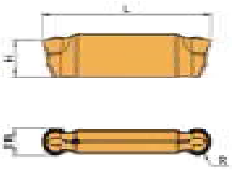
Inserts
SE24



Sintered Execution

Designation	B ± 0.04	R	L	R	HC	MG
SE24-2020N-15R1	2	0.2	24	1.5	●	
SE24-2020N-15R2	2	0.4	24	1.5		●
SE24-2020N-15R3	2	0.6	24	1.5	●	
SE24-2020N-15R4	2	0.8	24	1.5		●
SE24-2020N-15R5	2	1.0	24	1.5	●	
SE24-2020N-15R6	2	1.2	24	1.5		●

HC = Carbide coated
MG = Carbide uncoated

● First application
○ Secondary application

ISO TURNING TOOLS

System presentation

ISO 사각홀더 규격 선정법

S	C	A	C	R	12	12	X	09	...
CLAMPING METHOD 클램핑 방식	INSERT SHAPE 인서트 형상	APPROACH ANGLE 접근 각도	CLEARANCE ANGLE 인서트 여유각	HOLDER DESIGN 홀더 설명	SHANK HEIGHT 높이	SHANK WIDTH 두께	HOLDER LENGTH 홀더 전장	EDGE LENGTH 인서트 길이	ADDITIONAL CODING 추가 설명

S CLAMPING METHOD 클램핑 방식

- C — Top clamping
- D — Top and hole clamping
- M — Top and hole clamping
- P — Lower lock clamping
- S — Screw clamping

C INSERT SHAPE 인서트 형상

- 80° C
- 55° D
- 75° E
- 86° M
- 35° V
- 85° A
- 82° B
- 55° K
- H
- L
- O
- P
- R
- S
- T
- W

A APPROACH ANGLE 접근 각도

A B C D E F G H J K L M N R S T U V W Y

C CLEARANCE ANGLE 인서트 여유각

3° A
5° B
7° C
15° D
20° E
25° F
30° G
0° N
11° P

Offset + O

R HOLDER DESIGN 홀더 설명

R

L

N

12 SHANK HEIGHT 높이

Cutting edge height "A" is no... with the bottom of the cutting edge height is equal to "A", with standard holders (cartridge). The shank height H is generally equal to "A".

12 SHANK WIDTH 두께

Shank width "A" is no... for shank width, a common ... cartridges. It is replaced by the letters "SC".

X HOLDER LENGTH 홀더 전장

A (mm)	X	A (mm)	X
A	32	M	150
B	40	N	160
C	50	P	170
D	60	Q	180
E	70	R	200
F	80	S	250
G	90	T	300
H	100	U	350
J	110	V	400
K	125	W	450
L	140	Y	500

Special length → X

09 EDGE LENGTH 인서트 길이

d (mm)	d (inch)	S (mm)	S (inch)
06	1/4	3.97	03
08	5/16	4.76	04
09	3/8	5.56	05
11	7/16	6.35	06
12	1/2	7.94	08
16	5/8	9.525	09
19	3/4	12.7	12
22	7/8	15.875	16
25	1	19.05	19
44	1 1/4	25.4	25

... ADDITIONAL CODING 추가 설명

Special product features are indicated by an internal company code at digit 10.

Tool shank options

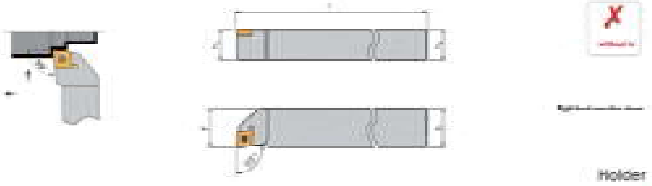
TOOLHOLDER

스크류 체결 방식의 외경 홀더

스크류 체결 방식의 내경 홀더

Holders with screw clamping

SCLC R/L Approach angle 95°



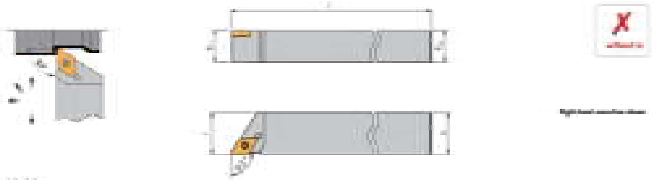
Holder

Designation	h_1 / h_2	h	l	f	PC DR	Insert
SCLC R/L 0808 K06-A	8	8	115	8.2	●	CC.. 0602..
SCLC R/L 1010 K06-A	10	10	115	10.2	●	CC.. 0602..
SCLC R/L 1212 K06-A	12	12	130	12.2	●	CC.. 0602..
SCLC R/L 1212 K09-A	12	12	130	12.2	●	CC.. 0903..
SCLC R/L 1616 K09-A	16	16	130	16.2	●	CC.. 0903..
SCLC R/L 1616 S09-A	16	16	130	16.2	●	CC.. 0903..
SCLC R/L 2020 K09-A	20	20	130	20.2	●	CC.. 0903..

SCLC R Approach angle 95°

Designation	h_1 / h_2	h	l_1	l_2	l_m	f	Thread 1	Thread 2	PC DR	Insert
SCLCR 1212 K06-A-IN-S06	12	12	130	24	20	12	M6x1	M5x1	●	CC.. 0602..
SCLCR 1212 K06-A-IN-S06	12	12	130	24	20	12	M6x1	10-32	●	CC.. 0602..
SCLCR 1212 K06-A-IN-S06	12	12	130	24	20	12	M6x1	M5x1	●	CC.. 0903..
SCLCR 1212 K06-A-IN-S06	12	12	130	24	20	12	M6x1	10-32	●	CC.. 0903..
SCLCR 1616 K09-A-IN-S06	16	16	130	24	20	16	M6x1	M5x1	●	CC.. 0903..
SCLCR 1616 K09-A-IN-S06	16	16	130	24	20	16	M6x1	10-32	●	CC.. 0903..
SCLCR 2020 K09-A-IN-S06	20	20	130	24	20	20	M6x1	M5x1	●	CC.. 0903..
SCLCR 2020 K09-A-IN-S06	20	20	130	24	20	20	M6x1	10-32	●	CC.. 0903..

SDJC R/L Approach angle 93°



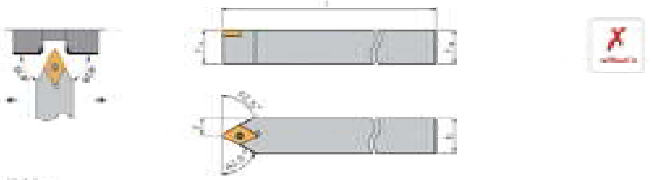
Holder

Designation	h_1 / h_2	h	l	f	PC 20	Insert
SDJC R/L 0808 107-4	8	8	110	8.5	●	DC.. 0702..
SDJC R/L 1010 107-4	10	10	110	10.5	●	DC.. 0702..
SDJC R/L 1212 107-4	12	12	110	12.5	●	DC.. 0702..
SDJC R/L 1713 113-4A	13	13	130	13.5	●	DC.. 1171..
SDJC R/L 1616 107-4A	16	16	110	16.5	●	DC.. 0702..
SDJC R/L 1616 113-4A	16	16	130	16.5	●	DC.. 1171..
SDJC R/L 2020 X11-4	20	20	130	20.5	●	DC.. 1171..

