	O E	O E	O E	15
16		2 - 4	3 - 5	3 - 5	2 - 4	3 - 5	O	O	O	O	O	O			16
17			2 - 4												17
18															18
21	4 - 10	10 - 15	10 - 15	20 - 30	5 - 10										21
22	3 - 6	4 - 8	3 - 6	6 - 12							O E	O E	O E	O E	22
23	3 - 6	4 - 8	3 - 6	6 - 12							O E	O E	O E	O E	23
24		3 - 5		4 - 8		3 - 5		O		O	O E	O E	O E	O E	24
31	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10	15 - 25		E A		E A					31
32	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10										32
41	2 - 4	4 - 8	4 - 8	4 - 8											41
42	2 - 4	3 - 5	3 - 5	3 - 5											42
51		3 - 5		6 - 12									O E	O E	51
52			4 - 8	4 - 8							O	O	O	O	52
53			2 - 4												53
61	8 - 12		8 - 12	12 - 16	4 - 8								O E	O E	61
62	6 - 12	6 - 12	20 - 30	30 - 40	15 - 25	25 - 35	O E		O E						62
63	10 - 20		16 - 24		8 - 12										63
64	10 - 20		16 - 24		8 - 12		O E		O E						64
71	10 - 15	10 - 15	10 - 15	20 - 40	5 - 10										71
72	10 - 20	20 - 30	20 - 30	20 - 40	10 - 15										72
73	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10										73
74	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10										74
81	10 - 20		20 - 30	30 - 50	10 - 15										81
82	8 - 16	16 - 24	8 - 16	16 - 24	5 - 12	10 - 15	A	A	A	A					82
83		6 - 12		8 - 16		5 - 12		A		A					83
91	12 - 20		20 - 30												91
92		12 - 16		12 - 16				O E		O E					92
93		4 - 8		4 - 8				O E		O E					93
94		12 - 20		16 - 24											94

O *Optimal mit Schneidöl* / Optimal with cutting oil

O *Geeignet mit Schneidöl* / Suitable with cutting oil

E *Optimal mit Emulsion* / Optimal with emulsion

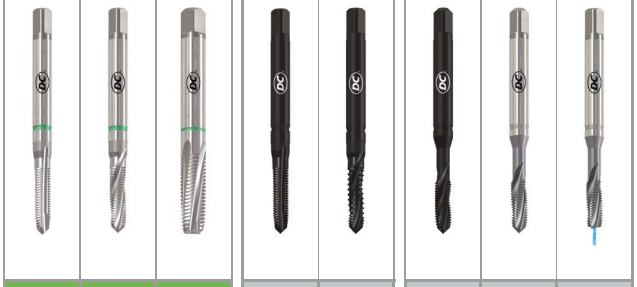
E *Geeignet mit Emulsion* / Suitable with emulsion

KLASSISCHES GEWINDESCHNEIDEN — CLASSIC THREAD CUTTING

CLASSIC

AERO

Ab Seite: From page:	SA Sonderlegierte Werkstoffe Special alloys			TL Titanleg. Titan. alloys		GG Grauguss / Alu-Guss Cast iron / Al casting		
MJ / M	47	47	46	100	47	102	102	102
MF	140	140	139	140	140			
UNJC / UNC / UNC(J)	49	49	48	165	49			
UNJF / UNF / UNF(J)	51	51	50		51			
UNEF / UN / UNS								
G / Rp / Rc / W / SV						207		
NPT / NPTF								
PG / TR								
EG M / EG UNC / EG UNF	228	228	229	232	228			



	Vc (m/min) Guide Line													
	Ø 1 - 2.8 mm		Ø 2.8 - 26 mm		Ø 26 - 60 mm		SA.20	SA.50	SA.90	TL.20VS	TL.51VS	GG.50NV	GG.50TC	GG.53TC	
	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated	Standard Standard	Beschichtet Coated									
11	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10										11
12	10 - 15	10 - 20	10 - 15	25 - 35	5 - 10										12
13	8 - 12	10 - 20	8 - 12	16 - 24	10 - 15										13
14	8 - 12	10 - 20	8 - 12	16 - 24	4 - 8										14
15	2 - 4	4 - 10	3 - 5	6 - 12	2 - 4	3 - 5	O	O							15
16		2 - 4	3 - 5	3 - 5	2 - 4	3 - 5	O	O	O						16
17			2 - 4						◁						17
18															18
21	4 - 10	10 - 15	10 - 15	20 - 30	5 - 10										21
22	3 - 6	4 - 8	3 - 6	6 - 12											22
23	3 - 6	4 - 8	3 - 6	6 - 12											23
24		3 - 5		4 - 8		3 - 5									24
31	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10	15 - 25						E A	E A	E	31
32	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10										32
41	2 - 4	4 - 8	4 - 8	4 - 8						O	O				41
42	2 - 4	3 - 5	3 - 5	3 - 5						O	O				42
51		3 - 5		6 - 12											51
52			4 - 8	4 - 8			O E	O E							52
53			2 - 4						O E						53
61	8 - 12		8 - 12	12 - 16	4 - 8										61
62	6 - 12	6 - 12	20 - 30	30 - 40	15 - 25	25 - 35							E A	E	62
63	10 - 20		16 - 24		8 - 12										63
64	10 - 20		16 - 24		8 - 12		O E	O E							64
71	10 - 15	10 - 15	10 - 15	20 - 40	5 - 10										71
72	10 - 20	20 - 30	20 - 30	20 - 40	10 - 15										72
73	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10										73
74	10 - 15	10 - 20	10 - 15	20 - 30	5 - 10								E A	E	74
81	10 - 20		20 - 30	30 - 50	10 - 15										81
82	8 - 16	16 - 24	8 - 16	16 - 24	5 - 12	10 - 15									82
83		6 - 12		8 - 16		5 - 12									83
91	12 - 20		20 - 30												91
92		12 - 16		12 - 16											92
93		4 - 8		4 - 8											93
94		12 - 20		16 - 24											94

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

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

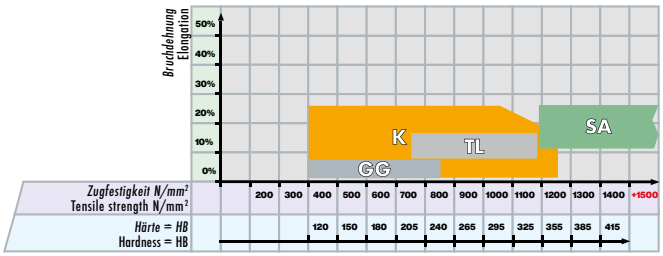
◁ **Bedingt geeignet** / **Limited**

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

KLASSISCHES UND SYNCHRON-GEWINDESCHNEIDEN
CLASSIC THREAD CUTTING AND RIGID TAPPING

CLASSIC SYNCHRO

Gewindeschneiden
Thread cutting



Ab Seite: From page:	K Spanbrecher Swarf breaker	
MJ / M	104	105
MF	142	
UNJC / UNC / UNC(J)		
UNJF / UNF / UNF(J)		
UNEF / UN / UNS		
G / Rp / Rc / W / SV		
NPT / NPTF		
PG / TR		
EG M / EG UNC / EG UNF		

