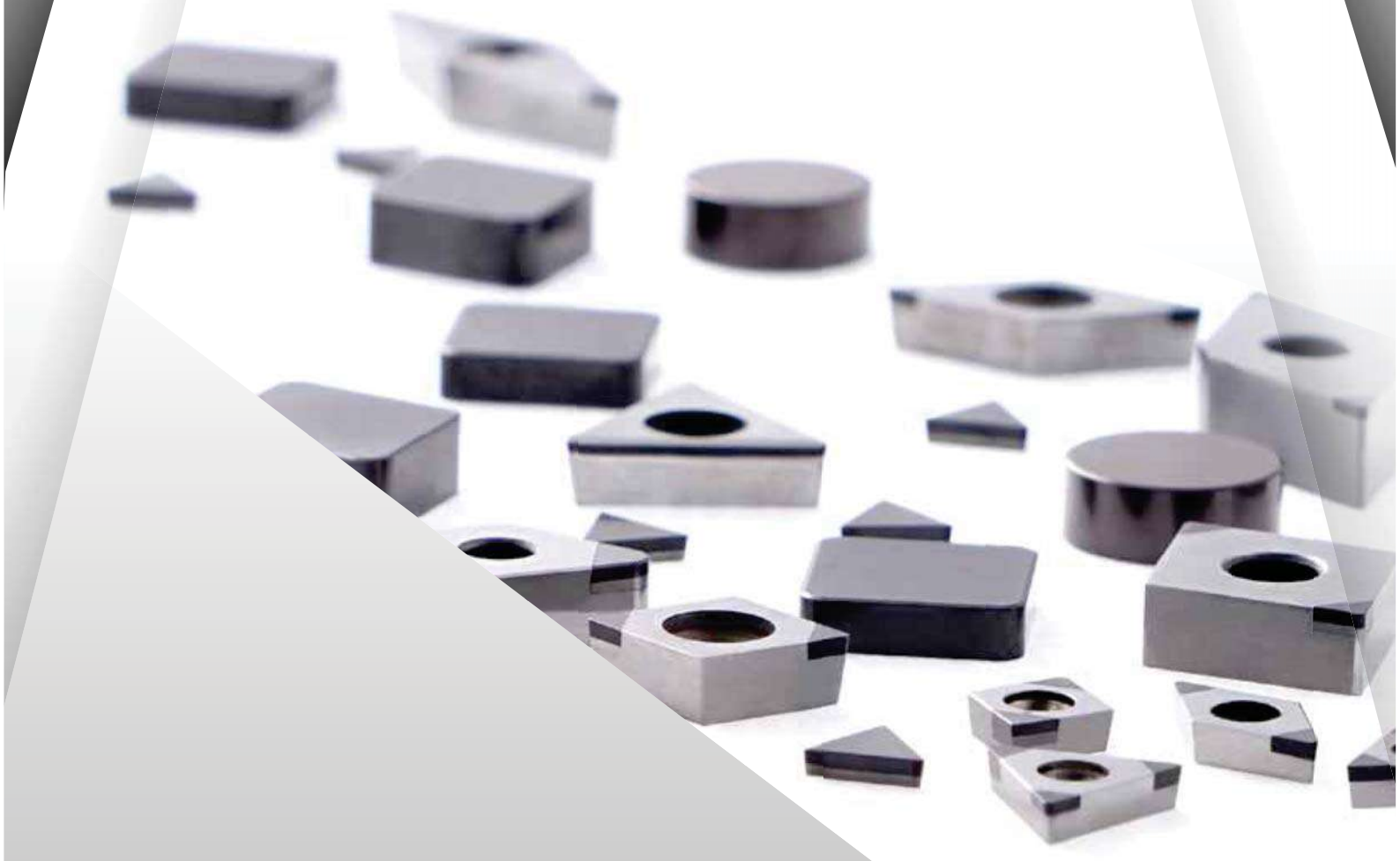
PCD - PCBN

GÜHRING



ISO INDEXABLE INSERTS

PCD AND PCBN ISO INDEXABLE INSERTS

Tools with replaceable ISO elements made from PCD and PCBN are used for drilling, reaming, milling and turning because the high-precision production of their insert seat and their extraordinary level of sharpness, hardness and wear resistance ensure maximum surface quality.

One essential benefit of the ISO elements is that they save costs on refurbishing the tools. The cutting inserts can be replaced right at the customer's site. This also reduces the costs per component.

MAXIMUM COST EFFICIENCY

using PCD and PCBN-tipped ISO indexable inserts

EFFICIENT CUTTING MATERIAL

PCD/PCBN indexable inserts are highly resistant to wear, giving them long service lives and enabling efficient cutting parameters, even for materials that are difficult to process.

MANY YEARS OF EXPERIENCE

Gühring's decades of experience with PCD/PCBN cutting materials for drilling, reaming and milling has now been expanded to include turning. For hard turning in particular, specific PCBN cutting materials are being used successfully depending on the material to be processed and the geometry of the components.

YOUR RELIABLE PARTNER AROUND THE WORLD

MANUFACTURER EXPERTISE

Gühring has been involved in the development and production of PCD and PCBN-tipped tools for over 35 years. Since its establishment, this business division has developed into one of the core strengths of the Swabian tool manufacturer. As a pioneer in the production of drilling tools, Gühring has gradually tapped into all machining types, from milling and threading to reaming and turning, and has become known for its expertise as a complete supplier.

CUSTOMER-FOCUSED TAILORED SOLUTIONS

Our headquarters in Albstadt, Germany are home to the main PCD/PCBN plant, where we develop and produce innovative diamond tools. 95 % of them are custom tools that we develop together with our customers. We take care of our products throughout the entire operating life of PCD and PCBN custom tools and support customers from process design through to series deployment.

SERVICE

Our service extends far beyond the production of our tools. We will offer you support for the entire service life of your tools, if you wish. Extensive services and after sales support such as tool management and refurbishing (re-sharpening and re-tipping) in original quality are included in our offer. Tool supply, comprehensive logistics, a worldwide network of service centres: we do everything to ensure that you can use our tools as profitably as possible.

WE ARE THERE FOR YOU

We are nearby, everywhere all over the world. On all continents, in almost 50 countries and in over 70 locations. A close-knit network of field service employees and locations guarantees first-class support and quick response times. You can be sure: **we are also available close to you.**

PCD/PCBN DIVISION IN NUMBERS:

48 COUNTRIES

Gühring as a whole: 48 countries

550 EMPLOYEES AROUND THE WORLD

Gühring as a whole: 8,000 employees

9 PRODUCTION SITES

Gühring as a whole: 70 production sites

Headquarters in Albstadt-Ebingen, Germany

With development, product management, design, production and technical field service all based at our Albstadt site, all of our areas of expertise are united under one roof. This creates short communication pathways and allows us to offer a wide range of products for the essential automotive, machine manufacture, aviation, energy, mould construction and electronics markets.

हम आपकी सहायता के लिए सदा उपलब्ध हैं

Estamos a su disposición.

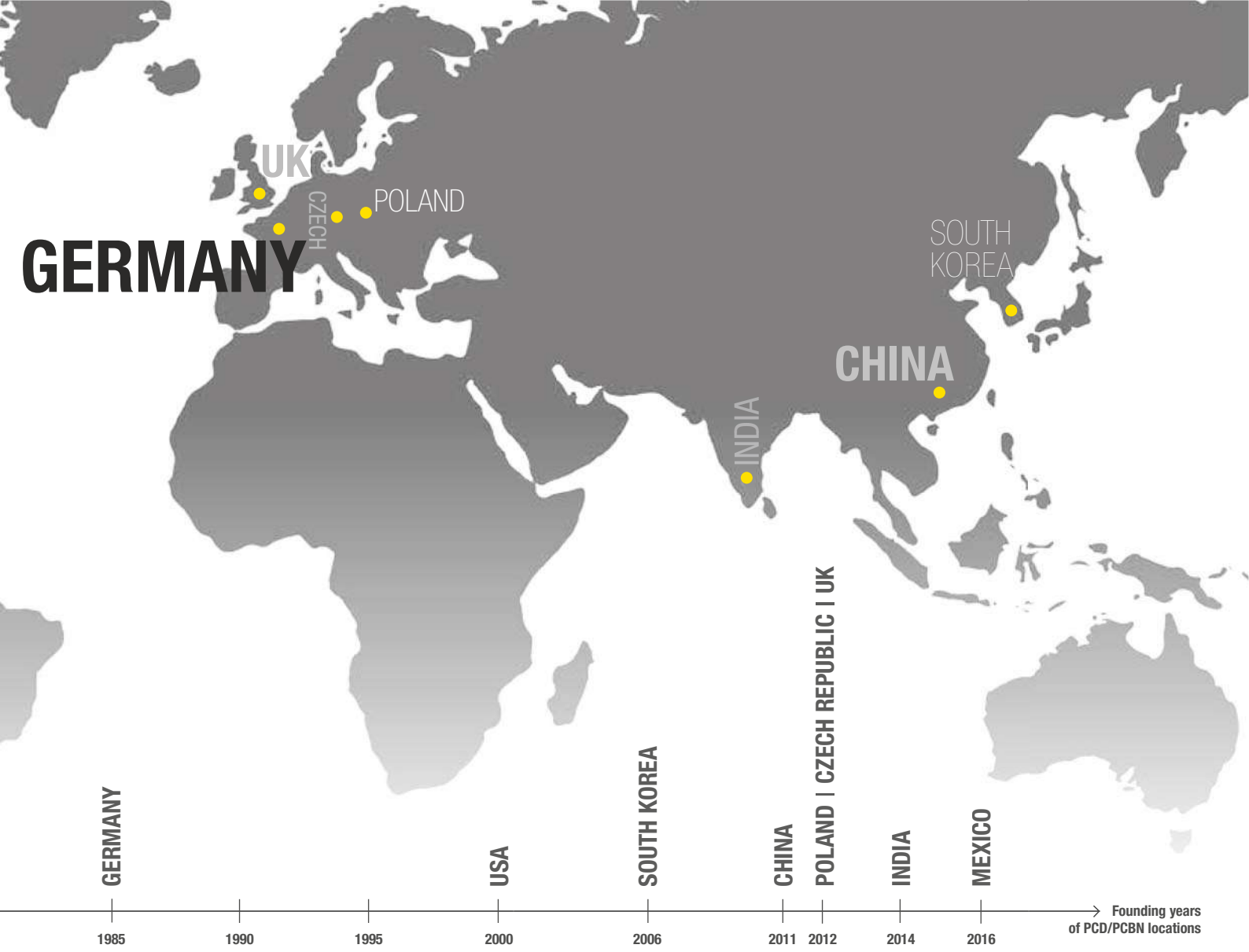
당사는 언제나 고객과 함께 합니다.

Jesteśmy do Państwa dyspozycji.

我们竭诚为你服务 *Jsme tu pro vás.*

We are there for you.

WIR SIND FÜR SIE DA.



OUR PCD/PCBN PRODUCTION LOCATIONS

USA

BROOKFIELD
Guhring Inc.
sales@guhring.com
www.guhring.com

MEXICO

QUERÉTARO
Guhring Mexicana S.A. de C.V.
contacto@guehring.de
www.guhring.com.mx

GERMANY

ALBSTADT-EBINGEN
Gühring KG Werk II
info@guehring.de
www.guehring.de

ENGLAND

BIRMINGHAM
Guhring Ltd.
info@guhring.co.uk
www.guhring.co.uk

CZECH REPUBLIC

LINE-SULKOV
Gühring s.r.o.
sekretariat@guehring.de
www.guehring.cz

POLAND

DĄBROWA GÓRNICZA
Gühring Sp. z.o.o.
biuro@guehring.pl
www.guehring.pl

INDIA

BANGALORE
Guhring India Pvt. Ltd.
info@guhring.in
www.guhring.in

CHINA

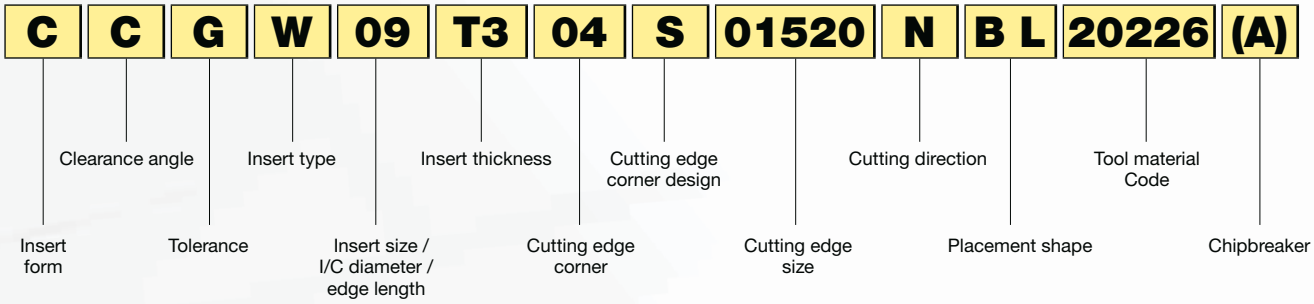
CHANGZHOU
Guhring Cutting Tools Co.,Ltd
info@guhringchina.com
www.guhringchina.com

SOUTH KOREA

DANGJIN
Gühring Korea Co. Ltd.
info@guhring.co.kr
www.guhring.co.kr

Gühring as a whole: 48 national companies and over 70 production and service centres worldwide.

ISO CODE EXPLANATION



See page 82 for a detailed outline of the indexable insert specifications in accordance with DIN ISO 1832:2017-06.

CLASSIFICATION OF MATERIALS

		CBN 10223	CBN 10231	CBN 10660	CBN 20229	CBN 20226	CBN 20228	CBN 301500	PCD 30221
P	Steel, high-alloyed steel	●	●	●	●		●		
M	Stainless steel	●	●	●	●				
K	Grey cast iron, spher. graphite/mall. cast iron					●		●	
N	Aluminium and other non-ferrous metals								●
S	Special, super and titanium alloys					●		●	
H	Hardened steel and chilled cast iron	●	●	●	●		●		

See page 80 for detailed cutting data.

SELECTING THE CUTTING MATERIAL

The choice of cutting material depends on the material to be processed and the cutting conditions.

Cutting type		Tool material							
		CBN 10223	CBN 10231	CBN 10660	CBN 10229	CBN 20226	CBN 20228	CBN 301500	PCD 30221
	Continuous cutting	x		x	x	x	x	x	x
	Slightly interrupted cutting	x	x	x	x	x		x	x
	Partially interrupted cutting		x	x		x		x	x
	Highly interrupted cutting		x					x	x

CONDITIONS OF SALE

All goods sold subject to our General Terms and Conditions of Sale, copies of which are available upon request. We reserve the right to make technical modifications without notice.

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1 ISO INDEXABLE INSERTS, PCD **p. 14**

2 ISO INDEXABLE INSERTS, PCBN

- **ISO indexable inserts, PCBN-tipped** **p. 36**
- **ISO indexable inserts, Full Face** **p. 64**
- **ISO indexable inserts, Solid** **p. 67**

3 ISO INDEXABLE INSERTS, valve seat machining **p. 70**

4 ACCESSORIES **p. 78**

5 TECHNICAL SECTION **p. 77**

PCD

PROGRAMME OVERVIEW

PCD-TIPPED ISO INDEXABLE INSERTS

FORM C, 80°

CCGT, one cutting edge

p. 14 *p. 15*

CCGT, one cutting edge, chipbreaker A

p. 16 *p. 17*

CCGT, one cutting edge, chipbreaker B

p. 18 *p. 19*

CCGW, one cutting edge

p. 20 *p. 21*

CCGW, one cutting edge, finishing geometry (Wiper)

p. 22 *p. 22*

CPGW, one cutting edge

S. 23 *S. 24*

FORM D, 55°

DCGW, one cutting edge

p. 25

DPGW, one cutting edge

p. 26

FORM S, 90°

SCGT, one cutting edge

p. 27 *p. 27*

SCGT, one cutting edge, chipbreaker A

p. 28 *p. 28*

SCGT, one cutting edge, chipbreaker B

p. 29 *p. 29*

SCGW, one cutting edge

p. 30 *p. 30*

SPGT, one cutting edge

p. 31 *p. 31*

SPGW, one cutting edge

S. 32 *S. 32*

FORM T, 60°

TCGW, one cutting edge

p. 33

TPGW, one cutting edge

p. 34

TCCN, Full Face, valve seat ring machining

from p. 70

FORM V, 35°

VCGW, one cutting edge

p. 35

See page 82 for a detailed outline of the indexable insert specifications in accordance with DIN ISO 1832:2017-06.

PCBN

PROGRAMME OVERVIEW

PCBN-TIPPED ISO INDEXABLE INSERTS

FORM C, 80°

CCGW, two cutting edges

from p. 36

CNGA, two cutting edges, hole clamping

from p. 40

CNGN, Solid

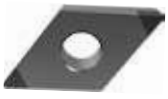
p. 68

FORM D, 55°

DCGW, two cutting edges

from p. 44

DNGA, two cutting edges



from p. 48

FORM H, 120°

HCXX, Full Face, valve seat ring machining

p. 72

FORM R

RNGN, Full Face

p. 64

RNGN, Solid

p. 67

FORM S, 90°

SNGN, Solid

from p. 69

SNGN, Full Face

from p. 65

FORM V, 35°

VBGW, two cutting edges

from p. 60

FORM T, 60°

TCGW, three cutting edges

from p. 52

TNGA, three cutting edges

from p. 56

TNGN, Full Face

from p. 66

TCCN, Full Face, valve seat ring machining

from p. 73

See page 82 for a detailed outline of the indexable insert specifications in accordance with DIN ISO 1832:2017-06.