SDJC R Approach angle 93°

Designation	h_1 / h_2	h	l_1	l_2	l_m	f	Thread 1	Thread 2	PC 20	Insert
SDJCR 1212 107-4-W-S20	12	12	110	32	20	12	M8x1	M8x1	●	DC.. 0702..
SDJCR 1713 113-4A-W-S32	13	13	130	32	20	13	M8x1	M8x1	●	DC.. 1171..
SDJCR 1616 113-4A-W-S32	16	16	130	32	20	16	M8x1	M8x1	●	DC.. 1171..
SDJCR 1212 107-4-W-S20	12	12	110	32	20	12	M8x1	G 1/8"	●	DC.. 0702..
SDJCR 1713 113-4A-W-S32	13	13	130	32	20	13	M8x1	G 1/8"	●	DC.. 1171..
SDJCR 1616 113-4A-W-S32	16	16	130	32	20	16	M8x1	G 1/8"	●	DC.. 1171..

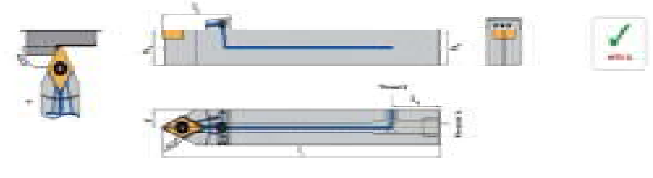
SDNC N Approach angle 62,5°



Holder

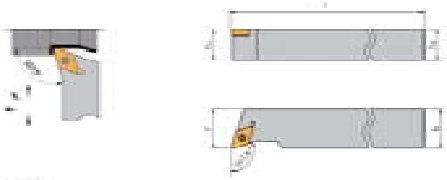
Designation	h_1 / h_2	h	l	f	PC 20	Insert
SDNC N 0808 107-4	8	8	110	9.5	●	DC.. 0702..
SDNC N 1010 107-4	10	10	110	9.5	●	DC.. 0702..
SDNC N 1212 107-4	12	12	110	9.5	●	DC.. 0702..
SDNC N 1212 113-4	12	12	130	9.5	●	DC.. 1171..
SDNC N 1616 113-4	16	16	130	9.5	●	DC.. 1171..
SDNC N 2020 X11-4	20	20	130	10.5	●	DC.. 1171..

SDNC N Approach angle 62,5°



Designation	h_1 / h_2	h	l_1	l_2	l_m	f	Thread 1	Thread 2	PC 20	Insert
SDNCN 1212 107-4-W-S20	12	12	110	32	20	9	M8x1	M8x1	●	DC.. 0702..
SDNCN 1713 113-4A-W-S32	13	13	130	32	20	9	M8x1	M8x1	●	DC.. 1171..
SDNCN 1616 113-4A-W-S32	16	16	130	32	20	9	M8x1	M8x1	●	DC.. 1171..
SDNCN 1212 107-4-W-S20	12	12	110	32	20	9	M8x1	G 1/8"	●	DC.. 0702..
SDNCN 1713 113-4A-W-S32	13	13	130	32	20	9	M8x1	G 1/8"	●	DC.. 1171..
SDNCN 1616 113-4A-W-S32	16	16	130	32	20	9	M8x1	G 1/8"	●	DC.. 1171..

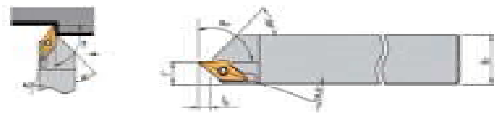
SDHC R/L Approach angle 107,5°



Holder

Designation	h_1 / h_2	h	l	f	PG 20	Insert
SDHC R/L 1212 S07-A	12	12	110	12,5	●	DC.. 0702..
SDHC R/L 1212 S07-A	12	12	110	12,5	●	DC.. 0702..
SDHC R/L 1616 S07-A	16	16	110	16,5	●	DC.. 0702..
SDHC R/L 1616 X11-A	16	16	130	16,5	●	DC.. 1171..
SDHC R/L 2020 X11-A	20	20	130	20,5	●	DC.. 1171..

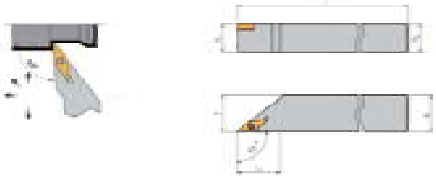
SV91C R/L for back turning



Holder

Designation	h_1 / h_2	h	l	l_1	f	PG 20	Insert
SV91C R/L 1212 X11-A	12	12	110	6	7,5	●	VC.. 1103..
SV91C R/L 1616 X11-A	16	16	110	6	7,5	●	VC.. 1103..
SV91C R/L 2020 X11-A	20	20	110	6	7,5	●	VC.. 1103..

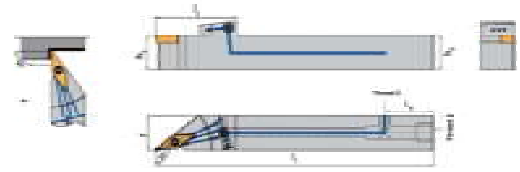
SVJC R/L Approach angle 93°



Holder

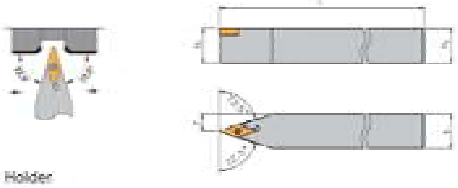
Designation	h_1 / h_2	h	l	f	PG 20	Insert
SVJC R/L 0808 S11-A	8	8	110	8,2	●	VC.. 1103..
SVJC R/L 1010 S11-A	10	10	110	10,2	●	VC.. 1103..
SVJC R/L 1212 X11-A	12	12	130	12,2	●	VC.. 1103..
SVJC R/L 1212 T16-A	12	12	130	12,2	●	VC.. 1604..
SVJC R/L 1616 X11-A	16	16	130	16,2	●	VC.. 1103..
SVJC R/L 2020 X11-A	20	20	130	20,2	●	VC.. 1103..
SVJC R/L 2020 T16-A	20	20	130	20,2	●	VC.. 1604..