	Vc (m/min) Guide Line						
	Ø 5 - 10.9 mm	Ø 11 - 18.9 mm	Ø 19 - 31.9 mm	Ø 32 - 42 mm	K.13TC	K.13VS	
	Beschichtet Coated	Beschichtet Coated	Beschichtet Coated	Beschichtet Coated			
11	30 - 40	20 - 30	20 - 30	20 - 30	E	E	11
12	30 - 40	20 - 30	20 - 30	20 - 30	E	E	12
13	30 - 40	20 - 30	20 - 30	20 - 30	E	E	13
14	20 - 30	15 - 25	15 - 25	15 - 25	E	E	14
15	15 - 20	10 - 15	8 - 12	5 - 8	E	E	15
16	8 - 12	5 - 8	5 - 8	5 - 8	E	E	16
17							17
18							18
21							21
22							22
23							23
24							24
31	30 - 40	30 - 40	30 - 40	30 - 40	E	E	31
32	30 - 40	20 - 30	20 - 30	20 - 30	E	E	32
41							41
42							42
51							51
52							52
53							53
61							61
62	30 - 40	30 - 40	30 - 40	30 - 40	E	E	62
63	30 - 40	30 - 40	30 - 40	30 - 40	E	E	63
64	30 - 40	20 - 30	20 - 30	20 - 30	E	E	64
71							71
72							72
73							73
74	30 - 40	30 - 40	30 - 40	30 - 40	E	E	74
81							81
82							82
83	30 - 40	30 - 40	30 - 40	30 - 40	E	E	83
91							91
92							92
93							93
94							94

Optimal mit Schneidöl
Optimal with cutting oil

Geeignet mit Schneidöl
Suitable with cutting oil

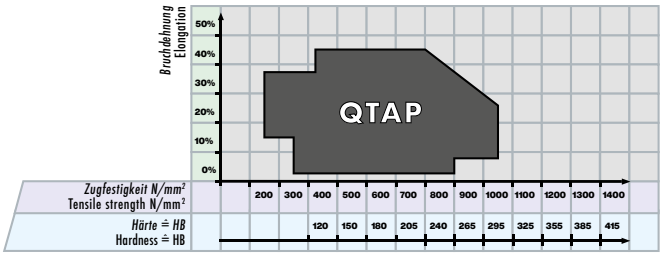
Optimal mit Emulsion
Optimal with emulsion

Geeignet mit Emulsion
Suitable with emulsion

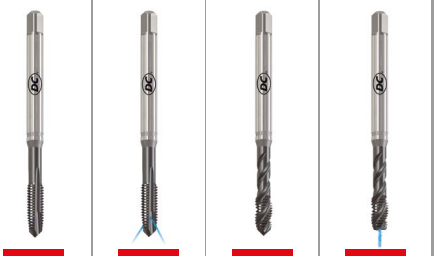
KLASSISCHES UND SYNCHRON-GEWINDESCHNEIDEN
CLASSIC THREAD CUTTING AND RIGID TAPPING

CLASSIC SYNCHRO

Gewindeschneiden klassisch und synchron
Thread cutting classic and rigid



Ab Seite: From page:	QTAP Allrounder Allrounder			
MJ / M	61	106	61	107
MF	143	143	144	144
UNJC / UNC / UNC(J)	167	167	168	168
UNJF / UNF / UNF(J)	192	192	193	193
UNEF / UN / UNS				
G / Rp / Rc / W / SV	210	210	211	211
NPT / NPTF				
PG / TR				
EG M / EG UNC / EG UNF				



	Vc (m/min) Guide Line Ø 2.8 - 20 mm	Q.20VS	Q.23VS	Q.60VS	Q.63VS	
11	20 - 40	O E	O E	O E	O E	11
12	20 - 40	O E	O E	O E	O E	12
13	16 - 24	O E	O E	O E	O E	13
14	16 - 24	O E	O E	O E	O E	14
15	6 - 12	O E	O E	O E	O E	15
16						16
17						17
18						18
21	20 - 40	O E	O E	O E	O E	21
22	6 - 12	O E	O E	O E	O E	22
23	6 - 12	O E	O E	O E	O E	23
24	4 - 8	O E	O E	O E	O E	24
31	20 - 40	O E A	O E	O E A	O E	31
32	20 - 40	O E	O E	O E	O E	32
41						41
42						42
51	6 - 12	O E	O E	O E	O E	51
52	4 - 8	O E	O E	O E	O E	52
53						53
61	12 - 16	O E	O E	O E	O E	61
62	25 - 35	O E	O E	O E	O E	62
63	20 - 40	O E	O E	O E	O E	63
64	20 - 40	O E	O E	O E	O E	64
71	20 - 40	O E	O E	O E	O E	71
72	20 - 40	O E	O E	O E	O E	72
73	20 - 40	O E	O E	O E	O E	73
74	20 - 40	O E A	O E	O E A	O E	74
81	20 - 40	O E A	O E	O E A	O E	81
82	16 - 24	O E	O E	O E	O E	82
83	8 - 16	O E A	O E	O E A	O E	83
91	20 - 40	O E	O E	O E	O E	91
92	12 - 16	O E	O E	O E	O E	92
93						93
94	12 - 16	O E	O E	O E	O E	94

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

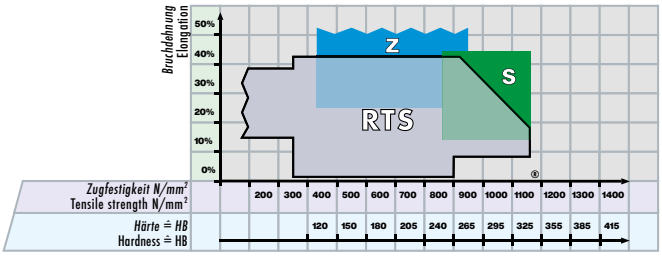
A ***Geeignet mit Luft***
Suitable with air

Bedingt geeignet
Limited

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

ANWENDUNGSTABELLE — APPLICATION CHART

Synchron-Gewindeschneiden
Rigid Tapping



DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Dehnung Elongation A (%)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
		22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
		42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
		64	Messing bleifrei	Lead free brass	< 220	< 700	> 15
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	Silber	Silver	-	-	-

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

SYNCHRON-GEWINDESCHNEIDEN — RIGID TAPPING

Ab Seite: From page:	RTS Synchro Synchro				Z Zähe Werkstoffe Tough materials		S Sonderlegierte Werkstoffe Special alloys	
MJ / M	108	108	109	109	90	90	46	On request
MF	145		145		134			
UNJC / UNC / UNC(J)	169		169		160		48	
UNJF / UNF / UNF(J)	194		194		182		50	
UNEF / UN / UNS								
G / Rp / Rc / W / SV			212		209			
NPT / NPTF								
PG / TR								
EG M / EG UNC / EG UNF					231			