Indexable inserts CCGT

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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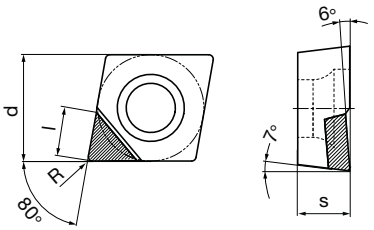

Article no.	**7799**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGT060202F N-AL -30221	7799 62.020
6.350	2.38	0.40	3.000	CCGT060204F N-AL -30221	7799 62.040
6.350	2.38	0.80	2.900	CCGT060208F N-AS -30221	7799 62.080
9.525	3.97	0.20	4.400	CCGT09T302F N-AL -30221	7799 93.020
9.525	3.97	0.40	4.400	CCGT09T304F N-AL -30221	7799 93.040
9.525	3.97	0.80	4.300	CCGT09T308F N-AL -30221	7799 93.080

Indexable inserts CCGT

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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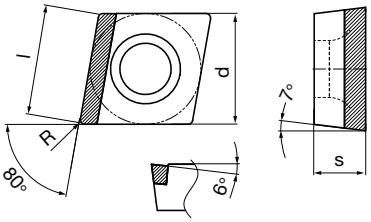

Article no.	7802
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CCGT060202F L-AF -30221	7802 62.020
6.350	2.38	0.40	6.450	CCGT060204F L-AF -30221	7802 62.040
6.350	2.38	0.80	6.450	CCGT060208F L-AF -30221	7802 62.080
9.525	3.97	0.20	9.670	CCGT09T302F L-AF -30221	7802 93.020
9.525	3.97	0.40	9.670	CCGT09T304F L-AF -30221	7802 93.040
9.525	3.97	0.80	9.670	CCGT09T308F L-AF -30221	7802 93.080

Indexable inserts CCGT

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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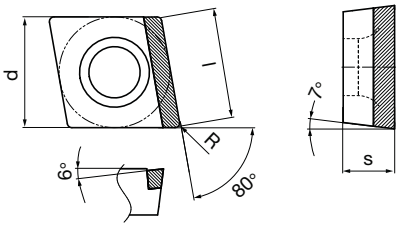

Article no.	7803
Cutting direction	right-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CCGT060202F R-AF -30221	7803 62.020
6.350	2.38	0.40	6.450	CCGT060204F R-AF -30221	7803 62.040
6.350	2.38	0.80	6.450	CCGT060208F R-AF -30221	7803 62.080
9.525	3.97	0.20	9.670	CCGT09T302F R-AF -30221	7803 93.020
9.525	3.97	0.40	9.670	CCGT09T304F R-AF -30221	7803 93.040
9.525	3.97	0.80	9.670	CCGT09T308F R-AF -30221	7803 93.080

Indexable inserts with chipbreaker CCGT

- form C
- with screw clamping
- with one cutting edge
- with chipbreaker A

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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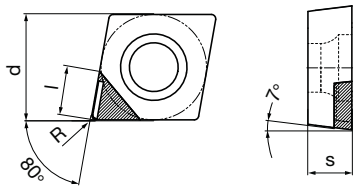

Article no.	**7828**
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGT060202F L-AL -30221 A	7828 62.020
6.350	2.38	0.40	3.000	CCGT060204F L-AL -30221 A	7828 62.040
6.350	2.38	0.80	2.900	CCGT060208F L-AS -30221 A	7828 62.080
9.525	3.97	0.20	4.400	CCGT09T302F L-AL -30221 A	7828 93.020
9.525	3.97	0.40	4.400	CCGT09T304F L-AL -30221 A	7828 93.040
9.525	3.97	0.80	4.300	CCGT09T308F L-AL -30221 A	7828 93.080

Indexable inserts with chipbreaker CCGT

- form C
- with screw clamping
- with one cutting edge
- with chipbreaker A

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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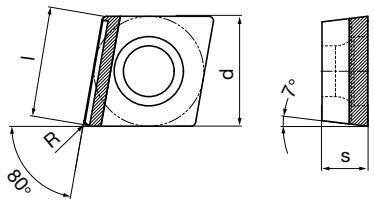

Article no.	7829
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CCGT060202F L-AF -30221 A	7829 62.020
6.350	2.38	0.40	6.450	CCGT060204F L-AF -30221 A	7829 62.040
6.350	2.38	0.80	6.450	CCGT060208F L-AF -30221 A	7829 62.080
9.525	3.97	0.20	9.670	CCGT09T302F L-AF -30221 A	7829 93.020
9.525	3.97	0.40	9.670	CCGT09T304F L-AF -30221 A	7829 93.040
9.525	3.97	0.80	9.670	CCGT09T308F L-AF -30221 A	7829 93.080

Indexable inserts with chipbreaker CCGT

- form C
- with screw clamping
- with one cutting edge
- with chipbreaker A

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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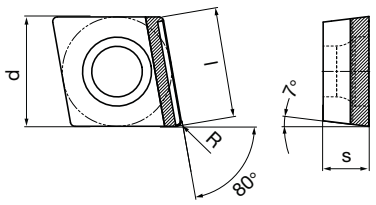

Article no.	7830
Cutting direction	right-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CCGT060202F R-AF -30221 A	7830 62.020
6.350	2.38	0.40	6.450	CCGT060204F R-AF -30221 A	7830 62.040
6.350	2.38	0.80	6.450	CCGT060208F R-AF -30221 A	7830 62.080
9.525	3.97	0.20	9.670	CCGT09T302F R-AF -30221 A	7830 93.020
9.525	3.97	0.40	9.670	CCGT09T304F R-AF -30221 A	7830 93.040
9.525	3.97	0.80	9.670	CCGT09T308F R-AF -30221 A	7830 93.080

Indexable inserts with chipbreaker CCGT

- form C
- with screw clamping
- with one cutting edge
- with chipbreaker B

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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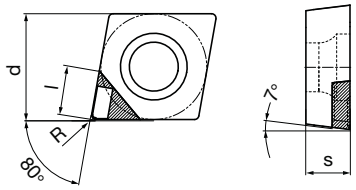

Article no.	**7833**
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGT060202F L-AL -30221 B	7833 62.020
6.350	2.38	0.40	3.000	CCGT060204F L-AL -30221 B	7833 62.040
6.350	2.38	0.80	2.900	CCGT060208F L-AS -30221 B	7833 62.080
9.525	3.97	0.20	4.400	CCGT09T302F L-AL -30221 B	7833 93.020
9.525	3.97	0.40	4.400	CCGT09T304F L-AL -30221 B	7833 93.040
9.525	3.97	0.80	4.300	CCGT09T308F L-AL -30221 B	7833 93.080

Indexable inserts with chipbreaker CCGT

- form C
- with screw clamping
- with one cutting edge
- with chipbreaker B

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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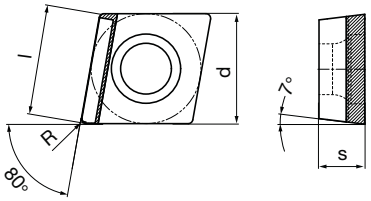

Article no.	7834
Cutting direction	left-hand

d	s	R	l	ISO		Order no.
mm	mm	mm	mm			
6.350	2.38	0.20	6.450	CCGT060202F	L-AF -30221 B	7834 62.020
6.350	2.38	0.40	6.450	CCGT060204F	L-AF -30221 B	7834 62.040
6.350	2.38	0.80	6.450	CCGT060208F	L-AF -30221 B	7834 62.080
9.525	3.97	0.20	9.670	CCGT09T302F	L-AF -30221 B	7834 93.020
9.525	3.97	0.40	9.670	CCGT09T304F	L-AF -30221 B	7834 93.040
9.525	3.97	0.80	9.670	CCGT09T308F	L-AF -30221 B	7834 93.080

Indexable inserts with chipbreaker CCGT

- form C
- with screw clamping
- with one cutting edge
- with chipbreaker B

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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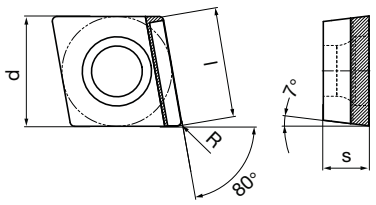

Article no.	7835
Cutting direction	right-hand

d	s	R	l	ISO		Order no.
mm	mm	mm	mm			
6.350	2.38	0.20	6.450	CCGT060202F	R-AF -30221 B	7835 62.020
6.350	2.38	0.40	6.450	CCGT060204F	R-AF -30221 B	7835 62.040
6.350	2.38	0.80	6.450	CCGT060208F	R-AF -30221 B	7835 62.080
9.525	3.97	0.20	9.670	CCGT09T302F	R-AF -30221 B	7835 93.020
9.525	3.97	0.40	9.670	CCGT09T304F	R-AF -30221 B	7835 93.040
9.525	3.97	0.80	9.670	CCGT09T308F	R-AF -30221 B	7835 93.080

Indexable inserts CCGW

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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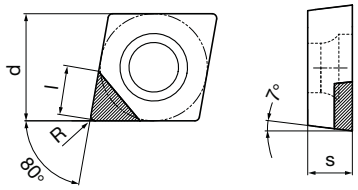

Article no.	7665
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202F N-AL -30221	7665 62.020
6.350	2.38	0.40	3.000	CCGW060204F N-AL -30221	7665 62.040
6.350	2.38	0.80	2.900	CCGW060208F N-AS -30221	7665 62.080
9.525	3.97	0.20	4.000	CCGW09T302F N-AL -30221	7665 93.020
9.525	3.97	0.40	4.000	CCGW09T304F N-AL -30221	7665 93.040
9.525	3.97	0.80	4.300	CCGW09T308F N-AL -30221	7665 93.080

Indexable inserts CCGW

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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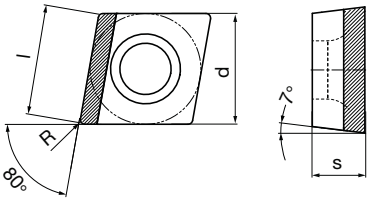

Article no.	7666
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CCGW060202F L-AF -30221	7666 62.020
6.350	2.38	0.40	6.450	CCGW060204F L-AF -30221	7666 62.040
6.350	2.38	0.80	6.450	CCGW060208F L-AF -30221	7666 62.080
9.525	3.97	0.20	9.670	CCGW09T302F L-AF -30221	7666 93.020
9.525	3.97	0.40	9.670	CCGW09T304F L-AF -30221	7666 93.040
9.525	3.97	0.80	9.670	CCGW09T308F L-AF -30221	7666 93.080
12.700	4.76	0.40	12.900	CCGW120404F L-AF -30221	7666 124.040
12.700	4.76	0.80	12.900	CCGW120408F L-AF -30221	7666 124.080

Indexable inserts CCGW

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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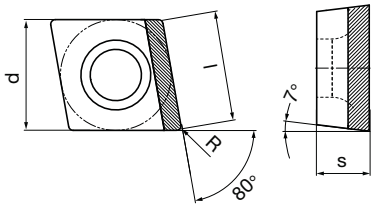

Article no.	7667
Cutting direction	right-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CCGW060202F R-AF -30221	7667 62.020
6.350	2.38	0.40	6.450	CCGW060204F R-AF -30221	7667 62.040
6.350	2.38	0.80	6.450	CCGW060208F R-AF -30221	7667 62.080
9.525	3.97	0.20	9.670	CCGW09T302F R-AF -30221	7667 93.020
9.525	3.97	0.40	9.670	CCGW09T304F R-AF -30221	7667 93.040
9.525	3.97	0.80	9.670	CCGW09T308F R-AF -30221	7667 93.080

Indexable inserts CCGW

- form C
- finishing geometry
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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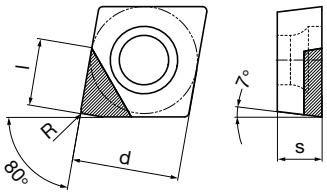

Article no.	7670
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.750	CCGW060202F L-AL -30221	7670 62.020
6.350	2.38	0.40	3.750	CCGW060204F L-AL -30221	7670 62.040
9.525	3.97	0.20	5.640	CCGW09T302F L-AL -30221	7670 93.020
9.525	3.97	0.40	5.640	CCGW09T304F L-AL -30221	7670 93.040

Indexable inserts CCGW

- form C
- finishing geometry
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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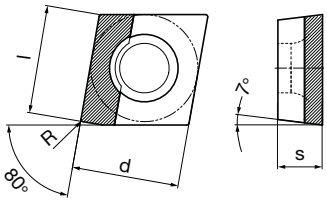

Article no.	7672
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.410	CCGW060202F L-AF -30221	7672 62.020
6.350	2.38	0.40	6.410	CCGW060204F L-AF -30221	7672 62.040
9.525	3.97	0.20	9.640	CCGW09T302F L-AF -30221	7672 93.020
9.525	3.97	0.40	9.640	CCGW09T304F L-AF -30221	7672 93.040

Indexable inserts CPGW

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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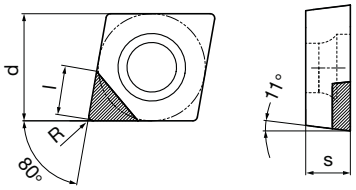

Article no.	**7668**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CPGW060202F N-AL -30221	7668 62.020
6.350	2.38	0.40	3.000	CPGW060204F N-AL -30221	7668 62.040
6.350	2.38	0.80	2.900	CPGW060208F N-AS -30221	7668 62.080
9.525	3.97	0.20	4.400	CPGW09T302F N-AL -30221	7668 93.020
9.525	3.97	0.40	4.400	CPGW09T304F N-AL -30221	7668 93.040
9.525	3.97	0.80	4.400	CPGW09T308F N-AL -30221	7668 93.080

Indexable inserts CPGW

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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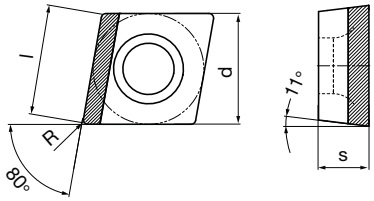

Article no.	7669
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CPGW060202F L-AF -30221	7669 62.020
6.350	2.38	0.40	6.450	CPGW060204F L-AF -30221	7669 62.040
6.350	2.38	0.80	6.450	CPGW060208F L-AF -30221	7669 62.080
9.525	3.97	0.20	9.670	CPGW09T302F L-AF -30221	7669 93.020
9.525	3.97	0.40	9.670	CPGW09T304F L-AF -30221	7669 93.040
9.525	3.97	0.80	9.670	CPGW09T308F L-AF -30221	7669 93.080

Indexable inserts CPGW

- form C
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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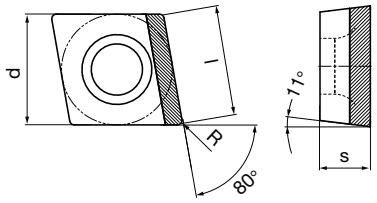

Article no.	7798
Cutting direction	right-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	6.450	CPGW060202F R-AF -30221	7798 62.020
6.350	2.38	0.40	6.450	CPGW060204F R-AF -30221	7798 62.040
6.350	2.38	0.80	6.450	CPGW060208F R-AF -30221	7798 62.080
9.525	3.97	0.20	9.670	CPGW09T302F R-AF -30221	7798 93.020
9.525	3.97	0.40	9.670	CPGW09T304F R-AF -30221	7798 93.040
9.525	3.97	0.80	9.670	CPGW09T308F R-AF -30221	7798 93.080

Indexable inserts DCGW

- form D
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
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GÜHRINGNAVIGATOR

Cutting data page 80

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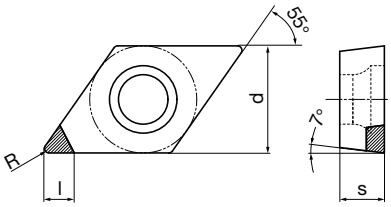

Article no.	7847
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202F N-AS -30221	7847 72.020
6.350	2.38	0.40	2.600	DCGW070204F N-AS -30221	7847 72.040
6.350	2.38	0.80	2.800	DCGW070208F N-AS -30221	7847 72.080
9.525	3.97	0.40	2.600	DCGW11T304F N-AS -30221	7847 113.040
9.525	3.97	0.80	2.800	DCGW11T308F N-AS -30221	7847 113.080

Indexable inserts DPGW

- form D
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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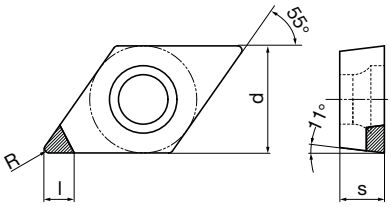

Article no.	7848
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DPGW070202F N-AS -30221	7848 72.020
6.350	2.38	0.40	2.600	DPGW070204F N-AS -30221	7848 72.040
6.350	2.38	0.80	2.800	DPGW070208F N-AS -30221	7848 72.080
9.525	3.97	0.40	2.600	DPGW11T304F N-AS -30221	7848 113.040
9.525	3.97	0.80	2.800	DPGW11T308F N-AS -30221	7848 113.080

Indexable inserts SCGT

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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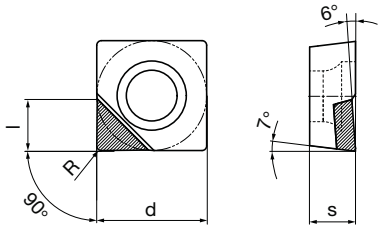

Article no.	7837
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	4.500	SCGT09T304F N-AL -30221	7837 93.040
9.525	3.97	0.80	4.500	SCGT09T308F N-AL -30221	7837 93.080
12.700	4.76	0.40	4.500	SCGT120404F N-AL -30221	7837 124.040
12.700	4.76	0.80	4.500	SCGT120408F N-AL -30221	7837 124.080

Indexable inserts SCGT

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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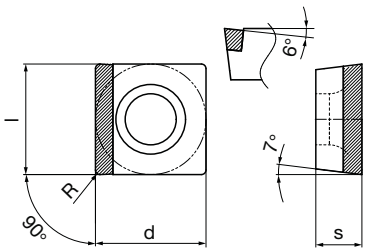

Article no.	7838
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	9.525	SCGT09T304F N-AF -30221	7838 93.040
9.525	3.97	0.80	9.525	SCGT09T308F N-AF -30221	7838 93.080
12.700	4.76	0.40	12.700	SCGT120404F N-AF -30221	7838 124.040
12.700	4.76	0.80	12.700	SCGT120408F N-AF -30221	7838 124.080

Indexable inserts with chipbreaker SCGT

- form S
- with screw clamping
- with one cutting edge
- with chipbreaker A

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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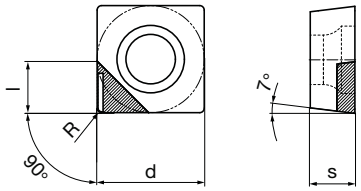