SVJC R Approach angle 93°



Designation	h_1 / h_2	h	l_1	l_2	l_m	f	Thread 1	Thread 2	PG 20	Insert
SVJCR 1212 X11-A-W-11S	12	12	110	25	20	12	M8x1	M8x1	●	VC.. 1103..
SVJCR 1212 X11-A-W-11S	12	12	110	30	25	12	M8x1	M8x1	●	VC.. 1103..
SVJCR 1212 X16-A-W-11S	12	12	110	45	20	12	M8x1	M8x1	●	VC.. 1604..
SVJCR 1616 X11-A-W-11S	16	16	110	30	20	16	M8x1	M8x1	●	VC.. 1103..
SVJCR 1616 X11-A-W-11S	16	16	110	45	20	16	M8x1	M8x1	●	VC.. 1103..
SVJCR 1616 X16-A-W-11S	16	16	110	45	20	16	M8x1	M8x1	●	VC.. 1604..
SVJCR 1212 X11-A-W-12S	12	12	120	25	20	12	M8x1	G 1/8"	●	VC.. 1103..
SVJCR 1212 X11-A-W-12S	12	12	120	30	25	12	M8x1	G 1/8"	●	VC.. 1103..
SVJCR 1212 X16-A-W-12S	12	12	120	45	20	12	M8x1	G 1/8"	●	VC.. 1604..
SVJCR 1616 X11-A-W-12S	16	16	120	30	20	16	M8x1	G 1/8"	●	VC.. 1103..
SVJCR 1616 X11-A-W-12S	16	16	120	45	20	16	M8x1	G 1/8"	●	VC.. 1103..
SVJCR 1616 X16-A-W-12S	16	16	120	45	20	16	M8x1	G 1/8"	●	VC.. 1604..

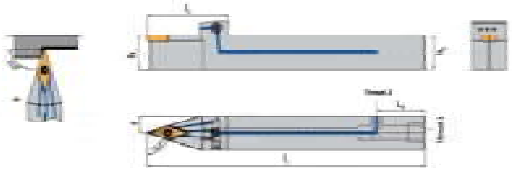
SVVC N Approach angle 72,5°



Holder

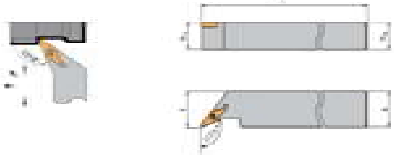
Designation	h_1 / h_2	b	l	f	IPS 39	Insert
SVVC N 0808 K11-4	8	8	115	4.0	●	VC.. 1103..
SVVC N 1010 K11-4	10	10	115	5.0	●	VC.. 1103..
SVVC N 1212 K11-4	12	12	115	6.0	●	VC.. 1103..
SVVC N 1212 K16-4	12	12	130	6.0	●	VC.. 1604..
SVVC N 2020 K11-4	20	20	115	10.0	●	VC.. 1103..
SVVC N 2020 K16-4	20	20	130	10.0	●	VC.. 1604..
SVVC N 2020 K16-5	20	20	130	10.0	●	VC.. 1604..

SVVC N Approach angle 72,5°



Designation	h_1 / h_2	b	l_1	l_2	l_4	f	Thread 1	Thread 2	IPS 39	Insert
SVVCN 1212 K11-4-IK-516	12	12	115	28	25	6	M8x1	M8x1	●	VC.. 1103..
SVVCN 1212 K16-4-IK-516	12	12	130	43	25	6	M8x1	M8x1	●	VC.. 1604..
SVVCN 2020 K11-4-IK-516	20	20	115	28	25	6	M8x1	M8x1	●	VC.. 1103..
SVVCN 2020 K16-4-IK-516	20	20	130	43	25	6	M8x1	M8x1	●	VC.. 1604..
SVVCN 1212 K11-4-IK-526	12	12	115	28	25	6	M8x1	G 1/8"	●	VC.. 1103..
SVVCN 1212 K16-4-IK-526	12	12	130	43	25	6	M8x1	G 1/8"	●	VC.. 1604..
SVVCN 2020 K11-4-IK-526	20	20	115	28	25	6	M8x1	G 1/8"	●	VC.. 1103..
SVVCN 2020 K16-4-IK-526	20	20	130	43	25	6	M8x1	G 1/8"	●	VC.. 1604..

SVXC R/L Approach angle 117,5°



Holder

Designation	h_1 / h_2	b	l	f	IPS 39	Insert
SVXC R/L 2020 K11-4	20	20	115	15.0	●	VC.. 1103..
SVXC R/L 2020 K11-5	20	20	115	15.0	●	VC.. 1103..

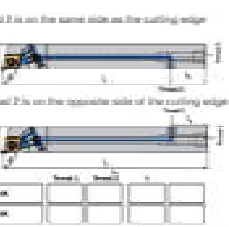
Enquiry through tool coolant access tool holder –A–IK

Tool holder with through tool coolant access from the back

Shank height	Wrench	l
1212	-4-IK	
2020	-4-IK	

ARNO® Special Design

Tool holder with through tool coolant access from the back



Design B – Thread 2 is on the same side as the cutting edge

Design BO – Thread 2 is on the opposite side of the cutting edge

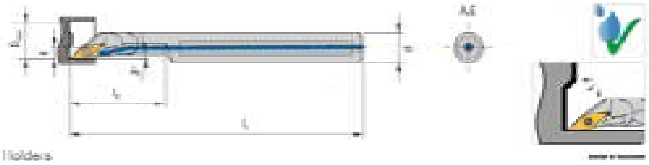
Shank height	Thread 1	Thread 2	l
1212	-4-IK		
2020	-4-IK		

Basic version

Shank height	l
1212 -4-IK	130
2020 -4-IK	130

Tool holders with screw clamping

SVJC R/L Approach angle 52°



Holders

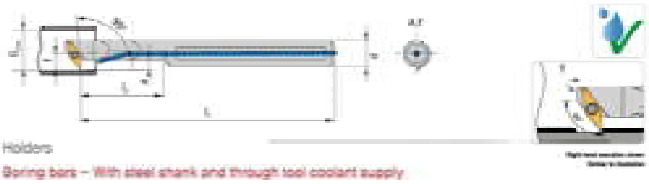
Boring bars – With steel shank and through tool coolant supply

Designation	d	l_1	l_5	f	D_{min}	Insert
A08F SVJC L/R 03	8	80	13	1.8	9	VC.. 0302...
A10H SVJC L/R 03	10	125	18	1.8	13	VC.. 0302...
A12L SVJC L/R 03	12	140	18	1.8	15	VC.. 0302...

Spare Parts

Holder	Screw	Key
... SVJC L/R 03	KM3.5×9	KS 1500
... SVJC L/R 07	SS-5×40	KS 1900

SVSC R/L Approach angle 95°



Holders

Boring bars – With steel shank and through tool coolant supply

Designation	d	l_1	l_5	f	e	D_{min}	Insert
A08F SVSC 03	8	80	13	1.8	3	9.2	VC.. 0302...
A08F SVSC L 03	8	80	13	1.8	3	9.2	VC.. 0302...

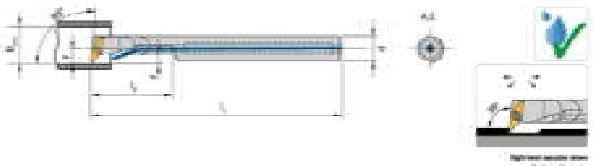
Boring bars – With solid carbide shank and through tool coolant supply

Designation	d	l_1	l_5	f	e	D_{min}	Insert
B08F SVSC 03	8	80	26	1.8	3	9.2	VC.. 0302...
B08F SVSC L 03	8	80	26	1.8	3	9.2	VC.. 0302...