	Vc (m/min) Guide Line Ø 2 - 2.8 mm Beschichtet Coated	Ø 2.8 - 20 mm Beschichtet Coated	RTS.20VS	RTS.23VS	RTS.60VS RTS.62VS	RTS.65VS	Z.70VS	Z.73VS	S.70VX	S.73VX	
11	12 - 20	20 - 40	O E	O E	O E	O E	O E	O E			11
12	12 - 20	20 - 40	O E	O E	O E	O E	O E	O E			12
13	12 - 20	16 - 24	O E	O E	O E	O E	O E	O E			13
14	12 - 20	16 - 24	O E	O E	O E	O E	O E	O E			14
15	5 - 10	6 - 12	O E	O E	O E	O E	O E	O E	O E	O E	15
16											16
17											17
18											18
21	12 - 20	20 - 40	O E	O E	O E	O E	O E	O E			21
22	4 - 10	6 - 12	◖ ◗	◖ ◗	◖ ◗	◖ ◗	O E	O E	O E	O E	22
23	4 - 10	6 - 12	◖ ◗	◖ ◗	◖ ◗	◖ ◗	O E	O E	O E	O E	23
24	4 - 8	4 - 8	◖ ◗	◖ ◗	◖ ◗	◖ ◗	O E	O E	O E	O E	24
31	12 - 20	20 - 40	O E A	O E	O E A	O E					31
32	12 - 20	20 - 40	O E	O E	O E	O E	O E	O E			32
41											41
42											42
51	4 - 10	6 - 12	O ◗	O ◗	O ◗	O ◗	O E	O E	O E	O E	51
52		4 - 8					O	O	O	O	52
53											53
61	10 - 16	10 - 20	O E	O E	O E	O E	O E	O E			61
62											62
63	12 - 20	20 - 40	O E	O E	O E	O E					63
64	12 - 20	20 - 40	O E	O E	O E	O E					64
71	12 - 20	30 - 50	O	O	O	O					71
72	12 - 20	30 - 50	O E	O E	O E	O E					72
73	12 - 20	20 - 40	O E	O E	O E	O E					73
74	12 - 20	20 - 40	O E A	O E	O E A	O E					74
81	12 - 20	30 - 50	E A	E	E A	E					81
82	12 - 20	16 - 24	E	E	E	E					82
83	4 - 10	8 - 16	E A	E	E A	E					83
91	12 - 20	20 - 40	O E	O E	O E	O E					91
92	6 - 12	12 - 16	O E	O E	O E	O E					92
93											93
94	6 - 12	12 - 16	O E	O E	O E	O E					94

A **Optimal mit Luft** Optimal with air

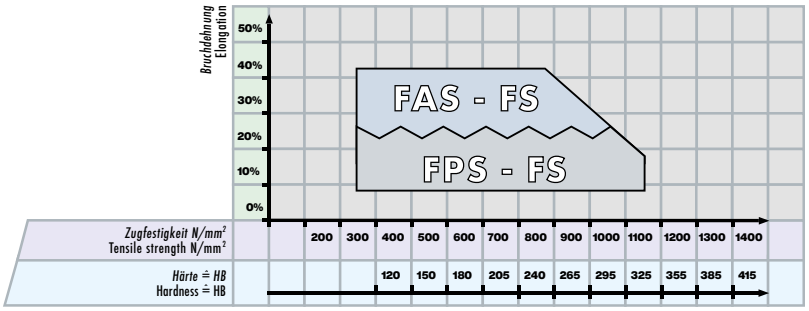
A **Geeignet mit Luft** Suitable with air

Bedingt geeignet Limited

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

ANWENDUNGSTABELLE — APPLICATION CHART

Gewindeformen
Thread forming



DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Dehnung Elongation A (%)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
		22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
		42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
		64	Messing bleifrei	Lead free brass	< 220	< 700	> 15
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	Silber	Silver	-	-	-

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

Ab Seite: From page:	FS		FPS					FAS		
M	254	255	256	256	256	256	258	259	259	260
MF						262			262	
UNC	263					263			263	
UNF	264					264			264	
G						265			265	

	Vc (m/min) Guide Line Ø 1 - 2.8 mm	Vc (m/min) Guide Line Ø 2.8 - 20 mm	FS.80VS	FS.80DL	FPS.80DL	FPS.81DL	FPS.80VS	FPS.81VS	FPS.84VS	FAS.80VS	FAS.81VS	FAS.84VS	
11	12 - 20	20 - 40	A E				A E	A E	A E				11
12	12 - 20	20 - 40	A E				A E	A E	A E				12
13	12 - 20	20 - 30	A E				A E	A E	A E				13
14	12 - 20	20 - 30	A E				A E	A E	A E				14
15	6 - 12	10 - 15	A					A	A				15
16													16
17													17
18													18
21	12 - 20	10 - 20	A E	A E						A E	A E	A E	21
22	6 - 12	10 - 15	A	A E						A E	A E	A E	22
23	6 - 12	6 - 12	A	A E						A	A E	A E	23
24	6 - 12	6 - 12		A						A	A E	A E	24
31													31
32													32
41	12 - 20	10 - 20		B							B	B	41
42													42
51	6 - 12	10 - 15		A							A E	A E	51
52													52
53													53
61	12 - 20	10 - 20		A E						A	A E	A E	61
62													62
63	12 - 20	20 - 30		A E	A E	A E							63
64	12 - 20	20 - 30		A E	A E	A E							64
71	12 - 20	20 - 40		A E	A E	A E							71
72	12 - 20	20 - 40		A E	A E	A E							72
73	12 - 20	20 - 40		A E	A E	A E							73
74													74
81													81
82													82
83													83
91	12 - 20	20 - 40		A E	A	A E							91
92	12 - 20	20 - 40		A E	A E	A E							92
93	12 - 20	20 - 40		B	B	B							93
94	12 - 20	20 - 40		A E	A E	A E							94

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

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

Bedingt geeignet
Limited

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

GEWINDEBOHRER NANO
THREAD TAPS NANO

DC -Anwendungsgruppen — DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Dehnung Elongation A (%)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
		22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
		42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
		64	Messing bleifrei	Lead free brass	< 220	< 700	> 15
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	Silber	Silver	-	-	-

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

GEWINDEBOHRER NANO — THREAD TAPS NANO

CLASSIC SYNCHRO

Ab Seite: From page:	TAN Normale Werkstoffe Normal materials				TAZ Zähe Werkstoffe Tough materials				CMS Spröde Werkstoffe Brittle materials	
	TAN40	TAN40VS	TAN50	TAN50VS	TAZ40	TAZ40VS	TAZ50	TAZ50VS	CMS50	CMS50VS
M	338	338	338	338	339	339	339	339	340	340
MF	341	341	341	341	342	342	342	342	343	343
UNC	344	344	344	344	345	345	345	345	346	346
UNF	347	347	347	347	348	348	348	348	349	349
S	350	350	350	350	351	351	351	351	352	352
SF	353	353	353	353	354	354	354	354	355	355
SL	356	356	356	356	357	357	357	357	358	358

	Vc (m/min) Guide Line Ø 0.3 - 1.4 mm Standard Standard	Ø 0.3 - 1.4 mm Beschichtet Coated	Ø 1.4 - 2.8 mm Standard Standard	Ø 1.4 - 2.8 mm Beschichtet Coated	
11		4 - 10		12 - 20	11
12		4 - 10		12 - 20	12
13		4 - 10		12 - 20	13
14		4 - 10		12 - 20	14
15					15
16					16
17					17
18					18
21		4 - 10		12 - 20	21
22		4 - 10		12 - 20	22
23		3 - 6		6 - 12	23
24		3 - 6		6 - 12	24
31		4 - 10		12 - 20	31
32		4 - 10		12 - 20	32
41	2 - 4	2 - 4	4 - 8	4 - 8	41
42	2 - 4	2 - 4	4 - 8	4 - 8	42
51					51
52					52
53					53
61		4 - 10		12 - 20	61
62	4 - 10	4 - 10	12 - 20	12 - 20	62
63	4 - 10	4 - 10	12 - 20	12 - 20	63
64		4 - 10		12 - 20	64
71		4 - 10		12 - 20	71
72		4 - 10		12 - 20	72
73		4 - 10		12 - 20	73
74		4 - 10		12 - 20	74
81		4 - 10		12 - 20	81
82					82
83		4 - 10		12 - 20	83
91	4 - 10		12 - 20		91
92		4 - 10		12 - 20	92
93		4 - 10		12 - 20	93
94		4 - 10		12 - 20	94