Article no.	7843
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	4.600	SCGT09T304F L-AL -30221 A	7843 93.040
9.525	3.97	0.80	4.600	SCGT09T308F L-AL -30221 A	7843 93.080

Indexable inserts with chipbreaker SCGT

- form S
- with screw clamping
- with one cutting edge
- with chipbreaker A

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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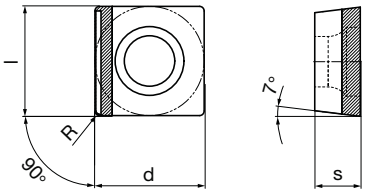

Article no.	7844
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	9.525	SCGT09T304F N-AF -30221 A	7844 93.040
9.525	3.97	0.80	9.525	SCGT09T308F N-AF -30221 A	7844 93.080

Indexable inserts with chipbreaker SCGT

- form S
- with screw clamping
- with one cutting edge
- with chipbreaker B

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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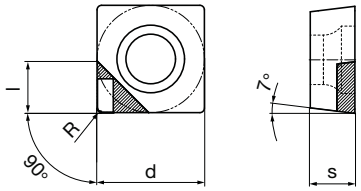

Article no.	**7845**
Cutting direction	left-hand

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	4.500	SCGT09T304F L-AL -30221 B	7845 93.040
9.525	3.97	0.80	4.500	SCGT09T308F L-AL -30221 B	7845 93.080

Indexable inserts with chipbreaker SCGT

- form S
- with screw clamping
- with one cutting edge
- with chipbreaker B

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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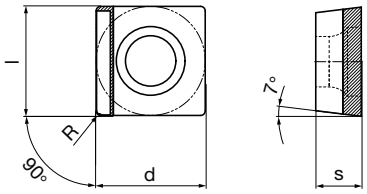

Article no.	**7846**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	9.525	SCGT09T304F N-AF -30221 B	7846 93.040
9.525	3.97	0.80	9.525	SCGT09T308F N-AF -30221 B	7846 93.080

Indexable inserts SCGW

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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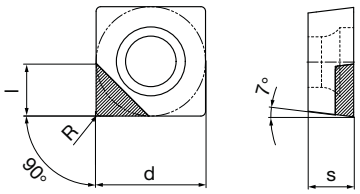

Article no.	7674
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.20	4.600	SCGW09T302F N-AL -30221	7674 93.020
9.525	3.97	0.40	4.600	SCGW09T304F N-AL -30221	7674 93.040
9.525	3.97	0.80	4.600	SCGW09T308F N-AL -30221	7674 93.080
12.700	4.76	0.20	4.600	SCGW120402F N-AL -30221	7674 124.020
12.700	4.76	0.40	4.600	SCGW120404F N-AL -30221	7674 124.040
12.700	4.76	0.80	4.600	SCGW120408F N-AL -30221	7674 124.080

Indexable inserts SCGW

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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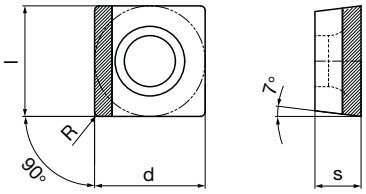

Article no.	7675
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.20	9.525	SCGW09T302F N-AF -30221	7675 93.020
9.525	3.97	0.40	9.525	SCGW09T304F N-AF -30221	7675 93.040
9.525	3.97	0.80	9.525	SCGW09T308F N-AF -30221	7675 93.080
12.700	4.76	0.20	12.700	SCGW120402F N-AF -30221	7675 124.020
12.700	4.76	0.40	12.700	SCGW120404F N-AF -30221	7675 124.040
12.700	4.76	0.80	12.700	SCGW120408F N-AF -30221	7675 124.080

Indexable inserts SPGT

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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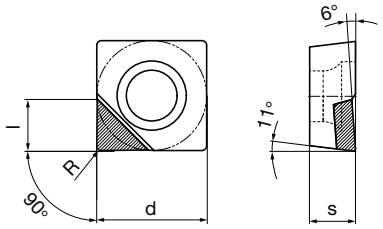

Article no.	7839
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	4.500	SPGT09T304F N-AL -30221	7839 93.040
9.525	3.97	0.80	4.500	SPGT09T308F N-AL -30221	7839 93.080

Indexable inserts SPGT

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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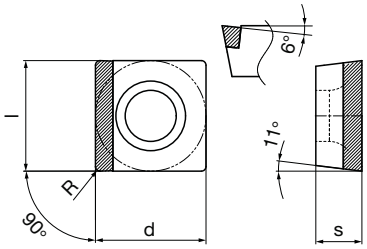

Article no.	7842
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.40	9.525	SPGT09T304F N-AF -30221	7842 93.040
9.525	3.97	0.80	9.525	SPGT09T308F N-AF -30221	7842 93.080

Indexable inserts SPGW

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯ bright

GÜHRINGNAVIGATOR
Cutting data page 80

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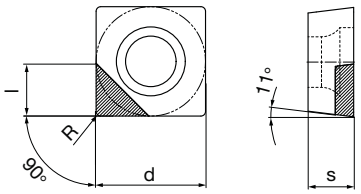

Article no.	7676
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.20	4.600	SPGW09T302F N-AL -30221	7676 93.020
9.525	3.97	0.40	4.600	SPGW09T304F N-AL -30221	7676 93.040
9.525	3.97	0.80	4.600	SPGW09T308F N-AL -30221	7676 93.080

Indexable inserts SPGW

- form S
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯ bright

GÜHRINGNAVIGATOR
Cutting data page 80

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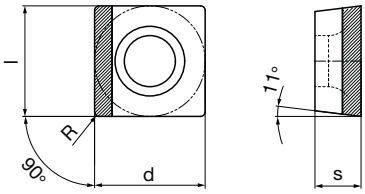

Article no.	7677
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.97	0.20	9.525	SPGW09T302F N-AF -30221	7677 93.020
9.525	3.97	0.40	9.525	SPGW09T304F N-AF -30221	7677 93.040
9.525	3.97	0.80	9.525	SPGW09T308F N-AF -30221	7677 93.080

Indexable inserts TCGW

- form T
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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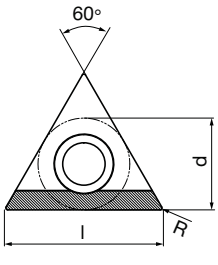

Article no.	**7664**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	9.600	TCGW090204F N-AF -30221	7664 92.040
5.560	2.38	0.80	9.600	TCGW090208F N-AF -30221	7664 92.080
6.350	2.38	0.20	11.000	TCGW110202F N-AF -30221	7664 112.020
6.350	2.38	0.40	11.000	TCGW110204F N-AF -30221	7664 112.040
6.350	2.38	0.80	11.000	TCGW110208F N-AF -30221	7664 112.080
9.525	3.97	0.20	16.500	TCGW16T302F N-AF -30221	7664 163.020
9.525	3.97	0.40	16.500	TCGW16T304F N-AF -30221	7664 163.040
9.525	3.97	0.80	16.500	TCGW16T308F N-AF -30221	7664 163.080

Indexable inserts TPGW

- form T
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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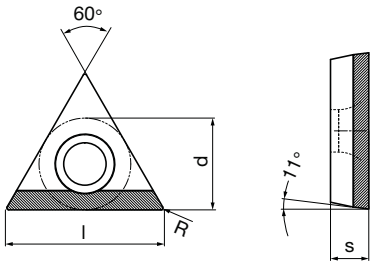

Article no.	**7663**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.20	9.600	TPGW090202F N-AF -30221	7663 92.020
5.560	2.38	0.40	9.600	TPGW090204F N-AF -30221	7663 92.040
5.560	2.38	0.80	9.600	TPGW090208F N-AF -30221	7663 92.080
6.350	2.38	0.20	11.000	TPGW110202F N-AF -30221	7663 112.020
6.350	2.38	0.40	11.000	TPGW110204F N-AF -30221	7663 112.040
6.350	2.38	0.80	11.000	TPGW110208F N-AF -30221	7663 112.080
9.525	3.97	0.20	16.500	TPGW16T302F N-AF -30221	7663 163.020
9.525	3.97	0.40	16.500	TPGW16T304F N-AF -30221	7663 163.040
9.525	3.97	0.80	16.500	TPGW16T308F N-AF -30221	7663 163.080

Indexable inserts VCGW

- form V
- with screw clamping
- with one cutting edge

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCD
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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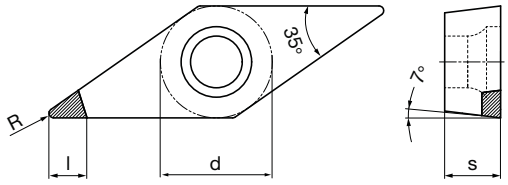

Article no.	7849
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	3.200	VCGW160404F N-AL -30221	7849 164.040
9.525	4.76	0.80	3.300	VCGW160408F N-AL -30221	7849 164.080

Indexable inserts CCGW

- form C
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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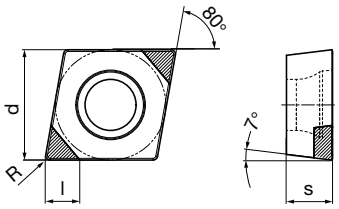

Article no.	**7742**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202S00720N-BL -10660	7742 62.020
6.350	2.38	0.40	3.000	CCGW060204S01520N-BL -10660	7742 62.040
6.350	2.38	0.80	2.900	CCGW060208S02020N-BS -10660	7742 62.080
9.525	3.97	0.20	3.000	CCGW09T302S00720N-BL -10660	7742 93.020
9.525	3.97	0.40	3.000	CCGW09T304S01520N-BL -10660	7742 93.040
9.525	3.97	0.80	2.900	CCGW09T308S02020N-BS -10660	7742 93.080

Article no.	**7743**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202F N-BL -10660	7743 62.020
6.350	2.38	0.40	3.000	CCGW060204F N-BL -10660	7743 62.040
6.350	2.38	0.80	2.900	CCGW060208F N-BS -10660	7743 62.080
9.525	3.97	0.20	3.000	CCGW09T302F N-BL -10660	7743 93.020
9.525	3.97	0.40	3.000	CCGW09T304F N-BL -10660	7743 93.040
9.525	3.97	0.80	2.900	CCGW09T308F N-BS -10660	7743 93.080

Article no.	**7744**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202E N-BL -10660	7744 62.020
6.350	2.38	0.40	3.000	CCGW060204E N-BL -10660	7744 62.040
6.350	2.38	0.80	2.900	CCGW060208E N-BS -10660	7744 62.080
9.525	3.97	0.20	3.000	CCGW09T302E N-BL -10660	7744 93.020
9.525	3.97	0.40	3.000	CCGW09T304E N-BL -10660	7744 93.040
9.525	3.97	0.80	2.900	CCGW09T308E N-BS -10660	7744 93.080

Indexable inserts CCGW

- form C
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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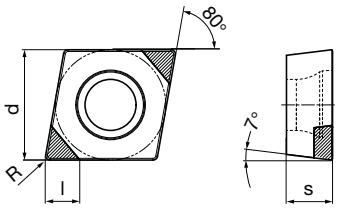

Article no.	**7745**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202S00720N-BL -10223	7745 62.020
6.350	2.38	0.40	3.000	CCGW060204S01520N-BL -10223	7745 62.040
6.350	2.38	0.80	2.900	CCGW060208S02020N-BS -10223	7745 62.080
9.525	3.97	0.20	3.000	CCGW09T302S00720N-BL -10223	7745 93.020
9.525	3.97	0.40	3.000	CCGW09T304S01520N-BL -10223	7745 93.040
9.525	3.97	0.80	2.900	CCGW09T308S02020N-BS -10223	7745 93.080

Article no.	**7746**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202F N-BL -10223	7746 62.020
6.350	2.38	0.40	3.000	CCGW060204F N-BL -10223	7746 62.040
6.350	2.38	0.80	2.900	CCGW060208F N-BS -10223	7746 62.080
9.525	3.97	0.20	3.000	CCGW09T302F N-BL -10223	7746 93.020
9.525	3.97	0.40	3.000	CCGW09T304F N-BL -10223	7746 93.040
9.525	3.97	0.80	2.900	CCGW09T308F N-BS -10223	7746 93.080

Article no.	**7747**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202E N-BL -10223	7747 62.020
6.350	2.38	0.40	3.000	CCGW060204E N-BL -10223	7747 62.040
6.350	2.38	0.80	2.900	CCGW060208E N-BS -10223	7747 62.080
9.525	3.97	0.20	3.000	CCGW09T302E N-BL -10223	7747 93.020
9.525	3.97	0.40	3.000	CCGW09T304E N-BL -10223	7747 93.040
9.525	3.97	0.80	2.900	CCGW09T308E N-BS -10223	7747 93.080

Indexable inserts CCGW

- form C
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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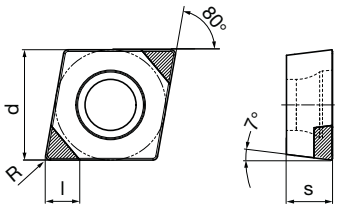

Article no.	**7748**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202S00720N-BL -10231	7748 62.020
6.350	2.38	0.40	3.000	CCGW060204S01520N-BL -10231	7748 62.040
6.350	2.38	0.80	2.900	CCGW060208S02020N-BS -10231	7748 62.080
9.525	3.97	0.20	3.000	CCGW09T302S00720N-BL -10231	7748 93.020
9.525	3.97	0.40	3.000	CCGW09T304S01520N-BL -10231	7748 93.040
9.525	3.97	0.80	2.900	CCGW09T308S02020N-BS -10231	7748 93.080

Article no.	**7749**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202F N-BL -10231	7749 62.020
6.350	2.38	0.40	3.000	CCGW060204F N-BL -10231	7749 62.040
6.350	2.38	0.80	2.900	CCGW060208F N-BS -10231	7749 62.080
9.525	3.97	0.20	3.000	CCGW09T302F N-BL -10231	7749 93.020
9.525	3.97	0.40	3.000	CCGW09T304F N-BL -10231	7749 93.040
9.525	3.97	0.80	2.900	CCGW09T308F N-BS -10231	7749 93.080

Article no.	**7750**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202E N-BL -10231	7750 62.020
6.350	2.38	0.40	3.000	CCGW060204E N-BL -10231	7750 62.040
6.350	2.38	0.80	2.900	CCGW060208E N-BS -10231	7750 62.080
9.525	3.97	0.20	3.000	CCGW09T302E N-BL -10231	7750 93.020
9.525	3.97	0.40	3.000	CCGW09T304E N-BL -10231	7750 93.040
9.525	3.97	0.80	2.900	CCGW09T308E N-BS -10231	7750 93.080

Indexable inserts CCGW

- form C
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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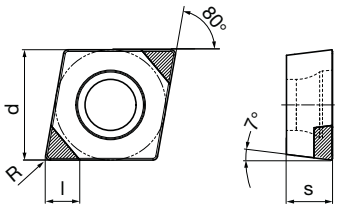

Article no.	7751
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202S00720N-BL -20226	7751 62.020
6.350	2.38	0.40	3.000	CCGW060204S01520N-BL -20226	7751 62.040
6.350	2.38	0.80	2.900	CCGW060208S02020N-BS -20226	7751 62.080
9.525	3.97	0.20	3.000	CCGW09T302S00720N-BL -20226	7751 93.020
9.525	3.97	0.40	3.000	CCGW09T304S01520N-BL -20226	7751 93.040
9.525	3.97	0.80	2.900	CCGW09T308S02020N-BS -20226	7751 93.080

Article no.	7752
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202F N-BL -20226	7752 62.020
6.350	2.38	0.40	3.000	CCGW060204F N-BL -20226	7752 62.040
6.350	2.38	0.80	2.900	CCGW060208F N-BS -20226	7752 62.080
9.525	3.97	0.20	3.000	CCGW09T302F N-BL -20226	7752 93.020
9.525	3.97	0.40	3.000	CCGW09T304F N-BL -20226	7752 93.040
9.525	3.97	0.80	2.900	CCGW09T308F N-BS -20226	7752 93.080

Article no.	7753
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.000	CCGW060202E N-BL -20226	7753 62.020
6.350	2.38	0.40	3.000	CCGW060204E N-BL -20226	7753 62.040
6.350	2.38	0.80	2.900	CCGW060208E N-BS -20226	7753 62.080
9.525	3.97	0.20	3.000	CCGW09T302E N-BL -20226	7753 93.020
9.525	3.97	0.40	3.000	CCGW09T304E N-BL -20226	7753 93.040
9.525	3.97	0.80	2.900	CCGW09T308E N-BS -20226	7753 93.080

Indexable inserts CNGA

- form C
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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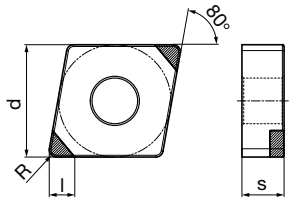

Article no.	**7754**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404S01520N-BL -10660	7754 124.040
12.700	4.76	0.80	2.900	CNGA120408S02020N-BS -10660	7754 124.080
12.700	4.76	1.20	2.800	CNGA120412S02020N-BS -10660	7754 124.120

Article no.	**7755**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404F N-BL -10660	7755 124.040
12.700	4.76	0.80	2.900	CNGA120408F N-BS -10660	7755 124.080
12.700	4.76	1.20	2.800	CNGA120412F N-BS -10660	7755 124.120

Article no.	**7756**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404E N-BL -10660	7756 124.040
12.700	4.76	0.80	2.900	CNGA120408E N-BS -10660	7756 124.080
12.700	4.76	1.20	2.800	CNGA120412E N-BS -10660	7756 124.120

Indexable inserts CNGA

- form C
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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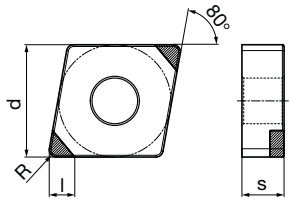

Article no.	**7757**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404S01520N-BL -10223	7757 124.040
12.700	4.76	0.80	2.900	CNGA120408S02020N-BS -10223	7757 124.080
12.700	4.76	1.20	2.800	CNGA120412S02020N-BS -10223	7757 124.120

Article no.	**7758**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404F N-BL -10223	7758 124.040
12.700	4.76	0.80	2.900	CNGA120408F N-BS -10223	7758 124.080
12.700	4.76	1.20	2.800	CNGA120412F N-BS -10223	7758 124.120