Spare Parts

Holder	Screw	Key
... SVSC... 03	HTS M3	KS 1200

SVLC L/R Approach angle 95°



Holders

Boring bars – With steel shank and through tool coolant supply

Designation	d	l_1	l_5	f	e	D_{min}	Insert
A08F SVLC L/R 03	8	80	13	1.8	3	9.2	VC.. 0302...
A10H SVLC L/R 03	10	100	22	2	5	12.5	VC.. 0302...
A10H SVLC L/R 07	10	125	22	2	5	12.5	VC.. 0702...
A12M SVLC L/R 07	12	150	26	2	5	13.5	VC.. 0702...

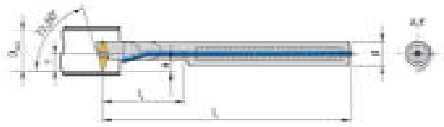
Boring bars – With solid carbide shank and through tool coolant supply

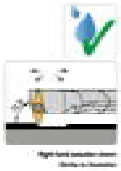
Designation	d	l_1	l_5	f	e	D_{min}	Insert
B08F SVLC L/R 03	8	80	26	1.8	3	9.2	VC.. 0302...
B10H SVLC L/R 03	10	100	32	2	5	12.5	VC.. 0302...
B12M SVLC L/R 07	12	125	40	2	5	13.5	VC.. 0702...
B16M SVLC L/R 07	16	150	50	2	5	17.5	VC.. 0702...

Spare Parts

Holder	Screw	Key
... SVLC L/R 03	KM 3.5×9	KS 1500
... SVLC L/R 07	SS-5×40	KS 1900

SVVC R/L Approach angle 72,5°





Holders

Boring bars – With steel shank and through tool coolant supply

Designation	d	l_1	l_4	f	a	D_{min}	Insert
ADBF SVVCR 06	8	80	15	5.5	3.5	9.7	VC.. 0501...
ADBF SVVCL 06	8	80	15	5.5	3.5	9.7	VC.. 0501...

Boring bars – With solid carbide shank and through tool coolant supply

Designation	d	l_1	l_4	f	a	D_{min}	Insert
SBBF SVVCR 06	8	80	25	5.5	3.5	9.7	VC.. 0501...
SBBF SVVCL 06	8	80	25	5.5	3.5	9.7	VC.. 0501...

Spare Parts

Holder	Screw	Key
...SVVC... 06	......	.....

SVXC R/L Approach angle 113°

Holders

Boring bars – With steel shank and through tool coolant supply

Designation	d	l_1	l_4	f	a	D_{min}	Insert
ADBF SVXCR 06	8	80	15	5	3	9.7	VC.. 0501...
ADBF SVXCL 06	8	80	15	5	3	9.7	VC.. 0501...

Boring bars – With solid carbide shank and through tool coolant supply

Designation	d	l_1	l_4	f	a	D_{min}	Insert
SBBF SVXCR 06	8	80	25	5	3	9.7	VC.. 0501...
SBBF SVXCL 06	8	80	25	5	3	9.7	VC.. 0501...

Spare Parts

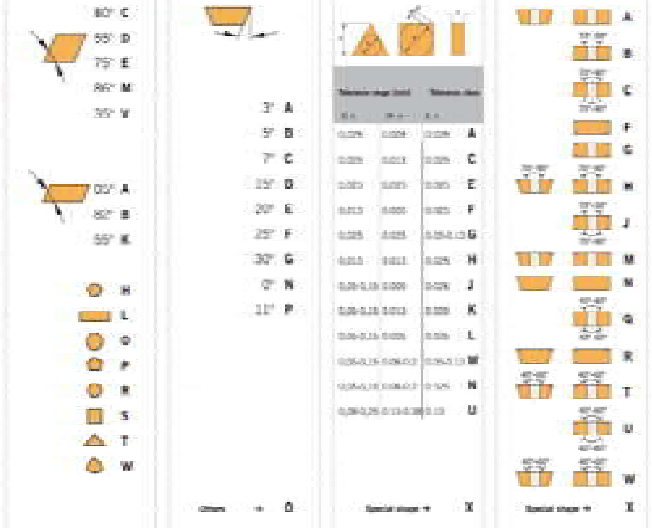
Holder	Screw	Key
...SVXC... 06	......	.....

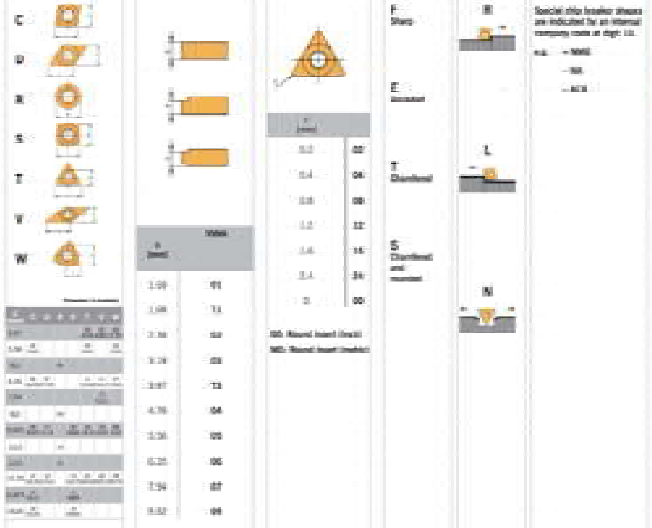
System presentation

ISO indexable inserts

ISO 인서트 규격 선정법

C	N	M	G	16	06	12	E	N	NMG1
INSERT SHAPE 인서트 형상	CLEARANCE ANGLE 인서트 여유각	TOLERANCES 인서트 공차	INSERT TYPE 인서트 타입	EDGE LENGTH 인서트 절削 길이	INSERT THICKNESS 인서트 두께	CORNER RADIUS 코너 R	CUTTING EDGE 인서트 절削 형상	CUTTING DIRECTION 절削 방향	ADDITIONAL CODING 추가 설명





Description of grades

HC – 초경 모재에 코팅 처리

ISO HC indexable inserts

AL10

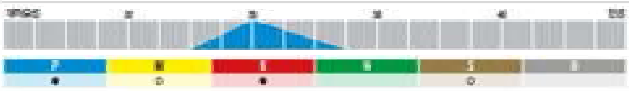
- Specially suitable for very high cutting speeds
- High coating hardness
- Extremely high wear resistance
- 고속 가공에 적합
- 높은 경질 코팅
- 매우 높은 내마모성

PVD

AL20

- For steel, grey cast iron and stainless steel
- High wear resistance and coating hardness
- Good cutting edge stability
- 강, 주철 및 스테인레스 강
- 높은 내마모성 및 코팅 경도
- 우수한 절삭날의 안정성

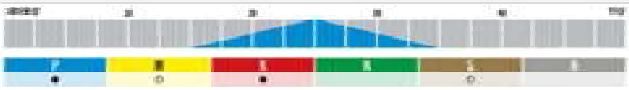
PVD



AP2025

- Universal grade for steel and cast materials
- High degree of toughness
- High wear resistance
- 강 및 주물용
- 우수한 인성
- 높은 내마모성