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

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

Bedingt geeignet
Limited

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

GEWINDEFORMER NANO
THREAD FORMERS NANO

DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		*Werkstoffbezeichnung*	Material designation	*Härte* Hardness (HB)	*Festigkeit* Tensile strength Rm (N/mm²)	*Dehnung* Elongation A (%)
10	*Stahl* Steels	11	*Automatenstahl*	Free-cutting steels	< 200	< 700	< 10
		12	*Baustahl, Einsatzstahl*	Structural, cementation steels	< 200	< 700	< 30
		13	*Kohlenstoffstahl*	Carbon steels	< 300	< 1000	< 20
		14	*Stahl legiert < 850 N/mm²*	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	*Stahl legiert / vergütet > 850 - < 1150 N/mm²*	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	*Hochfester Stahl ≤ 44 HRC*	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	*Stahl vergütet > 44 - ≤ 54 HRC*	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	*Stahl gehärtet > 54 - ≤ 63 HRC*	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	*Rostfreier Stahl* Stainless steels	21	*Rostfreier Stahl, geschwefelt*	Free machining stainless steels	< 250	< 850	< 25
		22	*Austenitisch*	Austenitic stainless steels	< 250	< 850	> 20
		23	*Ferritisch, martensitisch < 850 N/mm²*	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	*Ferritisch, martensitisch > 850 - < 1150 N/mm²*	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	*Guss* Cast iron	31	*Grauguss*	Cast iron	< 250	< 850	< 10
		32	*Kugelgraphitguss, Temperguss*	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	*Titan* Titanium	41	*Reintitan*	Pure titanium	< 250	< 850	> 20
		42	*Titanlegierung*	Titanium alloys	> 250	> 850	< 20
50	*Nickel* Nickel	51	*Nickellegierung 1 ≤ 850 N/mm²*	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	*Nickellegierung 2 > 850 - ≤ 1150 N/mm²*	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	*Nickellegierung 3 > 1150 - ≤ 1600 N/mm²*	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	*Kupfer* Copper	61	*Reinkupfer (Elektrolytkupfer)*	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	*Messing, Bronze, Rotguss (kurzspanend)*	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	*Messing (langspanend)*	Long chip brass	< 200	< 700	> 12
		64	*Messing bleifrei*	Lead free brass	< 220	< 700	> 15
70	*Aluminium Magnesium* Aluminium Magnesium	71	*Al unlegiert*	Al unalloyed	< 100	< 350	> 15
		72	*Al legiert Si < 1.5 %*	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	*Al legiert Si > 1.5 % - < 10 %*	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	*Al legiert Si > 10 %, Mg-Legierungen*	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
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	-	-	-
		94	*Silber*	Silver	-	-	-

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

GEWINDEFORMER NANO — THREAD FORMERS NANO

CLASSIC SYNCHRO

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M	363	363	370	370
MF	364	364		
UNC	365	365	371	371
UNF	366	366	372	372
S	367	367	373	373
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	Vc (m/min) Guide Line Ø 0.3 - 1.4 mm Beschichtet Coated	Ø 1.4 - 2.8 mm Beschichtet Coated	FA80VS	FA83VS	CFA80VS	CFA83VS	
11	4 - 10	12 - 20	O E	O E			11
12	4 - 10	12 - 20	O E	O E			12
13	4 - 10	12 - 20	O E	O E			13
14	4 - 10	12 - 20	O E	O E			14
15	3 - 6	6 - 12	O	O			15
16							16
17							17
18							18
21	4 - 10	12 - 20	O E	O E			21
22	3 - 6	6 - 12	O E	O E			22
23	3 - 6	6 - 12	O E	O E			23
24	3 - 6	6 - 12	O	O			24
31							31
32							32
41							41
42							42
51	3 - 6	6 - 12	O	O			51
52							52
53							53
61	4 - 10	12 - 20	O E	O E			61
62	4 - 10	12 - 20			O E	O E	62
63	4 - 10	12 - 20	O E	O E	O E	O E	63
64	4 - 10	12 - 20	O E	O E			64
71	4 - 10	12 - 20	O E	O E			71
72	4 - 10	12 - 20	O E	O E			72
73	4 - 10	12 - 20	O E	O E			73
74							74
81							81
82							82
83							83
91	4 - 10	12 - 20	O E	O E	O E	O E	91
92	4 - 10	12 - 20	O E	O E	O E	O E	92
93	4 - 10	12 - 20					93
94	4 - 10	12 - 20	O E	O E	O E	O E	94

A *Optimal mit Luft* Optimal with air

A *Geeignet mit Luft* Suitable with air

Bedingt geeignet Limited

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

KONSTRUKTIONSFORMEN FÜR GEWINDEBOHRER
CONSTRUCTIONAL DESIGN OF THREADING TAPS

		Ausführung nach ISO / DIN Allgemeine Baumasse	**Design according to ISO / DIN General dimensions**
ISO 529 DIN 5157 (G)	N1110-. / N1210-. N210-. (G)	*Handgewindebohrer mit abgestuftem Flankendurchmesser*	Hand taps with stepped pitch diameter
ISO 529 DIN 5157 (G)	N1110-3 / N1210-3 N1120-4 / N1220-4 N1160-3 / N1260-3 N210-3 / N220-4 (G)	*Kurze Maschinen-Gewindebohrer*	Short machine taps
DIN 352	NP110-S NP210-S	*Handgewindebohrer mit abgestuftem Flankendurchmesser, Vorschneider -1 mit Führungszapfen*	Hand taps with stepped pitch diameter, taper tap -1 with guiding pilot
DIN 371	N3..; W3..; Z3..; H3..; S3..; SA3..; TL3..; GG3..; K3..; Q3..; RTS3..;	*Maschinengewindebohrer mit verstärktem DIN-Schaft*	Machine taps with reinforced DIN shank
DIN 376 / DIN 374 / DIN 5156 (G)	N4..; W4..; Z4..; H4..; S4..; SA4..; TL4..; GG4..; K4..; Q4..; RTS4..;	*Maschinengewindebohrer mit durchfallendem DIN-Schaft*	Machine taps with reduced DIN shank

		Ausführung nach DC-Werksnorm Allgemeine Baumasse	**Design according to DC standards General dimensions**
DC	K613	*Extra-langer Maschinengewindebohrer mit langen Nuten und durchfallendem DIN-Schaft*	Extra-long machine taps with long flutes and reduced DIN shank
DC / DIN 371	N5..; GG5..; RTS5..;	*Extra-langer Maschinengewindebohrer mit verstärktem DIN-Schaft Totallänge gemäss DC-Werksnorm, Schaftmasse gemäss DIN 371*	Extra-long machine taps with reinforced DIN shank Overall length as per norm DC, shank dimensions as per DIN 371
DC / DIN 376	N6..; GG6..; RTS6..; K6..;	*Extra-langer Maschinengewindebohrer mit durchfallendem DIN-Schaft Totallänge gemäss DC-Werksnorm, Schaftmasse gemäss DIN 376*	Extra-long machine taps with reduced DIN shank Overall length as per norm DC, shank dimensions as per DIN 376
DC	N470V-	*Kronen-Gewindebohrer*	Crown taps
DC	N5951 / N5952	*Kombi-Gewindebohrer*	Combination drill/tap