Article no.	**7759**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404E N-BL -10223	7759 124.040
12.700	4.76	0.80	2.900	CNGA120408E N-BS -10223	7759 124.080
12.700	4.76	1.20	2.800	CNGA120412E N-BS -10223	7759 124.120

Indexable inserts CNGA

- form C
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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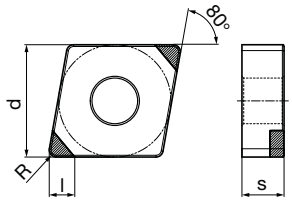

Article no.	**7760**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404S01520N-BL -10231	7760 124.040
12.700	4.76	0.80	2.900	CNGA120408S02020N-BS -10231	7760 124.080
12.700	4.76	1.20	2.800	CNGA120412S02020N-BS -10231	7760 124.120

Article no.	**7761**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404F N-BL -10231	7761 124.040
12.700	4.76	0.80	2.900	CNGA120408F N-BS -10231	7761 124.080
12.700	4.76	1.20	2.800	CNGA120412F N-BS -10231	7761 124.120

Article no.	**7762**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404E N-BL -10231	7762 124.040
12.700	4.76	0.80	2.900	CNGA120408E N-BS -10231	7762 124.080
12.700	4.76	1.20	2.800	CNGA120412E N-BS -10231	7762 124.120

Indexable inserts CNGA

- form C
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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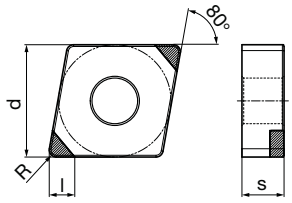

Article no.	**7763**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404S01520N-BL -20226	7763 124.040
12.700	4.76	0.80	2.900	CNGA120408S02020N-BS -20226	7763 124.080
12.700	4.76	1.20	2.800	CNGA120412S02020N-BS -20226	7763 124.120

Article no.	**7764**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404F N-BL -20226	7764 124.040
12.700	4.76	0.80	2.900	CNGA120408F N-BS -20226	7764 124.080
12.700	4.76	1.20	2.800	CNGA120412F N-BS -20226	7764 124.120

Article no.	**7765**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
12.700	4.76	0.40	3.000	CNGA120404E N-BL -20226	7765 124.040
12.700	4.76	0.80	2.900	CNGA120408E N-BS -20226	7765 124.080
12.700	4.76	1.20	2.800	CNGA120412E N-BS -20226	7765 124.120

Indexable inserts DCGW

- form D
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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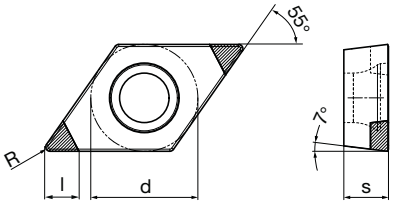

Article no.	7766
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202S00720N-BS -10660	7766 72.020
6.350	2.38	0.40	2.600	DCGW070204S01520N-BS -10660	7766 72.040
6.350	2.38	0.80	2.700	DCGW070208S02020N-BS -10660	7766 72.080
9.525	3.97	0.20	2.800	DCGW11T302S00720N-BS -10660	7766 113.020
9.525	3.97	0.40	2.600	DCGW11T304S01520N-BS -10660	7766 113.040
9.525	3.97	0.80	2.700	DCGW11T308S02020N-BS -10660	7766 113.080

Article no.	7767
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202F N-BS -10660	7767 72.020
6.350	2.38	0.40	2.600	DCGW070204F N-BS -10660	7767 72.040
6.350	2.38	0.80	2.700	DCGW070208F N-BS -10660	7767 72.080
9.525	3.97	0.20	2.800	DCGW11T302F N-BS -10660	7767 113.020
9.525	3.97	0.40	2.600	DCGW11T304F N-BS -10660	7767 113.040
9.525	3.97	0.80	2.700	DCGW11T308F N-BS -10660	7767 113.080

Article no.	7768
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202E N-BS -10660	7768 72.020
6.350	2.38	0.40	2.600	DCGW070204E N-BS -10660	7768 72.040
6.350	2.38	0.80	2.700	DCGW070208E N-BS -10660	7768 72.080
9.525	3.97	0.20	2.800	DCGW11T302E N-BS -10660	7768 113.020
9.525	3.97	0.40	2.600	DCGW11T304E N-BS -10660	7768 113.040
9.525	3.97	0.80	2.700	DCGW11T308E N-BS -10660	7768 113.080

Indexable inserts DCGW

- form D
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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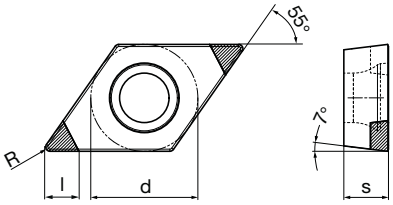

Article no.	7769
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202S00720N-BS -10223	7769 72.020
6.350	2.38	0.40	2.600	DCGW070204S01520N-BS -10223	7769 72.040
6.350	2.38	0.80	2.700	DCGW070208S02020N-BS -10223	7769 72.080
9.525	3.97	0.20	2.800	DCGW11T302S00720N-BS -10223	7769 113.020
9.525	3.97	0.40	2.600	DCGW11T304S01520N-BS -10223	7769 113.040
9.525	3.97	0.80	2.700	DCGW11T308S02020N-BS -10223	7769 113.080

Article no.	7770
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202F N-BS -10223	7770 72.020
6.350	2.38	0.40	2.600	DCGW070204F N-BS -10223	7770 72.040
6.350	2.38	0.80	2.700	DCGW070208F N-BS -10223	7770 72.080
9.525	3.97	0.20	2.800	DCGW11T302F N-BS -10223	7770 113.020
9.525	3.97	0.40	2.600	DCGW11T304F N-BS -10223	7770 113.040
9.525	3.97	0.80	2.700	DCGW11T308F N-BS -10223	7770 113.080

Article no.	7771
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202E N-BS -10223	7771 72.020
6.350	2.38	0.40	2.600	DCGW070204E N-BS -10223	7771 72.040
6.350	2.38	0.80	2.700	DCGW070208E N-BS -10223	7771 72.080
9.525	3.97	0.20	2.800	DCGW11T302E N-BS -10223	7771 113.020
9.525	3.97	0.40	2.600	DCGW11T304E N-BS -10223	7771 113.040
9.525	3.97	0.80	2.700	DCGW11T308E N-BS -10223	7771 113.080

Indexable inserts DCGW

- form D
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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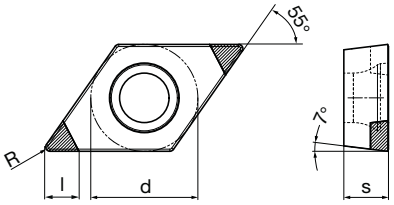

Article no.	**7772**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202S00720N-BS -10231	7772 72.020
6.350	2.38	0.40	2.600	DCGW070204S01520N-BS -10231	7772 72.040
6.350	2.38	0.80	2.700	DCGW070208S02020N-BS -10231	7772 72.080
9.525	3.97	0.20	2.800	DCGW11T302S00720N-BS -10231	7772 113.020
9.525	3.97	0.40	2.600	DCGW11T304S01520N-BS -10231	7772 113.040
9.525	3.97	0.80	2.700	DCGW11T308S02020N-BS -10231	7772 113.080

Article no.	**7773**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202F N-BS -10231	7773 72.020
6.350	2.38	0.40	2.600	DCGW070204F N-BS -10231	7773 72.040
6.350	2.38	0.80	2.700	DCGW070208F N-BS -10231	7773 72.080
9.525	3.97	0.20	2.800	DCGW11T302F N-BS -10231	7773 113.020
9.525	3.97	0.40	2.600	DCGW11T304F N-BS -10231	7773 113.040
9.525	3.97	0.80	2.700	DCGW11T308F N-BS -10231	7773 113.080

Article no.	**7774**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202E N-BS -10231	7774 72.020
6.350	2.38	0.40	2.600	DCGW070204E N-BS -10231	7774 72.040
6.350	2.38	0.80	2.700	DCGW070208E N-BS -10231	7774 72.080
9.525	3.97	0.20	2.800	DCGW11T302E N-BS -10231	7774 113.020
9.525	3.97	0.40	2.600	DCGW11T304E N-BS -10231	7774 113.040
9.525	3.97	0.80	2.700	DCGW11T308E N-BS -10231	7774 113.080

Indexable inserts DCGW

- form D
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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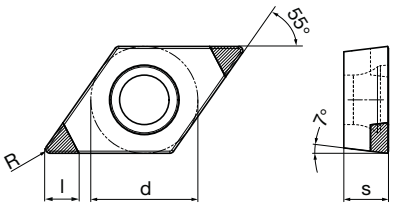

Article no.	**7775**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202S00720N-BS -20226	7775 72.020
6.350	2.38	0.40	2.600	DCGW070204S01520N-BS -20226	7775 72.040
6.350	2.38	0.80	2.700	DCGW070208S02020N-BS -20226	7775 72.080
9.525	3.97	0.20	2.800	DCGW11T302S00720N-BS -20226	7775 113.020
9.525	3.97	0.40	2.600	DCGW11T304S01520N-BS -20226	7775 113.040
9.525	3.97	0.80	2.700	DCGW11T308S02020N-BS -20226	7775 113.080

Article no.	**7776**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202F N-BS -20226	7776 72.020
6.350	2.38	0.40	2.600	DCGW070204F N-BS -20226	7776 72.040
6.350	2.38	0.80	2.700	DCGW070208F N-BS -20226	7776 72.080
9.525	3.97	0.20	2.800	DCGW11T302F N-BS -20226	7776 113.020
9.525	3.97	0.40	2.600	DCGW11T304F N-BS -20226	7776 113.040
9.525	3.97	0.80	2.700	DCGW11T308F N-BS -20226	7776 113.080

Article no.	**7779**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	2.800	DCGW070202E N-BS -20226	7779 72.020
6.350	2.38	0.40	2.600	DCGW070204E N-BS -20226	7779 72.040
6.350	2.38	0.80	2.700	DCGW070208E N-BS -20226	7779 72.080
9.525	3.97	0.20	2.800	DCGW11T302E N-BS -20226	7779 113.020
9.525	3.97	0.40	2.600	DCGW11T304E N-BS -20226	7779 113.040
9.525	3.97	0.80	2.700	DCGW11T308E N-BS -20226	7779 113.080

Indexable inserts DNGA

- form D
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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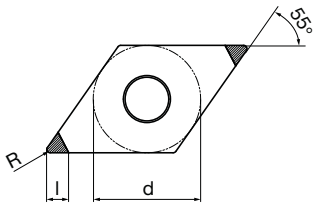

Article no.	**7780**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404S01520N-BS -10660	7780 114.040
9.525	4.76	0.80	2.700	DNGA110408S02020N-BS -10660	7780 114.080
9.525	4.76	1.20	2.800	DNGA110412S02020N-BS -10660	7780 114.120
12.700	4.76	0.40	2.600	DNGA150404S01520N-BS -10660	7780 154.040
12.700	4.76	0.80	2.700	DNGA150408S02020N-BS -10660	7780 154.080
12.700	4.76	1.20	3.100	DNGA150412S02020N-BL -10660	7780 154.120
12.700	6.35	0.40	2.600	DNGA150604S01520N-BS -10660	7780 156.040
12.700	6.35	0.80	2.700	DNGA150608S02020N-BS -10660	7780 156.080
12.700	6.35	1.20	3.100	DNGA150612S02020N-BL -10660	7780 156.120

Article no.	**7781**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404F N-BS -10660	7781 114.040
9.525	4.76	0.80	2.700	DNGA110408F N-BS -10660	7781 114.080
9.525	4.76	1.20	2.800	DNGA110412F N-BS -10660	7781 114.120
12.700	4.76	0.40	2.600	DNGA150404F N-BS -10660	7781 154.040
12.700	4.76	0.80	2.700	DNGA150408F N-BS -10660	7781 154.080
12.700	4.76	1.20	3.100	DNGA150412F N-BL -10660	7781 154.120
12.700	6.35	0.40	2.600	DNGA150604F N-BS -10660	7781 156.040
12.700	6.35	0.80	2.700	DNGA150608F N-BS -10660	7781 156.080
12.700	6.35	1.20	3.100	DNGA150612F N-BL -10660	7781 156.120

Article no.	**7782**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404E N-BS -10660	7782 114.040
9.525	4.76	0.80	2.700	DNGA110408E N-BS -10660	7782 114.080
9.525	4.76	1.20	2.800	DNGA110412E N-BS -10660	7782 114.120
12.700	4.76	0.40	2.600	DNGA150404E N-BS -10660	7782 154.040
12.700	4.76	0.80	2.700	DNGA150408E N-BS -10660	7782 154.080
12.700	4.76	1.20	3.100	DNGA150412E N-BL -10660	7782 154.120
12.700	6.35	0.40	2.600	DNGA150604E N-BS -10660	7782 156.040
12.700	6.35	0.80	2.700	DNGA150608E N-BS -10660	7782 156.080
12.700	6.35	1.20	3.100	DNGA150612E N-BL -10660	7782 156.120

Indexable inserts DNGA

- form D
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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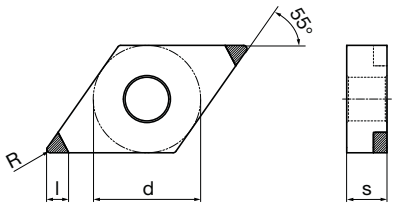

Article no.	**7783**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404S01520N-BS -10223	7783 114.040
9.525	4.76	0.80	2.700	DNGA110408S02020N-BS -10223	7783 114.080
9.525	4.76	1.20	2.800	DNGA110412S02020N-BS -10223	7783 114.120
12.700	4.76	0.40	2.600	DNGA150404S01520N-BS -10223	7783 154.040
12.700	4.76	0.80	2.700	DNGA150408S02020N-BS -10223	7783 154.080
12.700	4.76	1.20	3.100	DNGA150412S02020N-BL -10223	7783 154.120
12.700	6.35	0.40	2.600	DNGA150604S01520N-BS -10223	7783 156.040
12.700	6.35	0.80	2.700	DNGA150608S02020N-BS -10223	7783 156.080
12.700	6.35	1.20	3.100	DNGA150612S02020N-BL -10223	7783 156.120

Article no.	**7784**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404F N-BS -10223	7784 114.040
9.525	4.76	0.80	2.700	DNGA110408F N-BS -10223	7784 114.080
9.525	4.76	1.20	2.800	DNGA110412F N-BS -10223	7784 114.120
12.700	4.76	0.40	2.600	DNGA150404F N-BS -10223	7784 154.040
12.700	4.76	0.80	2.700	DNGA150408F N-BS -10223	7784 154.080
12.700	4.76	1.20	3.100	DNGA150412F N-BL -10223	7784 154.120
12.700	6.35	0.40	2.600	DNGA150604F N-BS -10223	7784 156.040
12.700	6.35	0.80	2.700	DNGA150608F N-BS -10223	7784 156.080
12.700	6.35	1.20	3.100	DNGA150612F N-BL -10223	7784 156.120

Article no.	**7785**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404E N-BS -10223	7785 114.040
9.525	4.76	0.80	2.700	DNGA110408E N-BS -10223	7785 114.080
9.525	4.76	1.20	2.800	DNGA110412E N-BS -10223	7785 114.120
12.700	4.76	0.40	2.600	DNGA150404E N-BS -10223	7785 154.040
12.700	4.76	0.80	2.700	DNGA150408E N-BS -10223	7785 154.080
12.700	4.76	1.20	3.100	DNGA150412E N-BL -10223	7785 154.120
12.700	6.35	0.40	2.600	DNGA150604E N-BS -10223	7785 156.040
12.700	6.35	0.80	2.700	DNGA150608E N-BS -10223	7785 156.080
12.700	6.35	1.20	3.100	DNGA150612E N-BL -10223	7785 156.120

Indexable inserts DNGA

- form D
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	•
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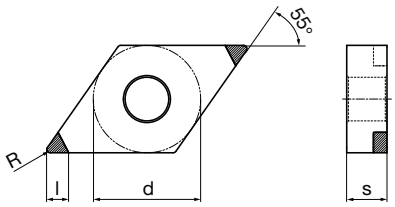

Article no.	**7786**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404S01520N-BS -10231	7786 114.040
9.525	4.76	0.80	2.700	DNGA110408S02020N-BS -10231	7786 114.080
9.525	4.76	1.20	2.800	DNGA110412S02020N-BS -10231	7786 114.120
12.700	4.76	0.40	2.600	DNGA150404S01520N-BS -10231	7786 154.040
12.700	4.76	0.80	2.700	DNGA150408S02020N-BS -10231	7786 154.080
12.700	4.76	1.20	3.100	DNGA150412S02020N-BL -10231	7786 154.120
12.700	6.35	0.40	2.600	DNGA150604S01520N-BS -10231	7786 156.040
12.700	6.35	0.80	2.700	DNGA150608S02020N-BS -10231	7786 156.080
12.700	6.35	1.20	3.100	DNGA150612S02020N-BL -10231	7786 156.120

Article no.	**7787**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404F N-BS -10231	7787 114.040
9.525	4.76	0.80	2.700	DNGA110408F N-BS -10231	7787 114.080
9.525	4.76	1.20	2.800	DNGA110412F N-BS -10231	7787 114.120
12.700	4.76	0.40	2.600	DNGA150404F N-BS -10231	7787 154.040
12.700	4.76	0.80	2.700	DNGA150408F N-BS -10231	7787 154.080
12.700	4.76	1.20	3.100	DNGA150412F N-BL -10231	7787 154.120
12.700	6.35	0.40	2.600	DNGA150604F N-BS -10231	7787 156.040
12.700	6.35	0.80	2.700	DNGA150608F N-BS -10231	7787 156.080
12.700	6.35	1.20	3.100	DNGA150612F N-BL -10231	7787 156.120