CVD



AP2035

- For poor conditions and interrupted cuts
- For unstable conditions or poor material surface conditions
- Extremely high degree of toughness and good wear resistance
- 단속 절삭용 적합
- 소재의 표면이 거칠고 불안정한 조건에 적합
- 매우 높은 인성과 우수한 내마모성

CVD

AP2110

- For the high-speed machining of steel
- Suitable for roughing grey cast iron and nodular cast iron
- Maximum safety even under extreme conditions
- 강 고속가공
- 주철 가공에 적합
- 극한의 조건에서도 최대한의 안정성 제공

CVD

AP2310

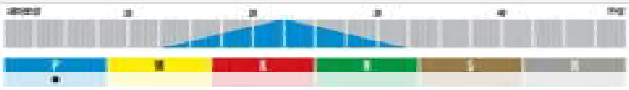
- Main grade for finishing steel
- High wear resistance
- Long tool life
- 강 정삭가공
- 높은 내마모성
- 우수한 공구 수명

CVD

AP2320

- Main grade for medium machining of steel CVD
- Stable against plastic deformation
- High tensile strength
- 강 중절삭 CVD
- 소성변형에 안정적
- 높은 인장 강도

CVD



AP2335

- Main grade for roughing steel
- Extremely tough grade
- For interrupted cuts and poor machining conditions
- 강 황삭가공
- 인성이 매우 높은 재종
- 불안정한 조건의 단속절삭에 적합

CVD

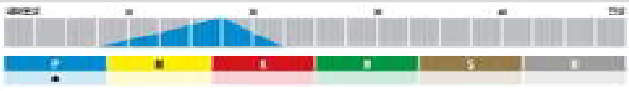
HC – 초경 모재에 코팅 처리

ISO HC indexable inserts

AP2420

- Universal grade for steel and cast materials
- High degree of toughness
- High wear resistance
- 강 및 주철 재질의 두루 적용
- 우수한 인성
- 높은 내마모성

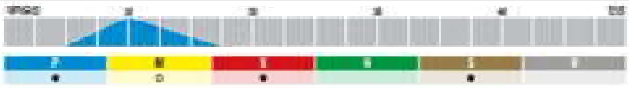
CVD



AP5210

- For finish machining steel and stainless steels
- High resistance to abrasive wear
- Also suitable for materials in the K and S groups
- 강재 및 스테인레스 강재의 정삭용
- 우수한 내마모성 발휘
- 이렇습니다 및 다재다능한 적합

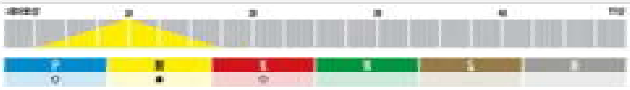
CVD



AM15C

- For finish machining
- For high cutting speeds in good machining conditions
- Not suitable for non-ferrous metals
- 정삭용
- 우수해진 가공 조건에서의 고속 가공에
- 비철소재 및 이러능해진 적합

CVD



AM2035

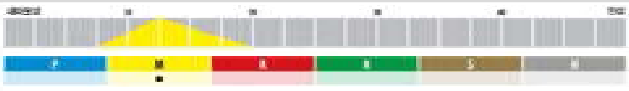
- For machining austenitic stainless steel and high-temperature resistant alloys that are difficult to cut
- Very good wear resistance
- High degree of toughness
- 오스테나이트계 스테인리스강 및 고온 가공이 어려운 내열합금 절삭
- 우수한 내마모성
- 우수한 인성

CVD

AM2110

- For finish machining stainless steel
- Long tool life and wear resistance
- Very hard monolithic coating
- 우수한 공구수명과 내마모성
- 스테인리스 가공에 최적

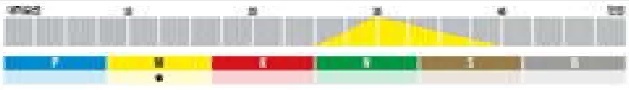
CVD



AM2130

- For medium and heavy machining of stainless steel
- Long tool life and wear resistance
- Suitable for interrupted cuts
- 우수한 경도와 내마모성
- 단속 절삭에 적합

CVD



AM350

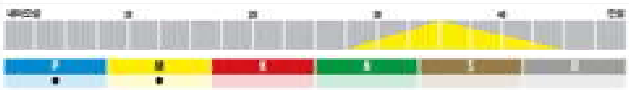
- For medium to high cutting speeds
- Good wear resistance and very good toughness
- Suitable for poor machining conditions
- 고속 가공의 중속에
- 우수한 내마모성과 인성
- 열악한 가공 조건에 적합

CVD

AM35C

- For medium to high cutting speeds
- Good wear resistance and toughness
- Suitable for poor machining conditions
- 고속 가공의 중속에
- 우수한 내마모성과 인성
- 열악한 가공 조건에 적합

CVD



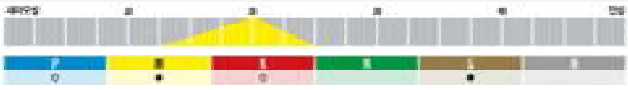
HC – 초경 모재에 코팅 처리

ISO HC indexable inserts

AM5015

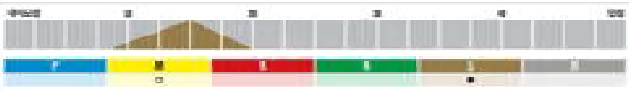
AM5020

AM5025



AM5110

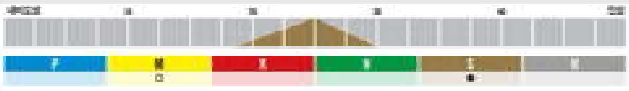
AM5115



AM5120

AM5120+

AM5125



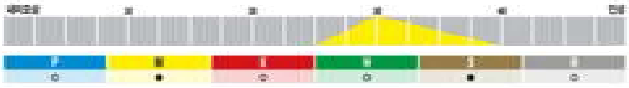
HC – 초경 모재에 코팅 처리

ISO HC indexable inserts

AM5130

- For medium machining stainless steels
- Also suitable for exotic materials
- Universal grade
- 보다 강수적
- 다재다능한 스테인리스 재종
- 다양한재료에 걸쳐 사용하는 재종

PVD



AM5220

- For machining steel, cast steel and stainless steels
- Also suitable for machining super alloys
- High wear resistance
- 강 및 주강, 주강용
- 내습력 합금강에도 적합
- 우수한 내마모성

PVD

AK2110

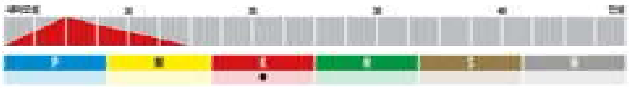
- Stable grade for machining cast iron
- Excellent wear resistance
- Good resistance to edge build-up
- 주철 가공용 안정성이 좋음
- 우수한 내마모성
- 구성인선 방지