KONSTRUKTIONSFORMEN FÜR GEWINDEFORMER
CONSTRUCTIONAL DESIGN OF THREAD FORMING TAPS

		Ausführung nach DIN Allgemeine Baumasse	**Design according to DIN General dimensions**
~ DIN 2174 (M - MF) ~ DIN 2184-1 (UNC - UNF)	FS3..; FAS3..; FPS3..;	*Maschinengewindeformer mit verstärktem DIN-Schaft*	Machine thread formers with reinforced DIN shank
~ DIN 2174 (M - MF) ~ DIN 2184-1 (UNC - UNF) ~ DIN 2189 (G)	FAS4..; FPS4..;	*Maschinengewindeformer mit durchfallendem DIN-Schaft*	Machine thread formers with reduced DIN shank

		Ausführung nach DC-Werksnorm Allgemeine Baumasse	**Design according to DC standards General dimensions**
DC / ~ DIN 2174	FAS5..; FPS5..;	*Extra-langer Maschinengewindeformer mit verstärktem DIN-Schaft Totallänge gemäss DC-Werksnorm, Schaftmasse ähnlich DIN 2174*	Extra-long machine thread formers with reinforced DIN shank Overall length as per norm DC, shank dimensions similar to DIN 2174
DC / ~ DIN 2174	FAS6..; FPS6..;	*Extra-langer Maschinengewindeformer mit durchfallendem DIN-Schaft Totallänge gemäss DC-Werksnorm, Schaftmasse ähnlich DIN 2174*	Extra-long machine thread formers with reduced DIN shank Overall length as per norm DC, shank dimensions similar to DIN 2174

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													G (BSP) Rp	Ø mm
		UNC	UNF	UNEF	4	6	8	12	16	20	28	32	W(BSW)	BSF		
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

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

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

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 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

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

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

TECHNISCHER FRAGEBOGEN

Gewindebohrer und Gewindeformer

Angebotsanfrage ☐ Versuchsresultat ☐ Beanstandung ☐

Vertretung: _____ Kontaktperson: _____

Kunde: _____ E-Mail: _____

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

1. Werkzeug-Typ: _____ Abmessung: _____

Besonderheit: _____ Toleranzklasse: _____

2. Werkstoffgruppe: _____

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

Norm: _____ Bruchdehnung: _____ %

3. Gewinde: ☐ Sackloch ☐ Durchgangsloch Gewindelänge: _____ mm

Kernloch-Ø: _____ Tiefe: _____ mm

Aufbohrungs-Ø: _____ Tiefe: _____ mm

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

Vorschub (f): _____ %

5. Maschine: _____ ☐ Innenkühlung

Arbeitsrichtung: ☐ horizontal ☐ vertikal

Synchro-Gewindeschneiden: ☐ Soft-Rigidfutter **Gewindeschneidspindel:** ☐ Längenausgleich

☐ Spannzange ☐ Ausklinkbar

☐ Weldon ☐ Rutschkupplung

☐ Schrumpffutter ☐ Automat. Umschaltung

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

Produkt: _____

7. Grund des Werkzeugwechsels:

☐ Werkzeugverschleiss ☐ Werkzeugbruch

☐ Gewinde nicht korrekt (kontrolliert mit Lehre) ☐ Zahnausbrüche im Anschnittbereich

☐ Maschinenfehler ☐ Zahnausbrüche im Führungsgewinde

8. Standzeitvergleich:

Vergleichswerkzeug: _____

Resultat und Befund: _____

Bemerkungen: _____

_____

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

TECHNICAL QUESTIONNAIRE

Thread cutting and thread forming

Enquiry ☐ Test result ☐ Complaint ☐

Agency: _____ Contact: _____

Customer: _____ E-mail: _____

Phone or fax: _____ Date: _____

1. Tool type: _____ Thread size: _____

Particularity: _____ Class of tolerance: _____

2. Material group: _____

Material N°: _____ Hardness: _____ N/mm^2 / HB / HRC

Norm: _____ Elongation: _____ %

3. Thread: ☐blind hole ☐through hole Threaded length: _____ mm

Core hole Ø: _____ Depth: _____ mm

Counter-bore Ø: _____ Depth: _____ mm

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

Feed (f): _____ %

5. Machine: _____ ☐internal coolant

Working position: ☐horizontal ☐vertical

Rigid Tapping: ☐"Soft Rigid Tapping" **Tapping spindle:** ☐axial compensation

☐collet ☐de-clutching

☐Weldon ☐reversible

☐hot / cold shrunk ☐sliding clutch

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

Product: _____

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

☐thread not correct (checked with thread plug gauge) ☐tooth breakage in the chamfer lead

☐machine error ☐tooth breakage in the guiding thread

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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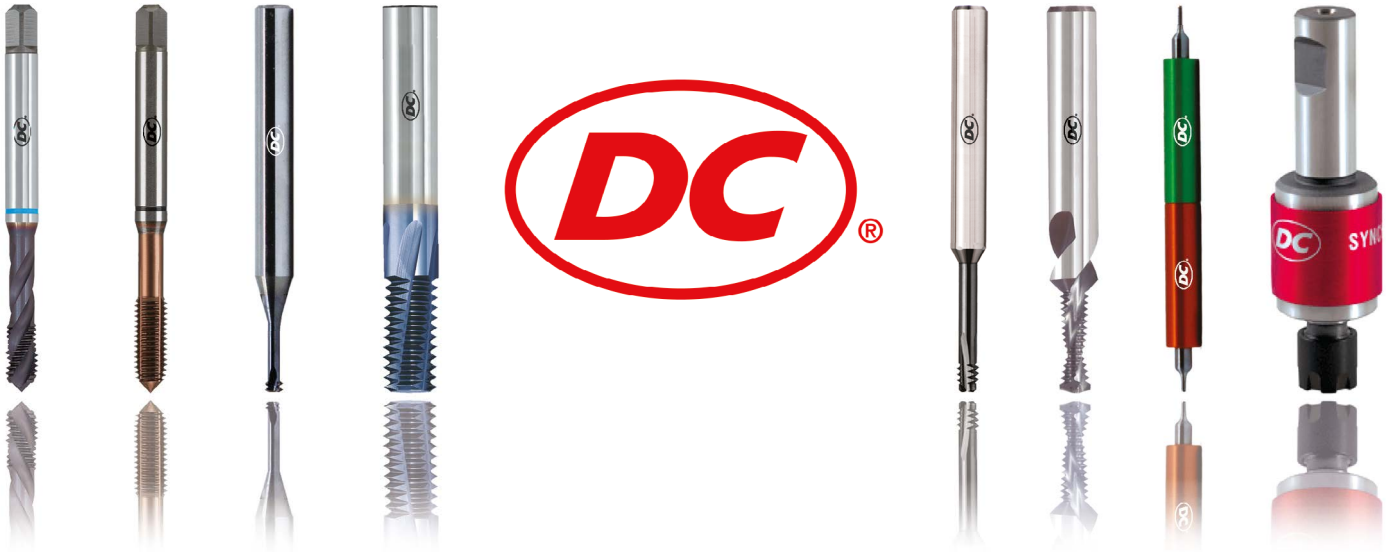

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Mögliche Abänderungen von blanken Standard-Gewindebohrern