Article no.	**7788**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404E N-BS -10231	7788 114.040
9.525	4.76	0.80	2.700	DNGA110408E N-BS -10231	7788 114.080
9.525	4.76	1.20	2.800	DNGA110412E N-BS -10231	7788 114.120
12.700	4.76	0.40	2.600	DNGA150404E N-BS -10231	7788 154.040
12.700	4.76	0.80	2.700	DNGA150408E N-BS -10231	7788 154.080
12.700	4.76	1.20	3.100	DNGA150412E N-BL -10231	7788 154.120
12.700	6.35	0.40	2.600	DNGA150604E N-BS -10231	7788 156.040
12.700	6.35	0.80	2.700	DNGA150608E N-BS -10231	7788 156.080
12.700	6.35	1.20	3.100	DNGA150612E N-BL -10231	7788 156.120

Indexable inserts DNGA

- form D
- with hole clamping
- with two cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	○
M	○
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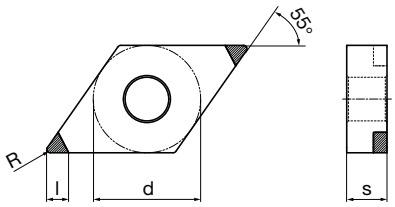

Article no.	**7789**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404S01520N-BS -20226	7789 114.040
9.525	4.76	0.80	2.700	DNGA110408S02020N-BS -20226	7789 114.080
9.525	4.76	1.20	2.800	DNGA110412S02020N-BS -20226	7789 114.120
12.700	4.76	0.40	2.600	DNGA150404S01520N-BS -20226	7789 154.040
12.700	4.76	0.80	2.700	DNGA150408S02020N-BS -20226	7789 154.080
12.700	4.76	1.20	3.100	DNGA150412S02020N-BL -20226	7789 154.120
12.700	6.35	0.40	2.600	DNGA150604S01520N-BS -20226	7789 156.040
12.700	6.35	0.80	2.700	DNGA150608S02020N-BS -20226	7789 156.080
12.700	6.35	1.20	3.100	DNGA150612S02020N-BL -20226	7789 156.120

Article no.	**7790**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404F N-BS -20226	7790 114.040
9.525	4.76	0.80	2.700	DNGA110408F N-BS -20226	7790 114.080
9.525	4.76	1.20	2.800	DNGA110412F N-BS -20226	7790 114.120
12.700	4.76	0.40	2.600	DNGA150404F N-BS -20226	7790 154.040
12.700	4.76	0.80	2.700	DNGA150408F N-BS -20226	7790 154.080
12.700	4.76	1.20	3.100	DNGA150412F N-BL -20226	7790 154.120
12.700	6.35	0.40	2.600	DNGA150604F N-BS -20226	7790 156.040
12.700	6.35	0.80	2.700	DNGA150608F N-BS -20226	7790 156.080
12.700	6.35	1.20	3.100	DNGA150612F N-BL -20226	7790 156.120

Article no.	**7791**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.600	DNGA110404E N-BS -20226	7791 114.040
9.525	4.76	0.80	2.700	DNGA110408E N-BS -20226	7791 114.080
9.525	4.76	1.20	2.800	DNGA110412E N-BS -20226	7791 114.120
12.700	4.76	0.40	2.600	DNGA150404E N-BS -20226	7791 154.040
12.700	4.76	0.80	2.700	DNGA150408E N-BS -20226	7791 154.080
12.700	4.76	1.20	3.100	DNGA150412E N-BL -20226	7791 154.120
12.700	6.35	0.40	2.600	DNGA150604E N-BS -20226	7791 156.040
12.700	6.35	0.80	2.700	DNGA150608E N-BS -20226	7791 156.080
12.700	6.35	1.20	3.100	DNGA150612E N-BL -20226	7791 156.120

Indexable inserts TCGW

- form T
- with screw clamping
- with three cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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M	○
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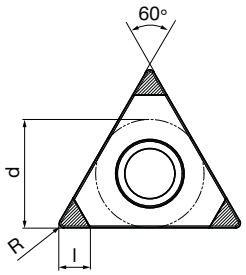

Article no.	7445
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204S01520N-CS -10660	7445 92.040
5.560	2.38	0.80	2.900	TCGW090208S02020N-CS -10660	7445 92.080
6.350	2.38	0.20	2.900	TCGW110202S00720N-CS -10660	7445 112.020
6.350	2.38	0.40	2.800	TCGW110204S01520N-CS -10660	7445 112.040
6.350	2.38	0.80	2.900	TCGW110208S02020N-CS -10660	7445 112.080
9.525	3.97	0.40	2.700	TCGW16T304S01520N-CS -10660	7445 163.040
9.525	3.97	0.80	2.900	TCGW16T308S02020N-CS -10660	7445 163.080

Article no.	7446
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204F N-CS -10660	7446 92.040
5.560	2.38	0.80	2.900	TCGW090208F N-CS -10660	7446 92.080
6.350	2.38	0.20	2.900	TCGW110202F N-CS -10660	7446 112.020
6.350	2.38	0.40	2.800	TCGW110204F N-CS -10660	7446 112.040
6.350	2.38	0.80	2.900	TCGW110208F N-CS -10660	7446 112.080
9.525	3.97	0.40	2.700	TCGW16T304F N-CS -10660	7446 163.040
9.525	3.97	0.80	2.900	TCGW16T308F N-CS -10660	7446 163.080

Article no.	7447
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204E N-CS -10660	7447 92.040
5.560	2.38	0.80	2.900	TCGW090208E N-CS -10660	7447 92.080
6.350	2.38	0.20	2.900	TCGW110202E N-CS -10660	7447 112.020
6.350	2.38	0.40	2.800	TCGW110204E N-CS -10660	7447 112.040
6.350	2.38	0.80	2.900	TCGW110208E N-CS -10660	7447 112.080
9.525	3.97	0.40	2.700	TCGW16T304E N-CS -10660	7447 163.040
9.525	3.97	0.80	2.900	TCGW16T308E N-CS -10660	7447 163.080

Indexable inserts TCGW

- form T
- with screw clamping
- with three cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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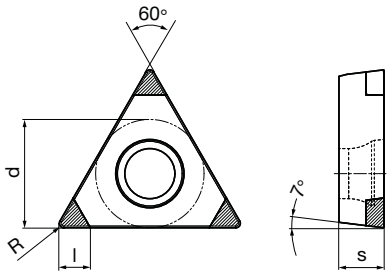

Article no.	7448
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204S01520N-CS -10223	7448 92.040
5.560	2.38	0.80	2.900	TCGW090208S02020N-CS -10223	7448 92.080
6.350	2.38	0.20	2.900	TCGW110202S00720N-CS -10223	7448 112.020
6.350	2.38	0.40	2.800	TCGW110204S01520N-CS -10223	7448 112.040
6.350	2.38	0.80	2.900	TCGW110208S02020N-CS -10223	7448 112.080
9.525	3.97	0.40	2.700	TCGW16T304S01520N-CS -10223	7448 163.040
9.525	3.97	0.80	2.900	TCGW16T308S02020N-CS -10223	7448 163.080

Article no.	7449
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204F N-CS -10223	7449 92.040
5.560	2.38	0.80	2.900	TCGW090208F N-CS -10223	7449 92.080
6.350	2.38	0.20	2.900	TCGW110202F N-CS -10223	7449 112.020
6.350	2.38	0.40	2.800	TCGW110204F N-CS -10223	7449 112.040
6.350	2.38	0.80	2.900	TCGW110208F N-CS -10223	7449 112.080
9.525	3.97	0.40	2.700	TCGW16T304F N-CS -10223	7449 163.040
9.525	3.97	0.80	2.900	TCGW16T308F N-CS -10223	7449 163.080

Article no.	7450
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204E N-CS -10223	7450 92.040
5.560	2.38	0.80	2.900	TCGW090208E N-CS -10223	7450 92.080
6.350	2.38	0.20	2.900	TCGW110202E N-CS -10223	7450 112.020
6.350	2.38	0.40	2.800	TCGW110204E N-CS -10223	7450 112.040
6.350	2.38	0.80	2.900	TCGW110208E N-CS -10223	7450 112.080
9.525	3.97	0.40	2.700	TCGW16T304E N-CS -10223	7450 163.040
9.525	3.97	0.80	2.900	TCGW16T308E N-CS -10223	7450 163.080

Indexable inserts TCGW

- form T
- with screw clamping
- with three cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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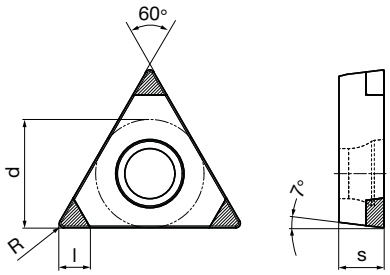

Article no.	**7451**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204S01520N-CS -10231	7451 92.040
5.560	2.38	0.80	2.900	TCGW090208S02020N-CS -10231	7451 92.080
6.350	2.38	0.20	2.900	TCGW110202S00720N-CS -10231	7451 112.020
6.350	2.38	0.40	2.800	TCGW110204S01520N-CS -10231	7451 112.040
6.350	2.38	0.80	2.900	TCGW110208S02020N-CS -10231	7451 112.080
9.525	3.97	0.40	2.700	TCGW16T304S01520N-CS -10231	7451 163.040
9.525	3.97	0.80	2.900	TCGW16T308S02020N-CS -10231	7451 163.080

Article no.	**7452**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204F N-CS -10231	7452 92.040
5.560	2.38	0.80	2.900	TCGW090208F N-CS -10231	7452 92.080
6.350	2.38	0.20	2.900	TCGW110202F N-CS -10231	7452 112.020
6.350	2.38	0.40	2.800	TCGW110204F N-CS -10231	7452 112.040
6.350	2.38	0.80	2.900	TCGW110208F N-CS -10231	7452 112.080
9.525	3.97	0.40	2.700	TCGW16T304F N-CS -10231	7452 163.040
9.525	3.97	0.80	2.900	TCGW16T308F N-CS -10231	7452 163.080

Article no.	**7453**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204E N-CS -10231	7453 92.040
5.560	2.38	0.80	2.900	TCGW090208E N-CS -10231	7453 92.080
6.350	2.38	0.20	2.900	TCGW110202E N-CS -10231	7453 112.020
6.350	2.38	0.40	2.800	TCGW110204E N-CS -10231	7453 112.040
6.350	2.38	0.80	2.900	TCGW110208E N-CS -10231	7453 112.080
9.525	3.97	0.40	2.700	TCGW16T304E N-CS -10231	7453 163.040
9.525	3.97	0.80	2.900	TCGW16T308E N-CS -10231	7453 163.080

Indexable inserts TCGW

- form T
- with screw clamping
- with three cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

P	○
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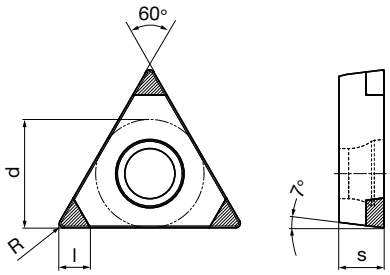

Article no.	**7454**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204S01520N-CS -20226	7454 92.040
5.560	2.38	0.80	2.900	TCGW090208S02020N-CS -20226	7454 92.080
6.350	2.38	0.20	2.900	TCGW110202S00720N-CS -20226	7454 112.020
6.350	2.38	0.40	2.800	TCGW110204S01520N-CS -20226	7454 112.040
6.350	2.38	0.80	2.900	TCGW110208S02020N-CS -20226	7454 112.080
9.525	3.97	0.40	2.700	TCGW16T304S01520N-CS -20226	7454 163.040
9.525	3.97	0.80	2.900	TCGW16T308S02020N-CS -20226	7454 163.080

Article no.	**7455**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204F N-CS -20226	7455 92.040
5.560	2.38	0.80	2.900	TCGW090208F N-CS -20226	7455 92.080
6.350	2.38	0.20	2.900	TCGW110202F N-CS -20226	7455 112.020
6.350	2.38	0.40	2.800	TCGW110204F N-CS -20226	7455 112.040
6.350	2.38	0.80	2.900	TCGW110208F N-CS -20226	7455 112.080
9.525	3.97	0.40	2.700	TCGW16T304F N-CS -20226	7455 163.040
9.525	3.97	0.80	2.900	TCGW16T308F N-CS -20226	7455 163.080

Article no.	**7456**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
5.560	2.38	0.40	2.800	TCGW090204E N-CS -20226	7456 92.040
5.560	2.38	0.80	2.900	TCGW090208E N-CS -20226	7456 92.080
6.350	2.38	0.20	2.900	TCGW110202E N-CS -20226	7456 112.020
6.350	2.38	0.40	2.800	TCGW110204E N-CS -20226	7456 112.040
6.350	2.38	0.80	2.900	TCGW110208E N-CS -20226	7456 112.080
9.525	3.97	0.40	2.700	TCGW16T304E N-CS -20226	7456 163.040
9.525	3.97	0.80	2.900	TCGW16T308E N-CS -20226	7456 163.080

Indexable inserts TNGA

- form T
- with hole clamping
- with three cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	•
M	○
K	○
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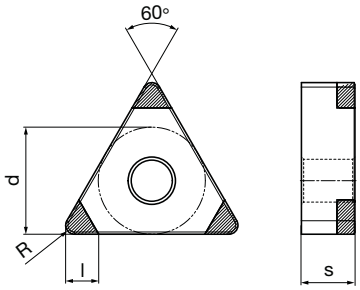

Article no.	**7804**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404S01520N-CS -10660	7804 164.040
9.525	4.76	0.80	2.900	TNGA160408S02020N-CS -10660	7804 164.080
9.525	4.76	1.20	3.200	TNGA160412S02020N-CL -10660	7804 164.120
9.525	4.76	1.60	3.400	TNGA160416S02020N-CL -10660	7804 164.160
9.525	4.76	2.00	3.600	TNGA160420S02020N-CL -10660	7804 164.200
9.525	4.76	2.50	3.700	TNGA160425S02020N-CL -10660	7804 164.250

Article no.	**7805**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404F N-CS -10660	7805 164.040
9.525	4.76	0.80	2.900	TNGA160408F N-CS -10660	7805 164.080
9.525	4.76	1.20	3.200	TNGA160412F N-CL -10660	7805 164.120
9.525	4.76	1.60	3.400	TNGA160416F N-CL -10660	7805 164.160
9.525	4.76	2.00	3.600	TNGA160420F N-CL -10660	7805 164.200
9.525	4.76	2.50	3.700	TNGA160425F N-CL -10660	7805 164.250

Article no.	**7806**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404E N-CS -10660	7806 164.040
9.525	4.76	0.80	2.900	TNGA160408E N-CS -10660	7806 164.080
9.525	4.76	1.20	3.200	TNGA160412E N-CL -10660	7806 164.120
9.525	4.76	1.60	3.400	TNGA160416E N-CL -10660	7806 164.160
9.525	4.76	2.00	3.600	TNGA160420E N-CL -10660	7806 164.200
9.525	4.76	2.50	3.700	TNGA160425E N-CL -10660	7806 164.250

Indexable inserts TNGA

- form T
- with hole clamping
- with three cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	•
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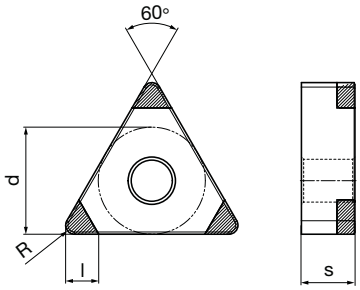

Article no.	**7807**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404S01520N-CS -10223	7807 164.040
9.525	4.76	0.80	2.900	TNGA160408S02020N-CS -10223	7807 164.080
9.525	4.76	1.20	3.200	TNGA160412S02020N-CL -10223	7807 164.120
9.525	4.76	1.60	3.400	TNGA160416S02020N-CL -10223	7807 164.160
9.525	4.76	2.00	3.600	TNGA160420S02020N-CL -10223	7807 164.200
9.525	4.76	2.50	3.700	TNGA160425S02020N-CL -10223	7807 164.250

Article no.	**7808**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404F N-CS -10223	7808 164.040
9.525	4.76	0.80	2.900	TNGA160408F N-CS -10223	7808 164.080
9.525	4.76	1.20	3.200	TNGA160412F N-CL -10223	7808 164.120
9.525	4.76	1.60	3.400	TNGA160416F N-CL -10223	7808 164.160
9.525	4.76	2.00	3.600	TNGA160420F N-CL -10223	7808 164.200
9.525	4.76	2.50	3.700	TNGA160425F N-CL -10223	7808 164.250

Article no.	**7809**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404E N-CS -10223	7809 164.040
9.525	4.76	0.80	2.900	TNGA160408E N-CS -10223	7809 164.080
9.525	4.76	1.20	3.200	TNGA160412E N-CL -10223	7809 164.120
9.525	4.76	1.60	3.400	TNGA160416E N-CL -10223	7809 164.160
9.525	4.76	2.00	3.600	TNGA160420E N-CL -10223	7809 164.200
9.525	4.76	2.50	3.700	TNGA160425E N-CL -10223	7809 164.250

Indexable inserts TNGA

- form T
- with hole clamping
- with three cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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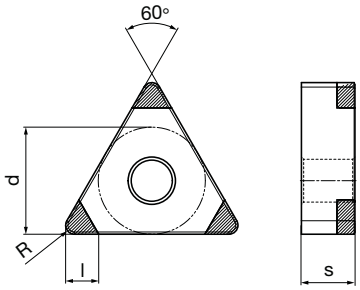

Article no.	**7810**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404S01520N-CS -10231	7810 164.040
9.525	4.76	0.80	2.900	TNGA160408S02020N-CS -10231	7810 164.080
9.525	4.76	1.20	3.200	TNGA160412S02020N-CL -10231	7810 164.120
9.525	4.76	1.60	3.400	TNGA160416S02020N-CL -10231	7810 164.160
9.525	4.76	2.00	3.600	TNGA160420S02020N-CL -10231	7810 164.200
9.525	4.76	2.50	3.700	TNGA160425S02020N-CL -10231	7810 164.250

Article no.	**7811**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404F N-CS -10231	7811 164.040
9.525	4.76	0.80	2.900	TNGA160408F N-CS -10231	7811 164.080
9.525	4.76	1.20	3.200	TNGA160412F N-CL -10231	7811 164.120
9.525	4.76	1.60	3.400	TNGA160416F N-CL -10231	7811 164.160
9.525	4.76	2.00	3.600	TNGA160420F N-CL -10231	7811 164.200
9.525	4.76	2.50	3.700	TNGA160425F N-CL -10231	7811 164.250