CVD

AK2305

- For machining cast iron materials
- Suitable for smooth to slightly interrupted cuts
- Lethalloid coating adhesion with reduced residual stresses
- 주철 가공용
- 약간의 단속에도 우수한 인성을 갖추고 있음
- 잔류 응력 감소로 구성 인선에 탁월

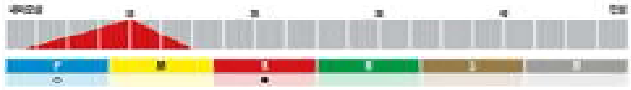
CVD



AK2310

- Universal application for materials of the K group
- Excellent wear resistance
- Good resistance to edge build-up
- 다양 재종에 거친 절삭 사용
- 우수한 내마모성
- 구성인선 방지

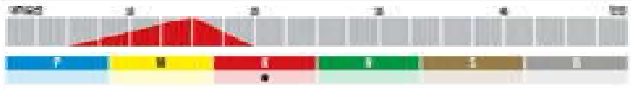
CVD



AK2315

- For machining cast iron materials
- Suitable for slightly interrupted cuts
- High strength coating ensures stable long tool life
- 주철용
- 약간의 단속절삭에 적합
- 고강도 코팅으로 안정적인 공구 수명

CVD



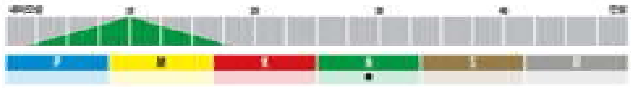
AK2320

- Universal application for materials of the K group
- High wear resistance
- Suitable for interrupted cuts
- 다양 재종에 거친 절삭 사용
- 우수한 내마모성
- 제한적 단속절삭에 적합

CVD

AD2

- For good machining conditions
- Diamond coated
- Very long tool life
- 가장 안정적 적합
- 다이아몬드 코팅
- 우수한 공구 수명



HC – 초경 모재에 코팅 처리

ISO HC indexable inserts

AT10

- For stable machining conditions
- High wear resistance
- For machining non-ferrous metals
- 안정적인 가공상태 유지
- 우수한 내마모성
- 비철금속용

AT20

- For machining non-ferrous metals
- High degree of toughness
- Suitable for poor machining conditions
- 비철금속용
- 강인한 인성
- 열악한 조건에서 적합

PVD1

- Especially for machining non-ferrous metals
- High wear resistance
- Good resistance to plastic deformation
- 비철금속에 적합
- 우수한 내마모성
- 소성변형에 대한 내성이 강함

PVD2

- For machining non-ferrous metals in poor conditions
- High wear resistance
- Good cutting edge stability
- 열악한 조건에서의 비철 가공용
- 우수한 내마모성
- 소성변형에 대한 내성이 강함

AH4205

- Specially for hard machining
- Excellent wear and temperature resistance
- Very long tool life compared to previous cutting materials
- 고경도 소재용 적합
- 우수한 내마모성 및 내열성
- 기존 제품에 비해 공구 수명 개선

HU – 초경 모재에 비코팅

ISO HU indexable inserts

AK10

- Also suitable for titanium and titanium alloys
- For good machining conditions
- Wear-resistant base substrate
- 티타늄 및 티타늄 합금에도 적합
- 가공 안정성 개선
- 내마모성이 우수한 기재

AK1010

- For machining all materials in the N group
- Also suitable for super alloys and cast iron
- For good machining conditions
- 비철 재료의 넓은 소재에 적합
- 내습성 향상으로 안정성 적합
- 가공 안정성 개선

AK1020

- For finish machining
- Well suited for non-ferrous metals
- For smooth cut or slightly varying cutting depths
- 정삭용
- 비철금속에 적합
- 세심한 가공 및 조건을 조금씩도 적합에 적합

AK20

- Well suited for poor machining conditions
- Well suited for cast iron metals
- Good degree of toughness
- 열악한 가공 조건에서 적기 적합
- 우수 가공에 적합
- 주조가 유리함

AS1005

- Ideally suited for cutting molybdenum
- High wear resistance
- Suitable for extremely stable machining conditions
- 몰리브덴에 적합
- 우수한 내마모성
- 절삭 조건을 안정적으로 유지

AS1010

- Very well suited for machining high-temperature resistant alloys
- For machining super alloys
- excellent wear resistance
- 내열합금강 적합에 적합
- 가공이 안정성에 적합
- 우수한 내마모성

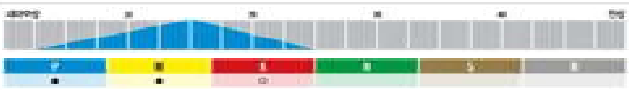
AS1020

- Very well suited for machining high-temperature resistant alloys
- For machining super alloys
- Good interplay between wear resistance and toughness
- 내열합금강 적합에 적합
- 가공이 원기에도 적합
- 내마모성과 인성을 모두 갖춰 시장이 선호하는 적합한 기재

CC – 싸멧 모재에 코팅 처리 ISO CC indexalbe inserts

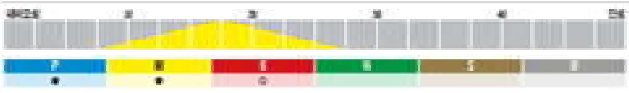
AP6510

- High cutting speeds
- Long tool life
- Good wear resitance
- 고속 가공용
- 우수한 공구 수명
- 우수한 내마모성



AC90C

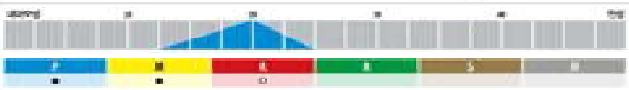
- For finish and medium machining
- Good degree of toughness and wear-resistance
- Good resistance to edge build-up
- 정삭 및 중삭용
- 내마모성과 인성을 우수 인성 싸멧의 장점을 가짐
- 구성인선 방지



CU – 싸멧 모재에 비코팅 ISO CU indexable inserts

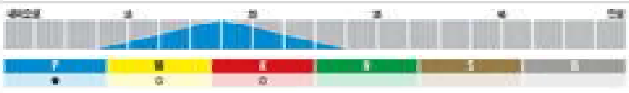
ACE6

- For medium cutting speeds
- Resistant to oxidation and flank wear
- Good resistance to edge build-up
- 중속 가공용 재종
- 산화 및 측면 마모에 우수
- 구성인선 방지



AP6010

- High cutting speeds
- Long tool life
- Good wear resistance
- 고속 가공용
- 우수한 절삭 수명
- 우수한 내마모성



Description of geometries

ISO POSITIVE indexable inserts

FINISH (정삭)

-EN-AEC

- Excellent for machining steel and stainless steel
- Rounded cutting edge for minimum cutting forces
- High process reliability
- 강 및 스테인레스 가공에 적합
- 절삭날을 둥그스름하게 절삭 저항을 최소화
- 신뢰할 수 있는 가공 공정

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
○	●	○	●		

-FN-AEC

- Excellent for machining steel and stainless steel
- Sharp cutting edge
- Good resistance to edge build-up
- 강 및 스테인레스 가공에 적합
- 세라믹 절삭날
- 구성인선 방지