Preis und Lieferfrist auf Anfrage

Abändern des Spanwinkels (ab Ø 5 mm)
Schneidkanten-Konditionierung (Ø ≤ 52 mm)
Verlängern des Anschnittes (ab Ø 2.5 mm)
Kürzen des Anschnittes (ab Ø 2.5 mm)
Schälanschnitt anschleifen (ab Ø 5 mm)
Abändern von l3, d2, a oder d4
Verlängern der Nuten (Ø ≥ 5 mm - ≤ 48 mm)
Abschleifen der Zentrierspitze (Ø ≥ 1 mm - ≤ 12 mm)
Aussetzen der Zähne (ab Steigung 0.5 mm)
Verjüngen des Führungsgewindes (ab Ø 3 mm)
Weldonfläche anschleifen (Ø ≥ 6 mm - ≤ 16 mm)
Kühlkanal, mit stirnseitigem Schmiermittelaustritt (Ø ≥ 3 mm - ≤ 25.4 mm)
Kühlkanal, mit seitlichem Schmiermittelaustritt (Ø ≥ 3 mm - ≤ 25.4 mm)
NV-Plasmanitrierung + "V"-Oberflächenbehandlung
DC-"V"-Oberflächenbehandlung
Beschichtungen: TiN, TiCN, VS, CrN, HL, usw.
Zusätzliche Markierung
Kürzen des Spiralbohrerteils (N5951-SP; N5952-SP)

Wir stellen natürlich auch kundenspezifische Gewindewerkzeuge nach Ihrer Zeichnung her. Preis und Lieferfrist auf Anfrage.

Possible modifications of non-coated and non-surface treated standard taps

Price and delivery time on request

Modification of cutting angle (from Ø 5 mm)
Conditioning of cutting edges (Ø ≤ 52 mm)
Lengthening of chamfer (from Ø 2.5 mm)
Shortening of chamfer (from Ø 2.5 mm)
Grinding of peeling cut (from Ø 5 mm)
Modification of l3, d2, a or d4
Lengthening of flutes (Ø ≥ 5 mm - ≤ 48 mm)
Removal of center point (Ø ≥ 1 mm - ≤ 12 mm)
Interrupted thread (from pitch 0.5 mm)
Truncated thread (from Ø 3 mm)
Grinding the Weldon Surface (Ø ≥ 6 mm - ≤ 16 mm)
Internal coolant, with frontal outflow (Ø ≥ 3 mm - ≤ 25.4 mm)
Internal coolant, with radial outflow (Ø ≥ 3 mm - ≤ 25.4 mm)
NV-Plasma nitriding + "V" surface treatment
DC "V" surface treatment
Coatings: TiN, TiCN, VS, CrN, HL, etc.
Additional marking
Shortening of drill section (N5951-SP; N5952-SP)

Of course we also produce customised threading tools as per your drawings. Price and delivery time on request.

LIEFER- UND ZAHLUNGSBEDINGUNGEN

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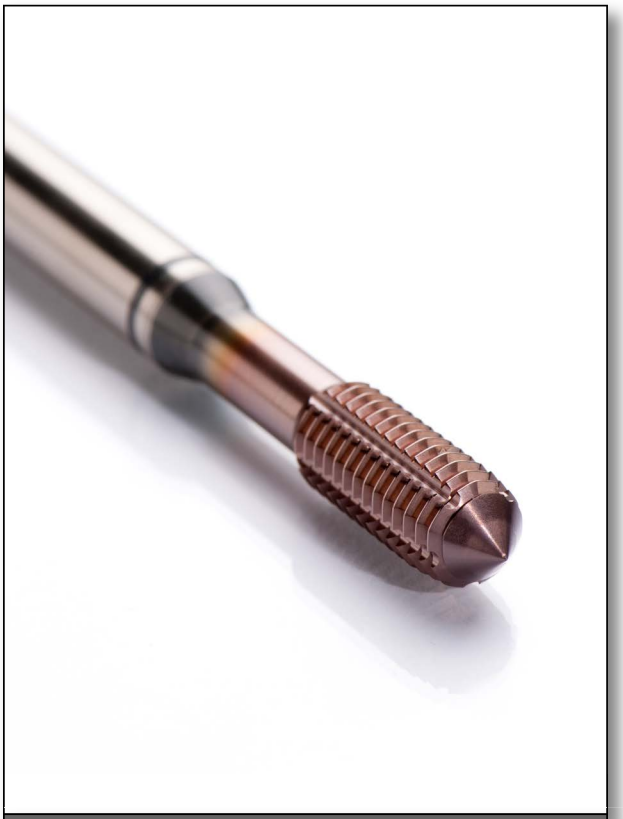
Lieferfristen	*Die Lieferfristen werden jeweils sorgfältig ermittelt, sind jedoch stets ohne Gewähr. Bei Überschreitung der bestätigten Lieferfrist lehnen wir Verzugsstrafen oder sonstige Schadenersatzforderungen, sowie Rücktritt von Bestellungen, grundsätzlich ab.*
Spezialanfertigungen	*Bei allen Lieferungen 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	*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

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO
Swiss Accreditation Service SAS

Based on the Accreditation and Designation Ordinance dated 17 June 1996 and on the advice of the Federal Accreditation Commission, the Swiss Accreditation Service (SAS) grants to

DC NANO TOOLS SA
Métrologie
Grand-rue 19
2735 Malleray

Period of accreditation:
06.01.2021 until 05.01.2026
(1st accreditation: 06.01.2016)

the accreditation as

Calibration laboratory for Length

International standard: ISO/IEC 17025:2017
Swiss standard: SN EN ISO/IEC 17025:2018

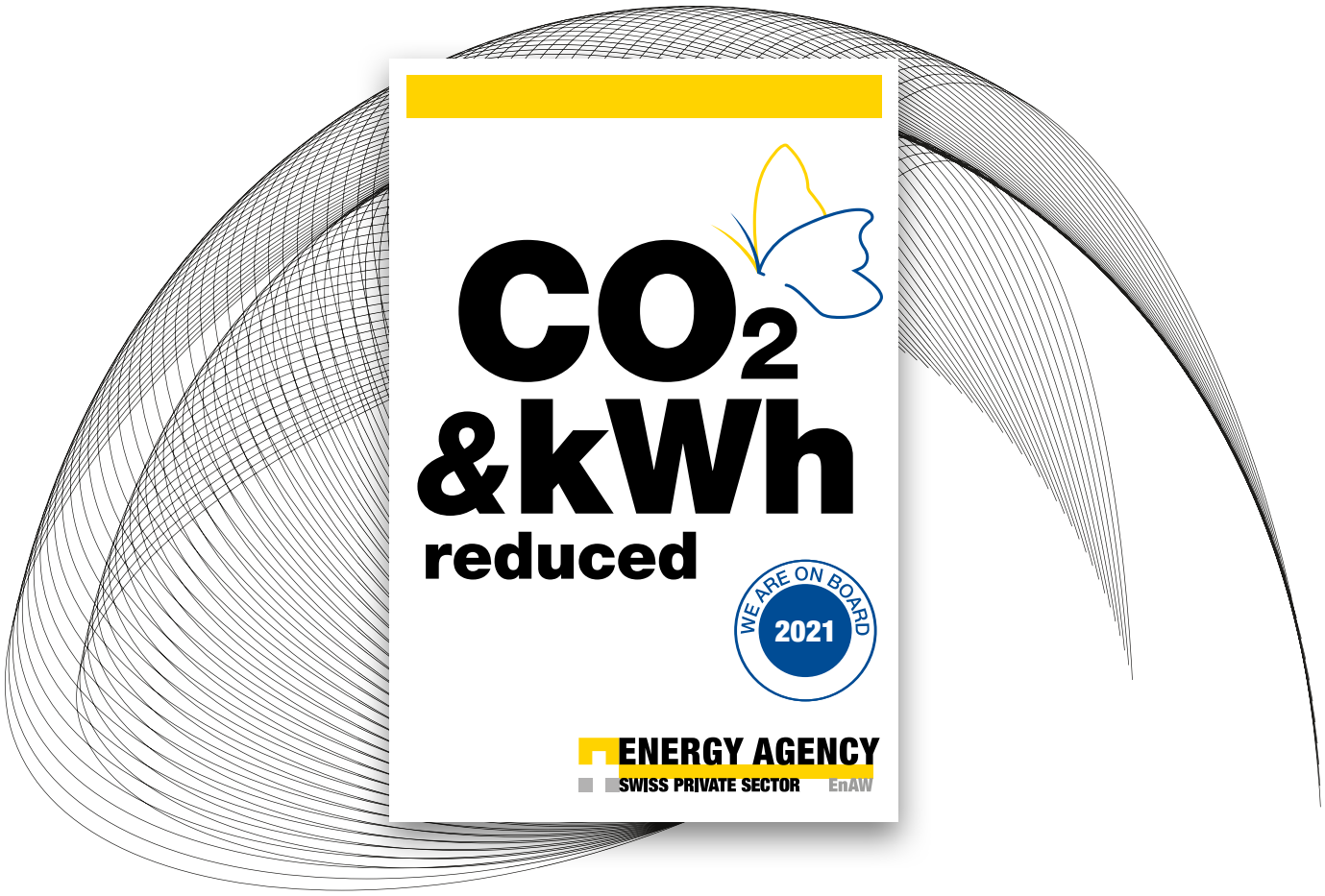
3003 Berne, 17.11.2020
Swiss Accreditation Service SAS