Article no.	**7812**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404E N-CS -10231	7812 164.040
9.525	4.76	0.80	2.900	TNGA160408E N-CS -10231	7812 164.080
9.525	4.76	1.20	3.200	TNGA160412E N-CL -10231	7812 164.120
9.525	4.76	1.60	3.400	TNGA160416E N-CL -10231	7812 164.160
9.525	4.76	2.00	3.600	TNGA160420E N-CL -10231	7812 164.200
9.525	4.76	2.50	3.700	TNGA160425E N-CL -10231	7812 164.250

Indexable inserts TNGA

- form T
- with hole clamping
- with three cutting edges

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	○
M	○
K	●
N	○
S	●
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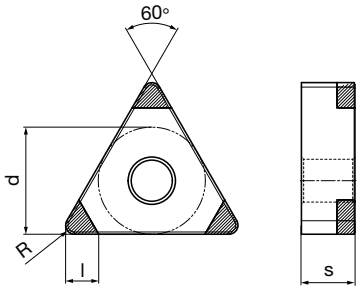

Article no.	**7813**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404S01520N-CS -20226	7813 164.040
9.525	4.76	0.80	2.900	TNGA160408S02020N-CS -20226	7813 164.080
9.525	4.76	1.20	3.200	TNGA160412S02020N-CL -20226	7813 164.120
9.525	4.76	1.60	3.400	TNGA160416S02020N-CL -20226	7813 164.160
9.525	4.76	2.00	3.600	TNGA160420S02020N-CL -20226	7813 164.200
9.525	4.76	2.50	3.700	TNGA160425S02020N-CL -20226	7813 164.250

Article no.	**7814**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404F N-CS -20226	7814 164.040
9.525	4.76	0.80	2.900	TNGA160408F N-CS -20226	7814 164.080
9.525	4.76	1.20	3.200	TNGA160412F N-CL -20226	7814 164.120
9.525	4.76	1.60	3.400	TNGA160416F N-CL -20226	7814 164.160
9.525	4.76	2.00	3.600	TNGA160420F N-CL -20226	7814 164.200
9.525	4.76	2.50	3.700	TNGA160425F N-CL -20226	7814 164.250

Article no.	**7815**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	4.76	0.40	2.700	TNGA160404E N-CS -20226	7815 164.040
9.525	4.76	0.80	2.900	TNGA160408E N-CS -20226	7815 164.080
9.525	4.76	1.20	3.200	TNGA160412E N-CL -20226	7815 164.120
9.525	4.76	1.60	3.400	TNGA160416E N-CL -20226	7815 164.160
9.525	4.76	2.00	3.600	TNGA160420E N-CL -20226	7815 164.200
9.525	4.76	2.50	3.700	TNGA160425E N-CL -20226	7815 164.250

Indexable inserts VBGW

- form V
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	•
M	○
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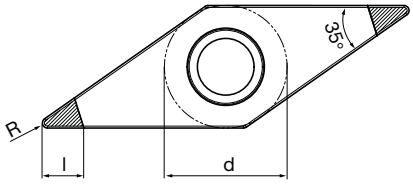

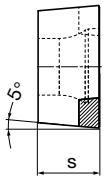

Article no.	7816
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202S00720N-BL -10660	7816 112.020
6.350	2.38	0.40	3.200	VBGW110204S01520N-BL -10660	7816 112.040
6.350	2.38	0.80	3.300	VBGW110208S02020N-BL -10660	7816 112.080
9.525	4.76	0.20	3.100	VBGW160402S00720N-BL -10660	7816 164.020
9.525	4.76	0.40	3.200	VBGW160404S01520N-BL -10660	7816 164.040
9.525	4.76	0.80	3.300	VBGW160408S02020N-BL -10660	7816 164.080

Article no.	7817
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202F N-BL -10660	7817 112.020
6.350	2.38	0.40	3.200	VBGW110204F N-BL -10660	7817 112.040
6.350	2.38	0.80	3.300	VBGW110208F N-BL -10660	7817 112.080
9.525	4.76	0.20	3.100	VBGW160402F N-BL -10660	7817 164.020
9.525	4.76	0.40	3.200	VBGW160404F N-BL -10660	7817 164.040
9.525	4.76	0.80	3.300	VBGW160408F N-BL -10660	7817 164.080

Article no.	7818
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202E N-BL -10660	7818 112.020
6.350	2.38	0.40	3.200	VBGW110204E N-BL -10660	7818 112.040
6.350	2.38	0.80	3.300	VBGW110208E N-BL -10660	7818 112.080
9.525	4.76	0.20	3.100	VBGW160402E N-BL -10660	7818 164.020
9.525	4.76	0.40	3.200	VBGW160404E N-BL -10660	7818 164.040
9.525	4.76	0.80	3.300	VBGW160408E N-BL -10660	7818 164.080

Indexable inserts VBGW

- form V
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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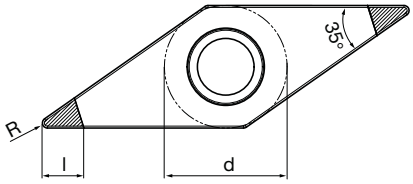

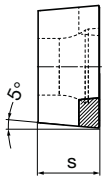

Article no.	7819
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202S00720N-BL -10223	7819 112.020
6.350	2.38	0.40	3.200	VBGW110204S01520N-BL -10223	7819 112.040
6.350	2.38	0.80	3.300	VBGW110208S02020N-BL -10223	7819 112.080
9.525	4.76	0.20	3.100	VBGW160402S00720N-BL -10223	7819 164.020
9.525	4.76	0.40	3.200	VBGW160404S01520N-BL -10223	7819 164.040
9.525	4.76	0.80	3.300	VBGW160408S02020N-BL -10223	7819 164.080

Article no.	7820
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202F N-BL -10223	7820 112.020
6.350	2.38	0.40	3.200	VBGW110204F N-BL -10223	7820 112.040
6.350	2.38	0.80	3.300	VBGW110208F N-BL -10223	7820 112.080
9.525	4.76	0.20	3.100	VBGW160402F N-BL -10223	7820 164.020
9.525	4.76	0.40	3.200	VBGW160404F N-BL -10223	7820 164.040
9.525	4.76	0.80	3.300	VBGW160408F N-BL -10223	7820 164.080

Article no.	7821
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202E N-BL -10223	7821 112.020
6.350	2.38	0.40	3.200	VBGW110204E N-BL -10223	7821 112.040
6.350	2.38	0.80	3.300	VBGW110208E N-BL -10223	7821 112.080
9.525	4.76	0.20	3.100	VBGW160402E N-BL -10223	7821 164.020
9.525	4.76	0.40	3.200	VBGW160404E N-BL -10223	7821 164.040
9.525	4.76	0.80	3.300	VBGW160408E N-BL -10223	7821 164.080

Indexable inserts VBGW

- form V
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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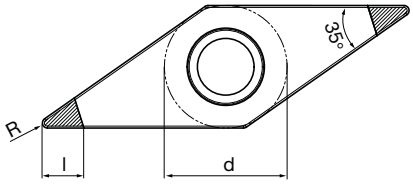

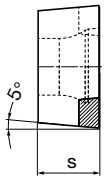

Article no.	7822
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202S00720N-BL -10231	7822 112.020
6.350	2.38	0.40	3.200	VBGW110204S01520N-BL -10231	7822 112.040
6.350	2.38	0.80	3.300	VBGW110208S02020N-BL -10231	7822 112.080
9.525	4.76	0.20	3.100	VBGW160402S00720N-BL -10231	7822 164.020
9.525	4.76	0.40	3.200	VBGW160404S01520N-BL -10231	7822 164.040
9.525	4.76	0.80	3.300	VBGW160408S02020N-BL -10231	7822 164.080

Article no.	7823
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202F N-BL -10231	7823 112.020
6.350	2.38	0.40	3.200	VBGW110204F N-BL -10231	7823 112.040
6.350	2.38	0.80	3.300	VBGW110208F N-BL -10231	7823 112.080
9.525	4.76	0.20	3.100	VBGW160402F N-BL -10231	7823 164.020
9.525	4.76	0.40	3.200	VBGW160404F N-BL -10231	7823 164.040
9.525	4.76	0.80	3.300	VBGW160408F N-BL -10231	7823 164.080

Article no.	7824
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202E N-BL -10231	7824 112.020
6.350	2.38	0.40	3.200	VBGW110204E N-BL -10231	7824 112.040
6.350	2.38	0.80	3.300	VBGW110208E N-BL -10231	7824 112.080
9.525	4.76	0.20	3.100	VBGW160402E N-BL -10231	7824 164.020
9.525	4.76	0.40	3.200	VBGW160404E N-BL -10231	7824 164.040
9.525	4.76	0.80	3.300	VBGW160408E N-BL -10231	7824 164.080

Indexable inserts VBGW

- form V
- with screw clamping
- with two cutting edges

order clamping screw Art. no. 6128 separately, see page 78

Tool material	PCBN
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	○
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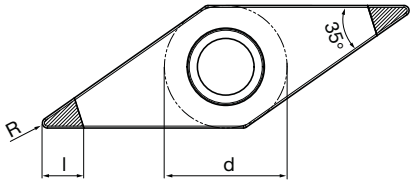
N	○
S	●
H	○



Article no.	7825
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202S00720N-BL -20226	7825 112.020
6.350	2.38	0.40	3.200	VBGW110204S01520N-BL -20226	7825 112.040
6.350	2.38	0.80	3.300	VBGW110208S02020N-BL -20226	7825 112.080
9.525	4.76	0.20	3.100	VBGW160402S00720N-BL -20226	7825 164.020
9.525	4.76	0.40	3.200	VBGW160404S01520N-BL -20226	7825 164.040
9.525	4.76	0.80	3.300	VBGW160408S02020N-BL -20226	7825 164.080

Article no.	7826
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202F N-BL -20226	7826 112.020
6.350	2.38	0.40	3.200	VBGW110204F N-BL -20226	7826 112.040
6.350	2.38	0.80	3.300	VBGW110208F N-BL -20226	7826 112.080
9.525	4.76	0.20	3.100	VBGW160402F N-BL -20226	7826 164.020
9.525	4.76	0.40	3.200	VBGW160404F N-BL -20226	7826 164.040
9.525	4.76	0.80	3.300	VBGW160408F N-BL -20226	7826 164.080

Article no.	7827
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
6.350	2.38	0.20	3.100	VBGW110202E N-BL -20226	7827 112.020
6.350	2.38	0.40	3.200	VBGW110204E N-BL -20226	7827 112.040
6.350	2.38	0.80	3.300	VBGW110208E N-BL -20226	7827 112.080
9.525	4.76	0.20	3.100	VBGW160402E N-BL -20226	7827 164.020
9.525	4.76	0.40	3.200	VBGW160404E N-BL -20226	7827 164.040
9.525	4.76	0.80	3.300	VBGW160408E N-BL -20226	7827 164.080

Indexable inserts RNGN

- form R
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

P	•
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N	○
S	○
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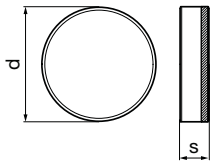

Article no.	**7461**
Cutting direction	left and right

d	s	ISO	Order no.
mm	mm		
12.700	3.18	RNGN120300S02020N-FF -10223	7461 123.000

Indexable inserts RNGN

- form R
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

P	○
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N	○
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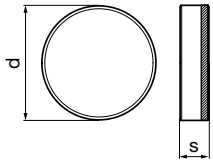

Article no.	**7462**
Cutting direction	left and right

d	s	ISO	Order no.
mm	mm		
12.700	3.18	RNGN120300S02020N-FF -20226	7462 123.000

Indexable inserts SNGN

- form S
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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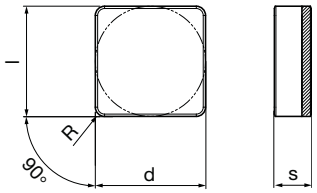

Article no.	**7466**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.18	0.80	9.525	SNGN090308S02020N-FF -10223	7466 93.080

Indexable inserts SNGN

- form S
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

P	○
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N	○
S	•
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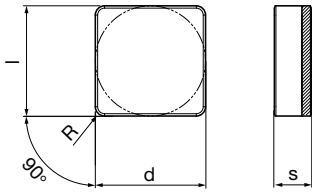

Article no.	**7467**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.18	0.80	9.525	SNGN090308S02020N-FF -20226	7467 93.080

Indexable inserts TNGN

- form T
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	•
M	•
K	○
N	○
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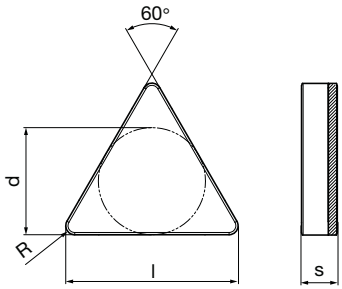

Article no.	**7471**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.18	0.80	16.500	TNGN160308S02020N-FF -10223	7471 163.080

Indexable inserts TNGN

- form T
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	○
M	○
K	•
N	○
S	•
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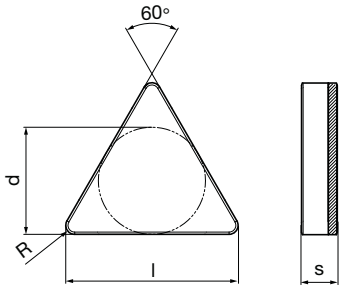

Article no.	**7472**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.18	0.80	16.500	TNGN160308S02020N-FF -20226	7472 163.080

Indexable inserts RNGN

- form R
- for top clamping
- Solid

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	○
M	○
K	●
N	○
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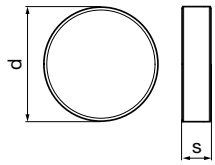

Article no.	**7476**
Cutting direction	left and right

d	s	ISO	Order no.
mm	mm		
9.525	3.18	RNGN090300S02020N-SF -301500	7476 93.000
12.700	3.18	RNGN120300S02020N-SF -301500	7476 123.000
12.700	4.76	RNGN120400S02020N-SF -301500	7476 124.000

Indexable inserts CNGN

- form C
- for top clamping
- Solid

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

P	○
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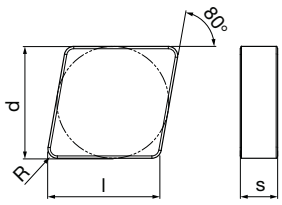

Article no.	**7477**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.18	0.80	9.670	CNGN090308S02020N-SF -301500	7477 93.080
9.525	3.18	1.20	9.670	CNGN090312S02020N-SF -301500	7477 93.120
12.700	4.76	1.20	12.900	CNGN120412S02020N-SF -301500	7477 124.120
12.700	4.76	1.60	12.900	CNGN120416S02020N-SF -301500	7477 124.160

Indexable inserts SNGN

- form S
- for top clamping
- Solid

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	○
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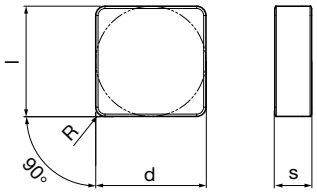

Article no.	**7478**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
9.525	3.18	0.80	9.525	SNGN090308S02020N-SF -301500	7478 93.080
9.525	3.18	1.20	9.525	SNGN090312S02020N-SF -301500	7478 93.120
12.700	4.76	0.80	12.700	SNGN120408S02020N-SF -301500	7478 124.080
12.700	4.76	1.20	12.700	SNGN120412S02020N-SF -301500	7478 124.120
12.700	4.76	1.60	12.700	SNGN120416S02020N-SF -301500	7478 124.160

Indexable inserts TCCN

- form T
- for system GP 100
- Full Face

Tool material	**Solid carbide**
Standard	DIN ISO 6987
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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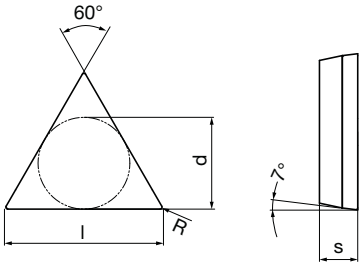

Article no.	**7711**
Cutting direction	left and right

d	b	r	l6	ISO	Order no.
mm	mm	mm	mm		
3.968	1.59	0.20	6.900	TCCN060102F N-SF	7711 61.020
3.968	1.59	0.40	6.900	TCCN060104F N-SF	7711 61.040

Indexable inserts TCCN

- form T
- for system GP 100
- Full Face

Tool material	**PCD**
Standard	DIN ISO 16463
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

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N	•
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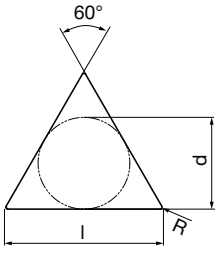


Article no.	**7712**
Cutting direction	left and right

d	b	r	l6	ISO	Order no.
mm	mm	mm	mm		
3.968	1.59	0.20	6.900	TCCN060102F N-FF 30221	7712 61.020
3.968	1.59	0.40	6.900	TCCN060104F N-FF 30221	7712 61.040

Indexable inserts HCXX

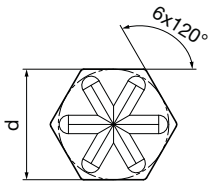
- form H
- for clamping finger
- Full Face

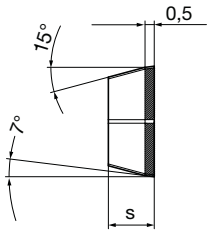
Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	●
M	○
K	○
N	○
S	○
H	●





Article no.	**7479**
Cutting direction	left and right

d	s	ISO	Order no.
mm	mm		
6.000	2.49	HCXX062500F N-FF -10660	7479 60.000
6.000	2.49	HCXX062500E N-FF -10660	7479 60.001
6.000	2.49	HCXX062500S01020N-FF -10660	7479 60.002

Indexable inserts HCXX

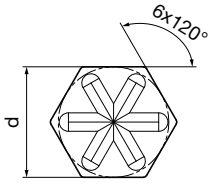
- form H
- for clamping finger
- Full Face

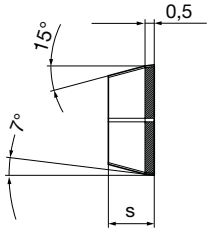
Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR