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
○	●	○	●		

-FS

- Ground chip breaker
- Low cutting force
- Good chip control, optimized chip evacuation
- 가공성이 향상된 칩브레이커
- 절삭저항을 최소화
- 우수한 칩 컨트롤 및 배출

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
●	●	○			

-PF2

- Ground geometry
- Sharp cutting edge
- Polishing insert surface
- 가공성이 향상된 칩브레이커
- 세라믹 절삭날
- 인서트 표면을 폴리싱 처리

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	○	■	■	○

-PS2

- High surface quality and tolerance accuracy
- Chip breaker for controlled chip breaking
- Sharp cutting edge
- 높은 표면 품질 및 치수의 정확성
- 칩브레이커 안정 제어 가능(칩브레이커)
- 세라믹 절삭날

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	○	○	■	

FINISHING TO MEDIUM (중간 절삭량의 정삭용)

-AQ

- High surface quality and tolerance accuracy
- Very good chip control
- Universal geometry
- 높은 표면 품질 및 치수의 정확성 가능성
- 우수한 칩 가공성
- 범용적인 절삭형상

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	○			

-AZ

- For machining steel, cast steel and stainless steels
- Ground geometry
- Peripheral chip breaker
- 강, 주강 및 스테인 가공용
- 기본적인 형상
- 인서 외곽 절삭형상

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	○			

ISO POSITIVE indexable inserts

FINISHING TO MEDIUM (중간 절입량의 정삭용)

-PM1

- High process reliability
- Excellent chip control
- Specially for machining steel and stainless steels
- 신뢰할 수 있는 제품 생산
- 뛰어난 칩 컨트롤
- 강 및 스테인레스 가공에 적합

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	■	○	■	○

-PMC

- For machining steels and cast steel
- Good chip evacuation
- Also for use with alloyed steels and stainless steels
- 강 및 주강용
- 우수한 칩 배출
- 합금강 및 스테인레스 가공에도 사용

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	●				

-PMS

- For finishing and medium machining
- Positive cutting edge
- Very well suited for machining of steel
- 중마 및 정삭용
- 포지티브 커팅 엣지 형상
- 강 가공에 매우 적합

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
●	●				

-EN-PS

- Excellent for Swiss type machining applications
- Very good cutting edge stability
- Straight cutting edge
- CNC 자동선반용으로 적합
- 우수한 절삭날의 안정성
- 일자형 절삭 날

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
○	■	○	■	■	

FINISHING TO MEDIUM (중간 절입량의 정삭용)

-FN-PS

- Excellent for Swiss type machining applications
- Sharp, straight cutting edge
- CNC 자동선반용으로 적합
- 샤프한 절삭 날
- 일자형 절삭 날

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
○	■	○	■	■	

-PSF

- For finish machining and work-toughing stainless and heat resistant steels
- Excellent chip control at low cutting depths
- For high tolerance accuracy
- 마르텐 사이트계 스테인레스 및 내열강 정삭용
- 절입량이 적을때 칩 배출이 우수
- 가공 공차가 타이트할때 추천

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
○	○			●	

-U

- Good chip control at low feed rate
- Low cutting force
- Excellent for cutting steel
- 이송량이 낮을때 우수한 칩 컨트롤
- 절삭저항을 최소화
- 강 가공에 적합

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
●	●	○			

ISO HIGH-POSITIVE indexable inserts

MEDIUM (중삭용)

-AM

- Very good chip control at low to medium cutting depths
- Specially designed chip complex
- Smooth chip evacuation and low cutting forces
- 절삭깊이 저/중/고 영역에서 칩 배출이 우수
- 스페셜하게 제작된 Complex가 칩이
- 절삭 부하를 줄이며 부드러운 칩 컨트롤

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	■	■	■	□

-PMT1

- For exotic materials and high-temperature resistance
  Titanium nickel alloys
- High flank wear resistance and very good heat resistance.
- Reliable running times and excellent chip control
- 티타늄과 스테인레스 재질의 가공 및 내열성이 우수
- 측면 마모에 강하고 내열성이 매우 높음
- 안정적인 공구 수명과 우수한 칩 컨트롤

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
□	●	□		●	

-Y

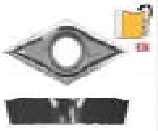
- For machining steel, stainless steel and cast materials
- Sharp cutting edge
- For high surface quality
- 강 및 SUS, 주철 가공용
- 샤프한 절삭 날
- 우수한 표면 조도를 요구할 때 적합

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
●	●	□			

FINISH (정삭용)

-EN-ASF

- Excellent for Swiss type machining applications
- Very good cutting edge stability
- Curved cutting edge
- CNC 자동선반용으로 적합
- 뛰어 안내부 경사로의 가공성
- 우수한 절삭 날



Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	□	■	■	□

-FN-ASF

- Excellent for Swiss type machining applications
- Sharp cutting edge
- Curved cutting edge
- CNC 자동선반용으로 최적
- 샤프한 절삭 날
- 우수한 절삭 날

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
●	●	□	●	●	□

ISO HIGH-POSITIVE indexable inserts

FINISHING TO MEDIUM (중간 절입량의 정삭용)

-EN-ACB

- Similar applications to "-ACU" geometry
- Very good cutting edge stability
- Specially designed chip pimples
- 스크레이핑과 유사한 인서트(Insert) 적용 가능
- 절삭 주속은 절삭성과 같음
- 스테인레스 재질용 인서트(Insert) 참조

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	■	▲	■	○

-FN-ACB

- Similar applications to "-ACU" geometry
- Sharp cutting edge
- Specially designed chip pimples
- 스크레이핑과 유사한 인서트(Insert) 적용 가능
- 세라믹 참조 "-M"
- 스테인레스 재질용 인서트(Insert) 참조

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	■	■	■	○

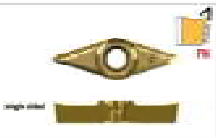
-EN-ALU

- Optimised machining of unstable, thin-walled workpieces
- Very good cutting edge stability
- Good resistance to edge build-up
- 스크레이핑 참조 절삭성과 같음
- 절삭 주속은 절삭성과 같음
- 구성인선 방지

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	■	■	■	○

-FN-ALU

- Optimised machining of unstable, thin-walled workpieces
- Sharp cutting edge
- Good resistance to edge build-up
- 스크레이핑 참조 절삭성과 같음
- 세라믹 참조 "-M"
- 구성인선 방지



Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	■	■	■	○

FINISHING TO ROUGH (많은 절입량의 정삭용)

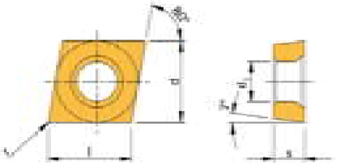
-AWI WIPER

- WIPER geometry
- Very good surface quality achievable
- For finish machining steels, stainless steels and aluminium
- 세라믹재질 참조
- 평면 구성부 불량 인서트를 대체
- 더 많은 이송, 절삭가능 형상용