Head of SAS
Konrad Flück

SAS is a signatory of the multilateral agreements of the European co-operation for Accreditation (EA) for the fields of testing, calibration, inspection and certification of management systems, certification of personnel and certification of products, processes and services, of the International Accreditation Forum (IAF) for the fields of certification of management systems and certification of products, processes and services and of the International Laboratory Accreditation Cooperation (ILAC) for the fields of testing and calibration.

Certificate of the Swiss Private Sector Energy Agency

Voluntary Climate Protection and Energy Efficiency



DC Swiss SA

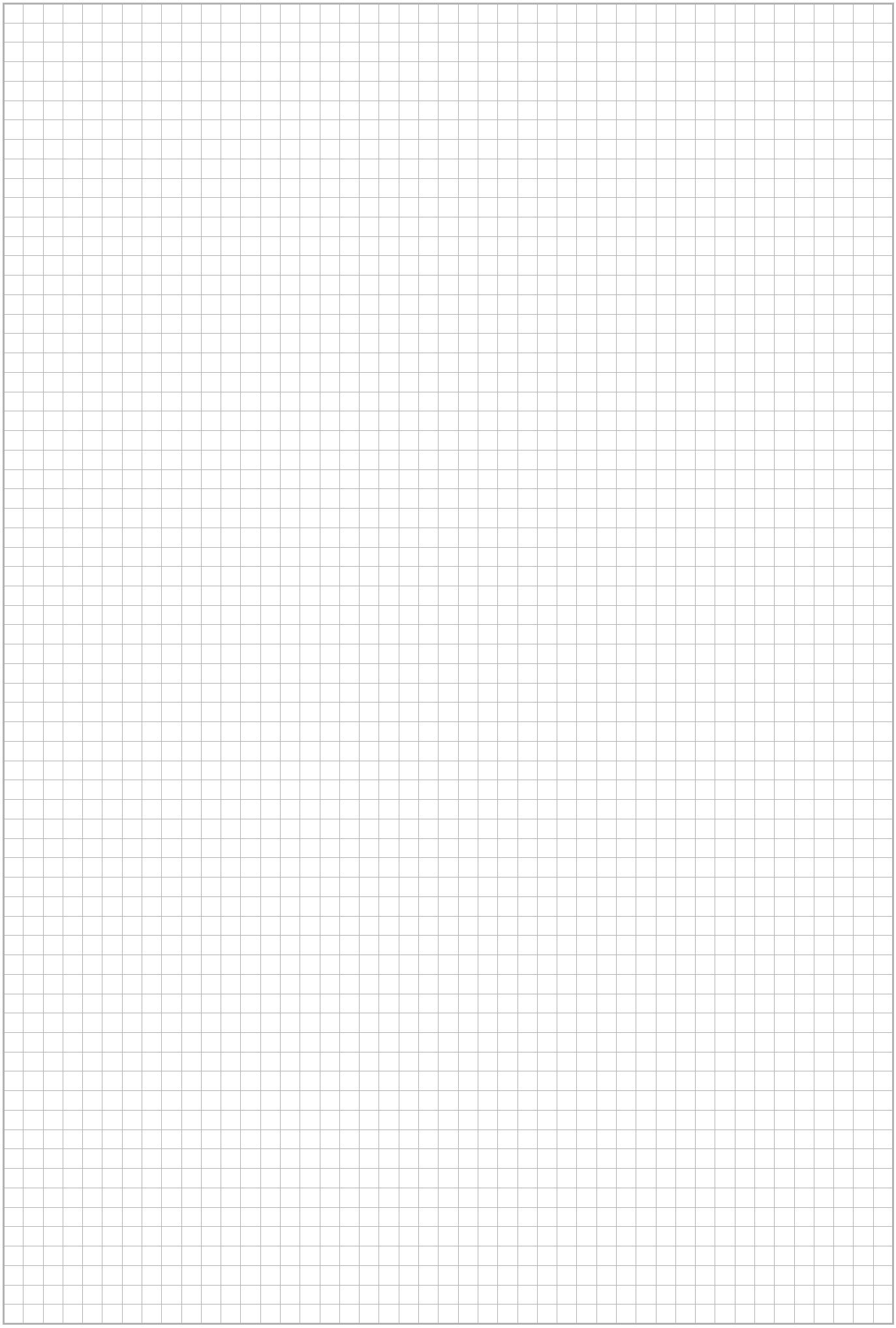
DC Swiss SA is convinced of the need to stand up for sustainable climate protection. By voluntarily declaring its adherence to the Swiss Private Sector Energy Agency programme, **DC Swiss SA** commits to actively reducing CO_2 emissions and optimizing energy efficiency. The Swiss Federal Government, cantons and private sector partners honor the target agreement.