Cutting data page 80

P	●
M	○
K	
N	○
S	○
H	●





Article no.	**7480**
Cutting direction	left and right

d	s	ISO	Order no.
mm	mm		
6.000	2.49	HCXX062500F N-FF -20228	7480 60.000
6.000	2.49	HCXX062500E N-FF -20228	7480 60.001
6.000	2.49	HCXX062500S01020N-FF -20228	7480 60.002

Indexable inserts TCCN

- form T
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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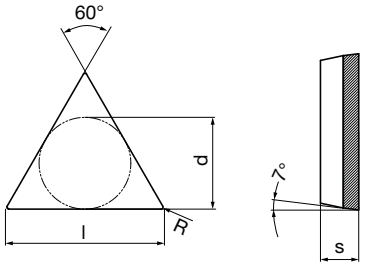

Article no.	**7733**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102F N-FF -10229	7733 61.020
3.970	1.59	0.40	6.900	TCCN060104F N-FF -10229	7733 61.040
5.560	2.38	0.40	9.600	TCCN090204F N-FF -10229	7733 92.040

Article no.	**7734**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102E N-FF -10229	7734 61.020
3.970	1.59	0.40	6.900	TCCN060104E N-FF -10229	7734 61.040
3.970	1.59	1.00	6.900	TCCN060110E N-FF -10229	7734 61.100
5.560	2.38	0.40	9.600	TCCN090204E N-FF -10229	7734 92.040

Article no.	**7735**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102S01020N-FF -10229	7735 61.020
3.970	1.59	0.40	6.900	TCCN060104S01020N-FF -10229	7735 61.040
5.560	2.38	0.40	9.600	TCCN090204S01020N-FF -10229	7735 92.040

Indexable inserts TCCN

- form T
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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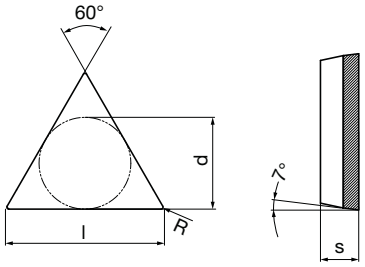

Article no.	**7736**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102F N-FF -10660	7736 61.020
3.970	1.59	0.40	6.900	TCCN060104F N-FF -10660	7736 61.040
5.560	2.38	0.40	9.600	TCCN090204F N-FF -10660	7736 92.040

Article no.	**7737**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102E N-FF -10660	7737 61.020
3.970	1.59	0.40	6.900	TCCN060104E N-FF -10660	7737 61.040
3.970	1.59	1.00	6.900	TCCN060110E N-FF -10660	7737 61.100
5.560	2.38	0.40	9.600	TCCN090204E N-FF -10660	7737 92.040

Article no.	**7738**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102S01020N-FF -10660	7738 61.020
3.970	1.59	0.40	6.900	TCCN060104S01020N-FF -10660	7738 61.040
5.560	2.38	0.40	9.600	TCCN090204S01020N-FF -10660	7738 92.040

Indexable inserts TCCN

- form T
- for top clamping
- Full Face

Tool material	**PCBN**
Standard	DIN ISO 16462
Surface	◯
	bright

GÜHRINGNAVIGATOR
Cutting data page 80

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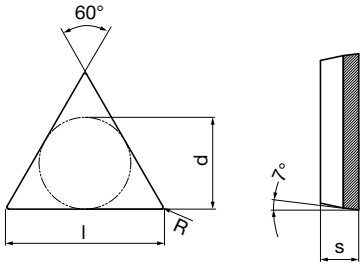

Article no.	**7739**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102F N-FF -20228	7739 61.020
3.970	1.59	0.40	6.900	TCCN060104F N-FF -20228	7739 61.040
5.560	2.38	0.40	9.600	TCCN090204F N-FF -20228	7739 92.040

Article no.	**7740**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102E N-FF -20228	7740 61.020
3.970	1.59	0.40	6.900	TCCN060104E N-FF -20228	7740 61.040
3.970	1.59	1.00	6.900	TCCN060110E N-FF -20228	7740 61.100
5.560	2.38	0.40	9.600	TCCN090204E N-FF -20228	7740 92.040

Article no.	**7741**
Cutting direction	left and right

d	s	R	l	ISO	Order no.
mm	mm	mm	mm		
3.970	1.59	0.20	6.900	TCCN060102S01020N-FF -20228	7741 61.020
3.970	1.59	0.40	6.900	TCCN060104S01020N-FF -20228	7741 61.040
5.560	2.38	0.40	9.600	TCCN090204S01020N-FF -20228	7741 92.040

GÜHRING

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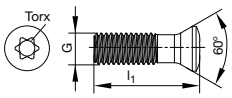
5 TECHNICAL SECTION

- Accessories p. 78
- Assignment of screws p. 79
- Cutting recommendations for inserts p. 80
- Indexable insert description to DIN ISO p. 82
- Cutting edge design p. 84
- Tool materials PCD and PCBN p. 85
- Request forms p. 94

Clamping screws

WN



Article no. **6128**

G	l1	Size	Code no.
	mm		
M2,2	5.000	T6	2.200
M2,5	6.500	T7	2.501
M3,5	10.000	T15	3.500
M5	11.000	T20	5.001

Insert form	Size	Screw G x l1	Torx	Nm	Article
T..W	0902..	M 2.2 x 5	T6	1.01	6128 2.200
V..W C..W D..W T..W	1102.. 0602.. 0702.. 1102..	M 2.5 x 6.5	T7	1.28	6128 2.501
C..W D..W V..W S..W T..W	09T3.. 11T3.. 1604.. 09T3.. 16T3..	M 3.5 x 10	T15	3.45	6128 3.500
C..W	1204..	M 5 x 11	T20	10.20	6128 5.001

ISO code	Material	CBN	CBN	
		10223	10231	
P	sintered steel. e.g. Sint D	100-150/0.1-0.2	100-150/0.1-0.2	
	sintered steel. hardened	90-130/0.1-0.2	90-130/0.1-0.2	
M	non-ferrous steels	120-200/0.1-0.2	120-200/0.1-0.2	
K	grey cast iron. e.g. GG20. GG25. GG30			
	cast iron with nodular cast iron GGG40. GGG50. GGG60			
	shell cast iron			
	Ni-Hard / NiCr cast iron			
N	Aluminium			
	other non-ferrous metals			
S	high heat treatable steels (Hastelloy. Nimonic. Inconel..)			
	Titanium and Titanium alloys			
	hard facing (Stellite)			
	Cr / Ni / Co coatings			
H	hardened steel 47-65 HRC	120-200/0.1-0.2	120-180/0.1-0.2	
	case hardening steels. heat treatable steels.	120-200/0.1-0.2	120-180/0.1-0.2	
	cast steels. ball bearing steels	80-120/0.1-0.2	90-130/0.1-0.2	

t = dry machining
n = wet machining

	Cutting speed v_c in m/min					
	CBN	CBN	CBN	CBN	CBN	PCD
	10660	10229	20226	20228	301500	30221
	100-170/0.06-0.1 120-180/0.1-0.2	100-170/0.06-0.1 120-180/0.1-0.2		100-170/0.06-0.1 120-180/0.1-0.2		
			600-1500/0.15-0.6		600-1200/0.15-0.6	
						900-3500/0.1-0.4 200-1000/0.05-0.5
			150-250/0.1-0.3		50-200/0.1-0.25	
	80-120/0.1-0.2 100-150/0.1-0.2 80-110/0.1-0.2	80-120/0.1-0.2 100-150/0.1-0.2 80-110/0.1-0.2				

C

Insert form		
De-scrip-tion	Angle	Form
A	85°	
B	82°	
C	80°	
D	55°	
E	75°	
H	120°	
K	55°	
L	90°	
M	86°	
O	135°	
P	108°	
R		
S	90°	
T	60°	
V	35°	
W	80°	

C

Clearance angle		
De-scrip-tion	Angle	
A	3°	
B	5°	
C	7°	
D	15°	
E	20°	
F	25°	
G	30°	
N	0°	
P	11°	
O	others	

G

Tolerance				
Tolerance class in relation to inscribed circle		Limit dimensions d ± mm	m ± mm	s ± mm
A	-	0.025	0.005	0.025
C	-	0.025	0.013	0.025
E	-	0.025	0.025	0.025
F	-	0.013	0.005	0.025
G	-	0.025	0.025	0.130
H	-	0.013	0.013	0.025
J	4.76 -9.25 12.7 15.875-19.05 25.4	0.050 0.080 0.100 0.130	0.005	0.025
K	4.76 -9.25 12.7 15.875-19.05 25.4	0.050 0.080 0.100 0.130	0.013	0.025
L	4.76 -9.25 12.7 15.875-19.05 25.4	0.050 0.080 0.100 0.130	0.025	0.025
M (not form D+V see exceptions)	4.76 -9.25 12.7 15.875-19.05 25.4	0.050 0.080 0.100 0.130	0.080 0.130 0.150 0.180	0.130
N (not form D+V see exceptions)	4.76 -9.25 12.7 15.875-19.05 25.4	0.050 0.080 0.100 0.130	0.080 0.130 0.150 0.180	0.025
U	4.76 -9.25 12.7 15.875-19.05 25.4	0.080 0.130 0.180 0.250	0.130 0.200 0.270 0.380	0.130
X		special design		

Exceptions

M+N form D	4.76 -9.25 12.7 15.875-19.05 25.4	0.050 0.080 0.100 -	0.110	as above
M+N form V	6.350 7.940 9.525	0.050	0.160	as above

W

Insert type	
De-scrip-tion	Form
A	
B	70° - 90°
C	70° - 90°
F	
G	
H	70° - 90°
J	70° - 90°
M	
N	
Q	40° - 60°
R	
T	40° - 60°
U	40° - 60°
W	40° - 60°
X	special design

09

Insert size / I/C diameter / edge length									
Size	Form	C	D	E	H	M	O	P	R
03	I/C edge l. x)				6.350 3.666		7.940 3.288		
04	I/C edge l. x)	4.760 4.833	3.970 4.853	4.760 4.928	7.940 4.583	4.760 4.772	9.525 3.945	6.350 4.614	
05	I/C edge l. x)	5.560 5.646	4.760 5.811	5.560 5.756	9.525 5.499	5.560 5.574	12.700 5.261	7.940 5.765	
06	I/C edge l. x)	6.350 6.448	5.560 6.788	6.350 6.574		6.350 6.366	15.875 6.576	9.525 6.920	6.350 6.00*)
07	I/C edge l. x)		6.350 7.752		12.700 7.332	7.940 7.957	19.050 7.891		7.940
08	I/C edge l. x)	7.940 8.060		7.940 8.218					8.00*)
09	I/C edge l. x)	9.525 9.672	7.940 9.691	9.525 9.861	15.875 9.165	9.525 9.548		12.700 9.227	9.525
10	I/C edge l. x)						25.400 10.521		10.00*)
11	I/C edge l. x)		9.525 11.628		19.050 10.999			15.875 11.534	
12	I/C edge l. x)	12.700 12.896				12.700 12.731			12.700 12.00*)
13	I/C edge l. x)			12.700 13.148			31.75 13.151	19.050 13.841	
15	I/C edge l. x)		12.700 15.504			15.875 15.914			15.875
16	I/C edge l. x)	15.875 16.120		15.875 16.435					16.00*)
17	I/C edge l. x)								
19	I/C edge l. x)	19.050 19.826	15.875 19.380	19.050 19.722		19.050 19.097			19.050

x) mathematical, theoretical value for a corner radius of 0.00 mm see also DIN 4988

Hole diameter/countersink diameter			
Diameter	Indexable insert with countersink (40° - 60°) to DIN/ISO 6987 insert type Q. T. W		Indexable insert with cylindrical hole to DIN 4988 insert type A. G. M
Inner Circle	d1	d2	d1
4.760	2.150	2.700	–
5.560	2.500	3.300	–
6.000	2.800	3.750	–
6.350	2.800	3.750	2.260
7.940	3.400	4.500	–
8.000	3.400	4.500	–
9.525	4.400	6.000	3.810
10.000	4.400	6.000	–
12.000	4.400	6.000	–
12.700	5.500	7.500	5.160
15.875	5.500	7.500	6.350
16.000	5.500	7.500	–
19.050	6.500	9.000	7.940
20.000	6.500	9.000	–
25.000	8.600	12.000	–
25.400	8.600	12.000	9.120

Note:
Overview is for information only.
No liability is accepted for the correctness of the contents.
Is not subject to modification.
Definitive data can be found in the respective standards.

	T3	04	S	01520	N	B L	20226	(A)
	Insert thickness	Cutting edge corner	Cutting edge corner design	Cutting edge size	Cutting direction	Placement shape	Tool material Code	Chip-breaker
	Description / s mm	Description / Radius mm	Description / Form	Description of the cutting surface chamfer (main chamfer)	Description	Corner placement (range); S = short cutting edge	Gühring description	Features

S	T	V	W
			5.560 2.716
4.760 4.760			6.350 4.344
5.560 5.560			7.940 5.430
6.350 6.350	3.970 6.876	3.970 6.921	9.525 6.515
7.940 7.940			
	4.760 8.245	4.760 8.299	12.700 8.687
9.525 9.525	5.560 9.630	5.560 9.694	
			15.875 10.859
	6.350 10.999	6.350 11.071	
12.700 12.700			
	7.940 13.749	7.940 13.839	19.050 13.031
15.875 15.875			
	9.525 16.498	9.525 16.606	
			25.400 17.375
19.050 19.050			

*) = Size to ISO 1832:2005-11 table A.2.
Round cutting inserts "metric" design.
Distinction see column cutting edge corner (M0 = metric, 00 = inch)

Description	s mm
01	1.59
T1	1.98
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52
12	12.7

Description	Radius mm
00	sharp point / indication for round insert inch
M0	Indication for round insert metric
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0

Description	Form
F	sharp
E	rounded
T	chamfered
S	chamfered + rounded
K	double chamfered
P	double chamfered + rounded

Symbol	Width	Symbol	Angle
005	0.05		
010	0.10		
015	0.15		
020	0.20		
025	0.25		
030	0.30		
050	0.50		
070	0.70		
100	1.00		
150	1.50		
200	2.00		
		05	5°
		10	10°
		15	15°
		20	20°
		25	25°
		30	30°

Description
R right-hand
L left-hand
N neutral

Corner placement (range); S = short cutting edge
A
B
C
D
F
S
K
L
M
N
l1 [mm]
S < 3
L ≥ 3
F = full length cutting edge

Gühring description
PCD
Polycrystalline diamond
PCD 10…
PCD 20…
PCD 30…
PCD 40…
PCD 50…
PCBN
Polycrystalline cubic boron nitride
PCBN 10…
PCBN 20…
PCBN 30…

Features
A — finishing ≤ fz = 0.15 mm B — roughing > fz = 0.15 mm

The choice of cutting material depends on the material to be processed and the cutting conditions.

Planar chamfer	
Setting angle Kr of main cutting edge in feed direction	Clearance angle of planar chamfer
A 45° D 60° E 75° F 85° P 90° Z *	A 3° B 5° C 7° D 15° E 20° F 25° G 30° N 0° P 11° Z *

*Special design

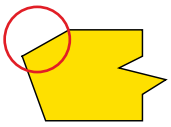
Cutting type	Tool material							
	CBN 10223	CBN 10231	CBN 10660	CBN 10229	CBN 20226	CBN 20228	CBN 301500	PCD 30221
Continuous cutting	x		x	x	x	x	x	x
Slightly interrupted cutting	x	x	x	x	x		x	x
Partially interrupted cutting		x	x		x		x	x
Highly interrupted cutting		x					x	x

| CUTTING EDGE GEOMETRY

(T) Chamfered cutting edge

The chamfered cutting edge stabilises the edge and reduces wear. The chamfer can also improve chipping and increase service life.

Illustration with negative chamfer:

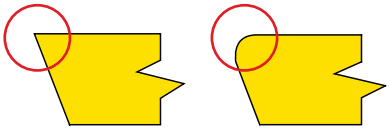


(F) Sharp-edged cutting edge

(E) Sharp-edged and rounded

Sharp cutting edges reduce the cutting pressure, making them ideal for processing thin-walled components.

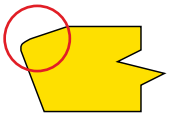
Rounding the cutting edge stabilises it.



(S) Chamfered and rounded cutting edge

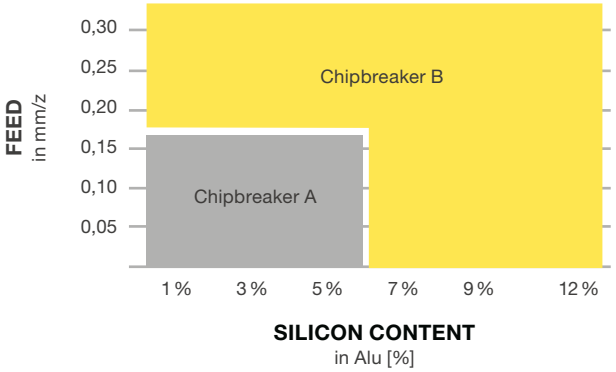
Rounded edges ensure a higher stability of the cutting edges. This design is ideal for very demanding operations.

Illustration with negative chamfer:



| CHIPBREAKER FUNCTION

The chipbreaker is a shoulder behind the main cutting edge. Precisely firing the produced chip at the cutting and redirection surface reliably breaks up the chip and removes it from the component.



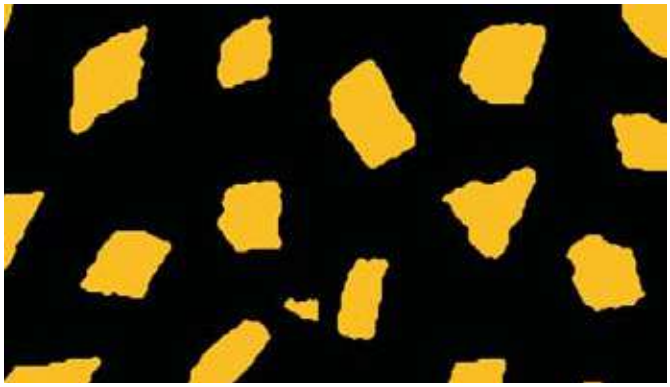
Selecting the chipbreaker:
Chipbreakers are available with a variety of geometries and there is a range of factors to consider when selecting one. The tooth feed and the silicon content of aluminium (processing material) have the greatest effect on chip formation. Both of these factors affect whether the geometry of chipbreaker A or B would be most suitable.

Gühring description	Classification	Range of application, characteristics	Average grain size	Diamond content
PCD 10..	Ultra-fine grain	Aluminium and low-alloyed AlSi compounds, magnesium alloys, copper, titanium, ceramics and composite materials, optimal breakage protection and cutting edge quality, outstanding abrasion and impact resistance, highest-quality surface finishes	1 µm	> 90% PCD
PCD 20..	Fine grain	Aluminium and AlSi-alloys <10% Si, magnesium alloys, brass, copper, bronze, wood composite materials, excellent cutting edge quality, high abrasion resistance, excellent surface qualities	2-4 µm	appr. 90% PCD
PCD 30..	Medium grain	**Gühring standard grade** AlSi-alloys <14% Si, copper alloys, graphite and graphite composite materials, wood composite materials, unsintered ceramic and carbide (<15% binding metal content) excellent abrasion resistance, good surface qualities	5-10 µm	appr. 92% PCD
PCD 40..	Coarse grain	Roughing and finishing applications AlSi-alloys >14% Si and other abrasive machining applications, MMC, sintered ceramic and carbide (<15% binding metal content), extreme abrasion resistance, high shock resistance, long tool life with acceptable to good surface quality	25 µm	appr. 94% PCD
PCD 50..	Mixed grain	Abrasive machining applications (i.e.: >14% AlSi-alloys, MMC, composite materials) highest wear resistance, excellent shock resistance, extreme abrasion resistance with good edge roughness, long tool life with very good surface quality	2-4 µm+ 25 µm	appr. 95% PCD
PCBN 10..	Low CBN-content	CBN tool material with carbide base for finishing machining of, for example, case hardened steels, heat-treatable steels, tool steels, grey cast iron, suitable for continuous and interrupted cut applications (especially hard turning) with a chip removal <0.5 mm, high pressure resistance, low thermal conductivity, excellent abrasion resistance, chemical stability, good shock toughness for high removal rates, excellent surface finish and long tool life	2 µm	50-75% CBN
PCBN 20..	High CBN-content with carbide base	CBN tool material with carbide base for the machining of, for example, pearlitic grey cast iron (> 45 HRC), hardened steel, tool and structural profile steels, powder metallurgic Fe-sinter materials, alloys on Ni/Cr basis (nickel base alloys - "Super-alloys") thermal sprayed alloy & hard coatings on Co-, Ni- and Fe-basis, suitable for continuous and interrupted cut applications with a medium chip removal (typical 0.5 - 1.5 mm) high thermal conductivity, high break toughness, high surface qualities	2 µm	80-95% CBN
PCBN 30..	High CBN-content without carbide base	Solid CBN tool material without carbide base for rough machining of pearlitic grey cast iron, chilled cast iron (> 45 HRC), hardened steels with high break toughness, excellent wear resistance, very good chemical hardness, high specific removal rate For application in tool holders, drilling and boring tools, recessing tools as well as cutter heads with clamping element and negative rake angle geometry	15 µm	80-95% CBN

PCD and PCBN as cutting materials

In contrast to natural monocrystalline diamond, polycrystalline diamond (PCD) is the result of a synthesis process developed in the 1950s. Both PCD and polycrystalline cubic boron nitride (PCBN) are composite materials with differing amounts of hard material and are used for cutting metals. There are key differences in the structure of these cutting materials which affect how the tools are used. Apart from the hardness, the main difference lies in the carbon‘s affinity for iron. For this reason, PCD is well suited to non-ferrous metals, whereas PCBN is better suited to ferrous metals and is tougher, but also less hard.

Schematic structure of PCD
Filler: Fills the spaces between the interlinked individual diamond crystals

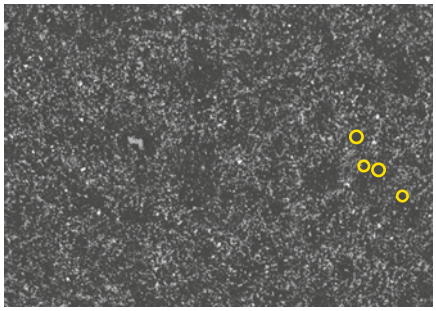


Schematic structure of PCBN
Binder: Can influence the toughness and wear resistance

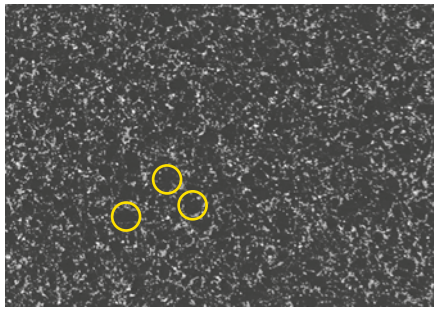
= Hard material = Filler for PCD / binder for PCBN

PCD types

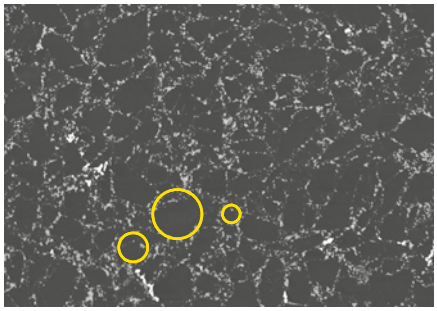
There are essentially three types of PCD, which are used for different applications. The types are differentiated by their grain size. Fine grain is used for reaming as it produces an outstanding surface finish. Medium grain can be used universally for milling, reaming and drilling. Mixed grain is mainly used for milling and offers good wear resistance.



Fine grain < 4 µm
Diamond content: 90 %
Used for: Reaming
Very sharp cutting edges for outstanding surface finishes.



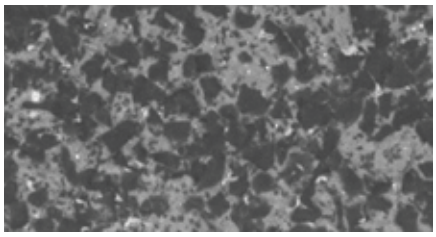
Medium grain 5-10 µm
Diamond content: 92 %
Used for: Universally
Outstanding abrasion resistance and good surface finishes.



Mixed grain 2-20 µm and 10-35 µm
Diamond content: 95 %
Used for: Milling
Very high wear resistance.
Good results with very abrasive materials.

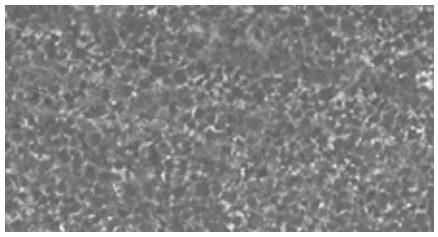
PCBN types

Three different types are mainly used to produce PCBN tools. The hardness, toughness and thermal conductivity grow as the CBN content increases. CBN 10 is one of the lower grades of PCBN. CBN 20 is one of the higher grades of PCBN which are substantially harder and tougher. Both types are suitable for turning, milling and reaming in specific applications. A distinction is made here between continuous cutting and slightly, moderately and severely interrupted cutting. CBN 30 is a solid PCBN cutting material which is used as a cutting insert without a carbide substrate when turning and milling. CBN 30 is also suitable for roughing, for large cutting depths and for very abrasive materials during severely interrupted cutting.



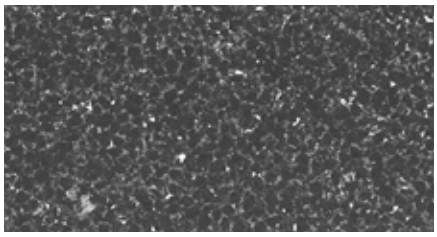
CBN 10 (lower-grade PCBN)

- CBN content: 50-75 %
- WITH carbide substrate
- Used for: Turning, milling, reaming for continuous cutting and slightly interrupted cutting
- Finishing work



CBN 20 (higher-grade PCBN)

- CBN content: 80-95 %
- WITH carbide substrate
- Used for: Turning, milling, reaming for severely interrupted cutting
- Finishing and roughing work



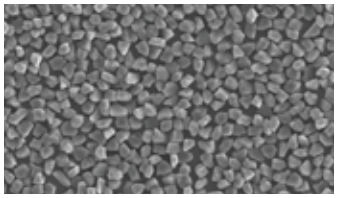
CBN 30 (solid PCBN)

- CBN content: 80-95 %
- WITHOUT carbide substrate
- Used for: Turning, milling for severely interrupted cutting
- Roughing work and machining very abrasive materials, for large cutting depths

Manufacturing PCD and PCBN tools

Manufacturing PCD tools

Individual diamond crystals → Two-layered round blank → Segments = cutting edges → Tool carrier



PCD tools are manufactured from synthetic individual diamond crystals, which are sintered onto a carbide substrate under pressure and at a high temperature. This produces a twolayered round blank, which is cut into small segments using wire eroding or laser cutting and brazed onto a tool carrier.

Manufacturing PCBN tools

Boron nitride powder → Two-layered round blank → Segments = cutting edges → Tool carrier

PCBN is manufactured in a chemical process under high pressure and at temperatures in excess of 1500 °C. In contrast to PCD, with PCBN a metallic or ceramic binder is used for the hard material, before the cutting material is sintered onto the metal carrier.

Features of PCD and PCBN for use in cutting tools

PCD
the ideal cutting material for non-ferrous metals

- Use of grain sizes between < 1 µm-40 µm
- Fine, medium, coarse or mixed grain
- The higher the diamond content and the coarser the grain, the higher the wear resistance of the PCD.
- Fine grain provides very sharp cutting edges and results in very good surface finishes on the component.
- High level of hardness (8,000 HV)
- Resistant to wear when machining non-ferrous metals, fibre-reinforced plastic or ceramic
- Due to the carbon‘s high affinity for iron, ferrous materials cannot be machined despite the high level of hardness. As a result of chemical diffusion wear and the formation of iron carbide, machining materials under the influence of pressure and temperature would cause the PCD cutting edge to wear out prematurely.
  This issue can be solved by using PCBN.

PCBN
the ideal cutting material for iron-based alloys

- Less hard than diamond (2,600-4,500 HV)
- Chemically resistant to ferrous materials
- High level of temperature and wear resistance for iron-based alloys
- Binding systems:
  Ceramic: heat-stable
  Metallic: tough
- CBN content:
  Lower-grade CBN 50-75 %:
  Hard machining, continuous to interrupted cutting
  Higher-grade CBN > 80 %: Cast iron machining

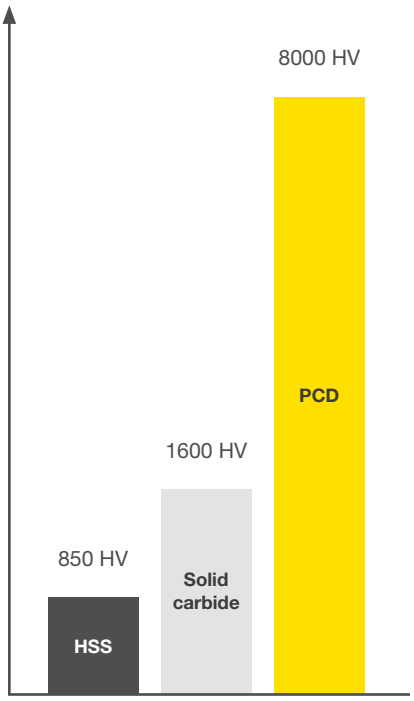
Features of PCD and PCBN for use in cutting tools

When machining material, the cutting materials are generally subject to extreme loads such as heat, impacts, or abrasive and chemical influences, in particular on the cutting edges. Therefore, the cutter must be able to withstand these influences for as long as possible. PCD and PCBN are ultra-hard cutting materials offering high performance on account of their impressive properties with respect to hardness, toughness, resistance to thermal shock, and chemical resistance.

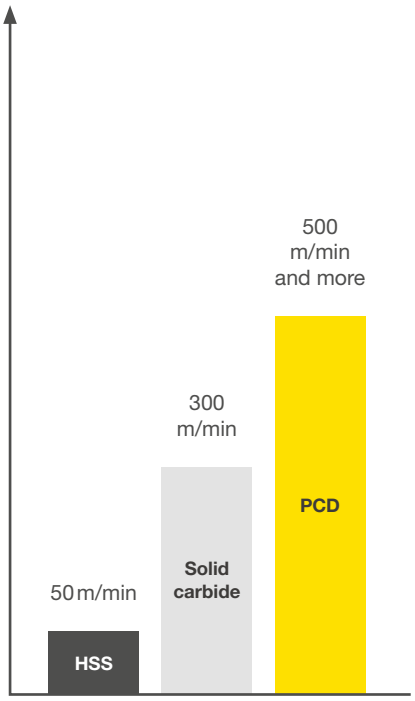
Benefits for the user

- greater productivity, due to a longer service life and higher cutting speeds, for example
- lower costs per workpiece
- the most appropriate cutting material is selected for customer-specific tools, in order to meet special requirements and maximise added value
- very good surface finish
- very high level of accuracy
- high profitability as it can be re-tipped multiple times

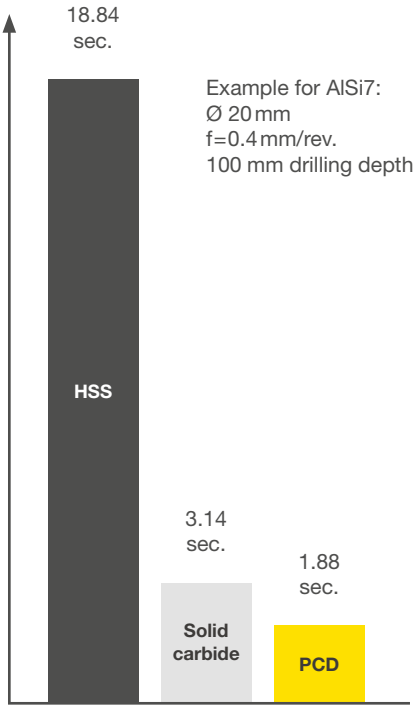
Comparison of PCD properties



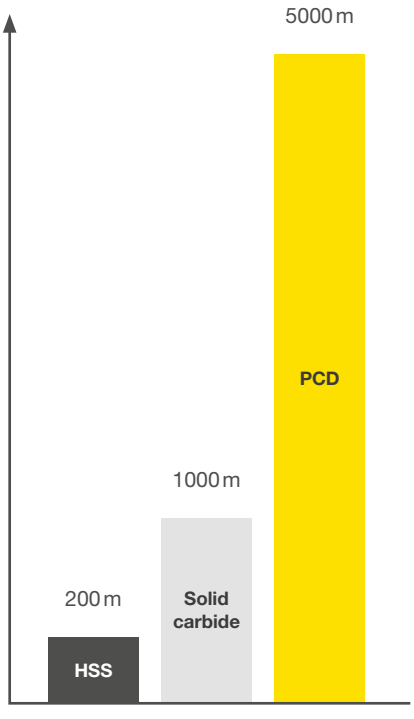
Hardness



Cutting speed



Machining time



Tool life

Request form PCBN / PCD Inserts

Customer number / New customer	Order number
Company name	Contact
Street, n°	Telephone
City, ZIP-code, Country	E-Mail
Date	Your contact at Guhring

☐ Request	☐ Quote	☐ Order	☐ Test
Cutting material:	☐ **PCBN**	☐ **PCD**	
Insert - DIN Norm:			
Competition / DIN Norm / holder:			
Number of cutting edges:			
Type of tipping:			
☐ Full-PCBN-insert	☐ Full-Face	☐ edge tipped	☐ corner tipped
Negative Chamfer	☐ yes	☐ no	mm x °
Machining concept:	☐ horizontal	☐ vertical	
Current cutting data: Vc =		f =	
Workpiece name:			
Material:			
Hardness:			
Cutting depth:			
Surface finish:			
Machining:			
☐ Roughing	☐ Finishing	☐ Component/drawing yes	☐ Component/drawing no
☐ Interrupted cut	☐ Non-interrupted cut	☐ Hard interrupted cut	
Cooling:	☐ Emulsion	☐ dry	
Consumption per year/month			

Request form for PCD / PCBN tools

Customer number | New customer

Company name

Street, n°

City, ZIP-code, Country

Date

Order number

Contact

Telephone

E-Mail

Your contact at Guhring

1. Tool

1.1 Cutting material ☐ PCD ☐ PCBN

1.2 Type ☐ stationary ☐ rotating

1.3 Tool type

☐ Drill ☐ Reamer ☐ Counter sink

☐ Indexable insert

☐ Milling cutter ☐ face milling ☐ circular

☐ up-cut milling ☐ climb milling

1.4 Cutting edge type

Length cutting edge

Cutting edge position

Ø Tolerance

1.5 Shank type

☐ HSK ☐ SK ☐ ABS

☐ Straight shank ☐ Alignment adapter ☐ BT

☐ to DIN

☐ Size / form

1.6 Tool type

☐ shrinked ☐ monolithic

☐ external cooling ☐ internal cooling

☐

1.7 Existing tool

Manufacturer

Difficulties ☐ Vibrations ☐ Chip removal

☐ Surface ☐ Form and position

Tool life Target actual

2. Workpiece

Description

2.1 Material

Material designation

Hardness

Particularities

2.2 Available information

☐ Component drawing

☐ 3D-Model

☐ 2D drawing (AutoCAD)

☐ Raw part drawing

2.3 Preparations

☐ pre-drilled ☐ pre-castal

☐ oversize ☐ into solid material

2.4 Characteristics / Specifications

☐ interrupted cuts ☐ Cross bore

☐ inclined entrance ☐ inclined exit

☐ blind hole ☐ through hole

☐

2.5 Required quality

Surface finish quality RZ Ra

Roundness

Straightness

Cylindricity

Concentricity

Flatness

3. Machine

3.1 Machine type

☐ Machining centres ☐ Transfer line

Manufacturer / type / year

Number of spindles

Position spindles

total weight max.

Power kW

other spezifications

3.2 Cutting data / Machining conditions

Cutting speed

Speed min. / max.

Feed min. / max.

Particularities

3.3 Cooling

☐ internal cooling ☐ Oil Mixing ratio

☐ external cooling ☐ MQL ☐ 1-channel ☐ 2-channel

☐ Air ☐ dry

Coolant pressure bar Flat rate l/min

3.4 Target tool life / Machining time (min)

Technical section

PCD - PCBN

GÜHRING

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