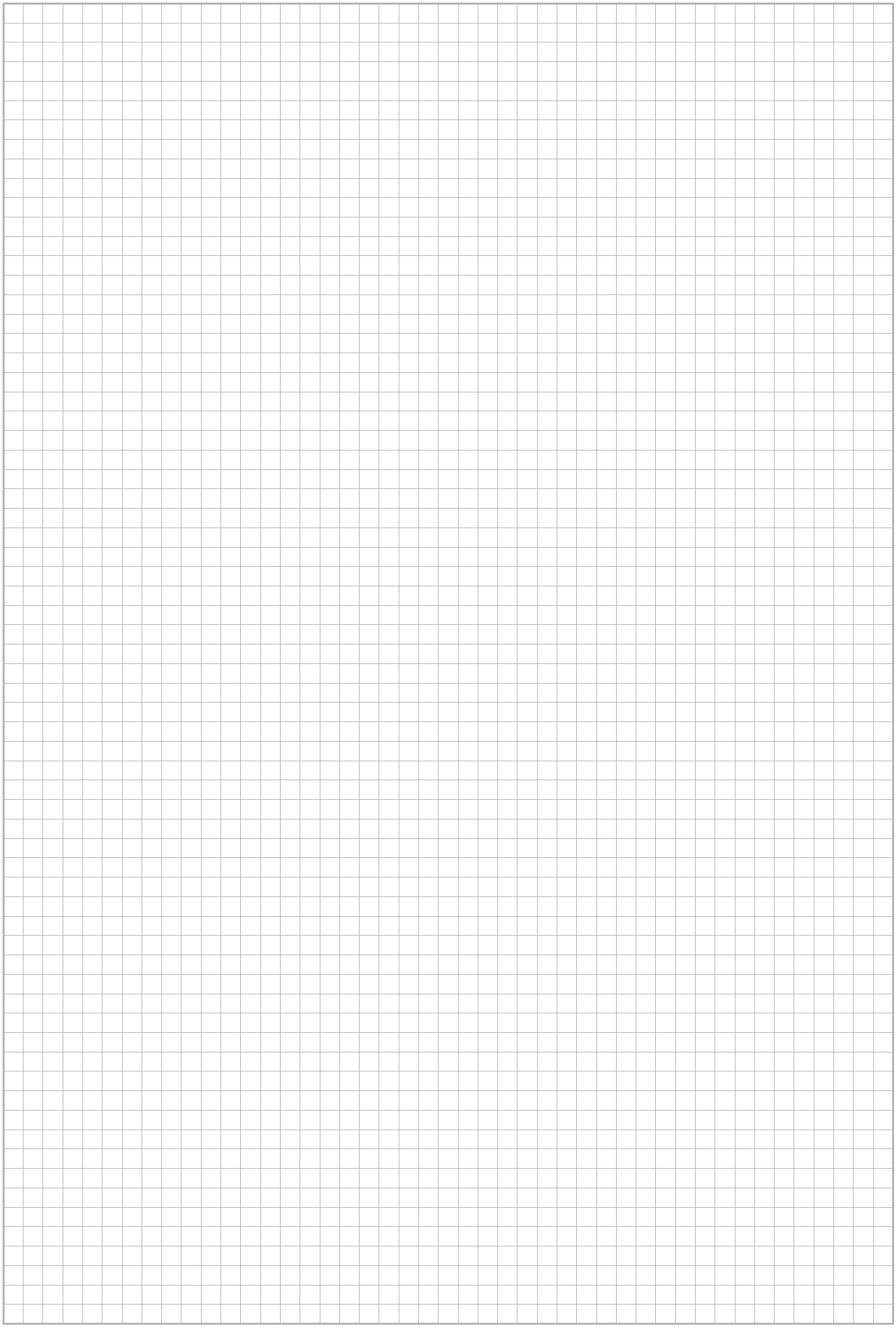
Dr. Jacqueline Jakob
Swiss Private Sector Energy Agency

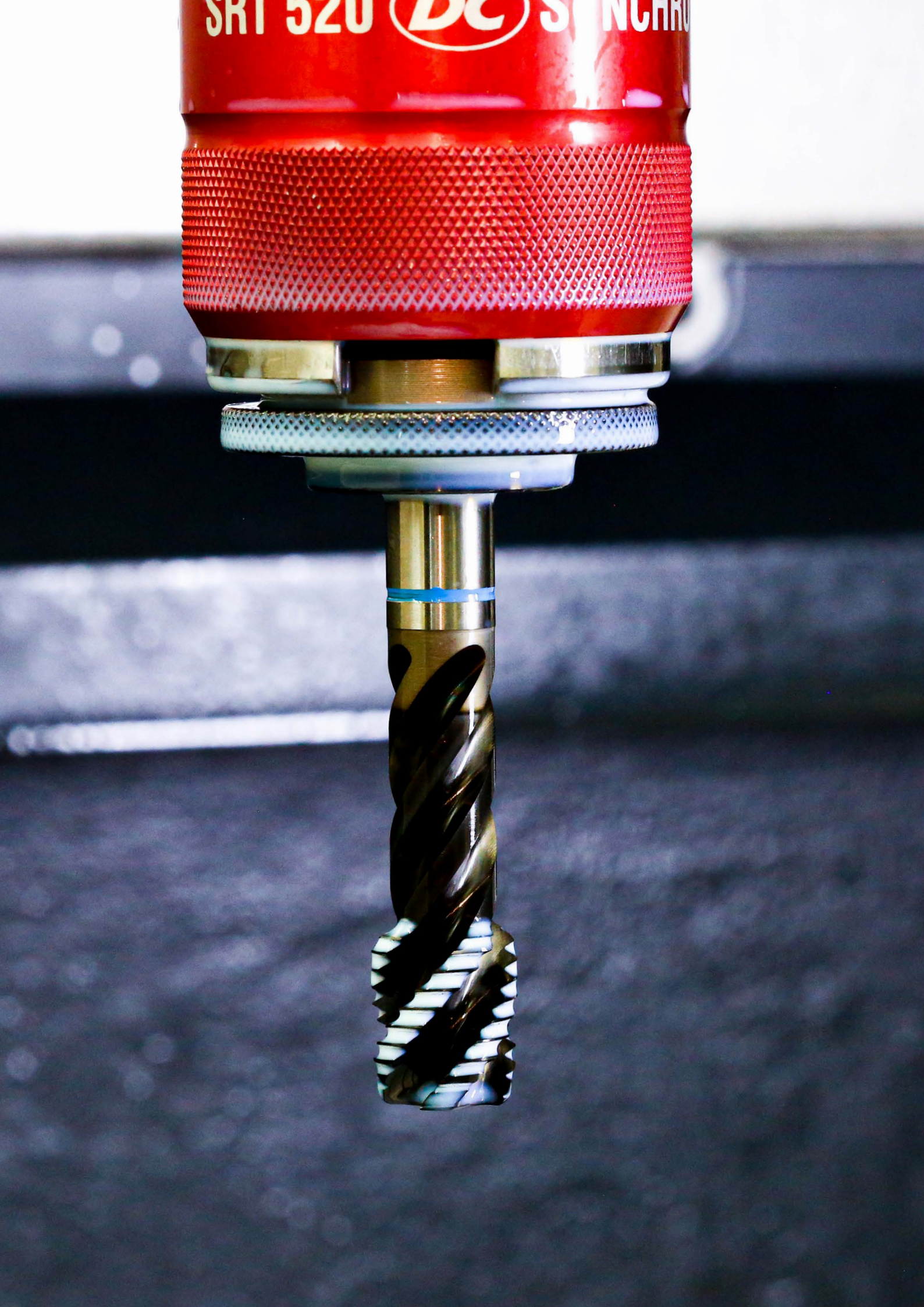
1st January 2021

Martin Kernen
Swiss Private Sector Energy Agency

ENERGY AGENCY
SWISS PRIVATE SECTOR EnAW



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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.

Eventuelle Änderungen oder Anpassungen der technischen Daten sowie Druckfehler berechtigen zu keinerlei Entschädigung.

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Mit dem Erscheinen dieses Kataloges werden alle früheren Ausgaben ungültig (Ausnahme: Katalog TM.1)!

The publication of this catalogue renders all previous editions obsolete (exception: catalogue TM.1)!

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