Finishing		Medium machining		Rough machining	
P	M	K	N	S	H
■	■	○	■	○	○

ISO Indexable inserts

CCGT



				[illegible]			[illegible]	[illegible]		[illegible]					[illegible]					[illegible]				[illegible]
Designation	r	f_n	a_p	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCGT 060202EN	0,20	0,04 - 0,10	0,20 - 0,8					●																
CCGT 060204EN	0,40	0,06 - 0,12	0,60 - 0,8					●																
CCGT 09T302EN	0,20	0,04 - 0,10	0,20 - 1,0					●																
CCGT 09T304EN	0,40	0,06 - 0,12	0,30 - 1,0				●	●																
CCGT 060204FN-ACS	0,40	0,08 - 0,25	0,60 - 3,0	●	●	●									●	●	●	●		●	●			
CCGT 09T304EN-ACS	0,40	0,08 - 0,25	0,60 - 4,0											●							●			
CCGT 09T304FN-ACS	0,40	0,08 - 0,25	0,60 - 4,0	●	●	●									●	●	●	●	●	●	●			
CCGT 09T308EN-ACS	0,80	0,10 - 0,25	0,80 - 4,0											●							●			
CCGT 09T308FN-ACS	0,80	0,10 - 0,25	0,80 - 4,0	●	●	●									●	●	●	●	●	●	●			
CCGT 0602005FN-ALU	0,05	0,02 - 0,06	0,05 - 1,5	●	●										●	●	●	●	●	●	●			
CCGT 060201FN-ALU	0,10	0,02 - 0,08	0,50 - 1,5	●	●											●	●	●	●	●	●			
CCGT 060202FN-ALU	0,20	0,05 - 0,10	0,50 - 2,0	●	●										●	●	●	●	●	●	●			●
CCGT 060204FN-ALU	0,40	0,08 - 0,25	0,60 - 3,0	●	●	●									●	●	●	●	●	●	●			●
CCGT 09T301FN-ALU	0,10	0,02 - 0,08	0,50 - 1,5	●	●										●	●	●	●	●	●	●			
CCGT 09T302FN-ALU	0,20	0,06 - 0,12	0,50 - 2,0	●	●										●	●	●	●	●	●	●			
CCGT 09T304FN-ALU	0,40	0,08 - 0,25	0,60 - 4,0	●	●	●									●	●	●	●	●	●	●			●
CCGT 09T308FN-ALU	0,80	0,10 - 0,30	0,80 - 4,0	●	●										●	●	●	●	●	●	●			
CCGT 09T3005FN-ALU	0,05	0,02 - 0,06	0,50 - 1,5																	●				
CCGT 060201FL-U	0,10	0,04 - 0,10	0,05 - 0,8						●															
CCGT 060201FR-U	0,10	0,04 - 0,10	0,05 - 0,8					●	●															
CCGT 060202FL-U	0,20	0,04 - 0,12	0,20 - 1,0					●	●															
CCGT 060202FR-U	0,20	0,04 - 0,12	0,20 - 1,0						●															
CCGT 09T302FL-U	0,20	0,04 - 0,12	0,20 - 1,0					●	●															
CCGT 09T302FR-U	0,20	0,04 - 0,12	0,20 - 1,0						●															

→

ISO Indexable inserts

CCGT

Designation	r	f_n	a_p	HC			CC	CU		HC					HC					HU				HU
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCGT 0602005FN-ASF	0,05	0,02 - 0,06	0,10 - 1,5	●	●											●				●	●			
CCGT 060201[illegible]-ASF	0,10	0,02 - 0,06	0,10 - 1,5																		●			
CCGT 060201FN-ASF	0,10	0,02 - 0,06	0,10 - 1,5	●	●											●	●			●	●			
CCGT 060202EN-ASF	0,20	0,05 - 0,12	0,20 - 2,0							●		●									●			
CCGT 060202FN-ASF	0,20	0,05 - 0,12	0,20 - 2,0	●	●								●			●	●		●	●	●			
CCGT 060204EN-ASF	0,40	0,08 - 0,25	0,20 - 2,5							●		●									●			
CCGT 060204FN-ASF	0,40	0,08 - 0,25	0,20 - 2,5	●	●								●			●	●			●	●			
CCGT 09T301FN-ASF	0,10	0,02 - 0,06	0,10 - 1,5	●	●											●	●			●	●			
CCGT 09T302EN-ASF	0,20	0,05 - 0,12	0,20 - 2,0							●		●									●			
CCGT 09T302FN-ASF	0,20	0,05 - 0,12	0,20 - 2,0	●	●											●	●			●	●			
CCGT 09T304EN-ASF	0,40	0,08 - 0,25	0,20 - 2,5							●		●									●			
CCGT 09T304FN-ASF	0,40	0,08 - 0,25	0,20 - 2,5	●	●								●			●	●			●	●			
CCGT 09T308FN-ASF	0,80	0,10 - 0,30	0,30 - 3,0		●								●			●	●			●	●			
CCGT 09T3005FN-ASF	0,05	0,02 - 0,06	0,10 - 1,5	●	●											●	●	●		●	●			
CCGT 060202FN-AMI	0,20	0,10 - 0,30	0,90 - 3,0	●												●				●				
CCGT 060204FN-AMI	0,40	0,12 - 0,40	0,50 - 4,0	●												●				●				
CCGT 060208FN-AMI	0,80	0,15 - 0,50	0,70 - 4,0	●												●				●				
CCGT 09T302FN-AMI	0,20	0,10 - 0,30	0,90 - 3,0	●												●				●				
CCGT 09T304FN-AMI	0,40	0,12 - 0,40	0,50 - 4,0	●												●				●				
CCGT 09T308FN-AMI	0,80	0,15 - 0,50	0,70 - 4,0	●												●				●				
CCGT 060201FN-AZ	0,10	0,05 - 0,15	0,60 - 2,0						●															
CCGT 060202FN-AZ	0,20	0,05 - 0,15	0,60 - 2,5						●															
CCGT 060204FN-AZ	0,40	0,05 - 0,15	0,80 - 2,8						●															
CCGT 09T302FN-AZ	0,20	0,08 - 0,28	1,50 - 3,8						●															
CCGT 09T304FN-AZ	0,40	0,08 - 0,28	1,50 - 3,5						●															
CCGT 0602005FN-PS	0,05	0,02 - 0,06	0,10 - 0,5						●		●											●	●	
CCGT 060201EN-PS	0,10	0,02 - 0,06	0,10 - 0,5								●												●	
CCGT 060201FN-PS	0,10	0,02 - 0,06	0,10 - 0,5						●		●											●	●	
CCGT 060202EN-PS	0,20	0,04 - 0,10	0,10 - 0,8								●												●	
CCGT 060202FN-PS	0,20	0,04 - 0,10	0,10 - 0,8						●		●											●	●	
CCGT 060204EN-PS	0,40	0,06 - 0,12	0,20 - 0,8								●												●	
CCGT 060204FN-PS	0,40	0,06 - 0,12	0,20 - 0,8								●											●	●	
CCGT 09T301EN-PS	0,10	0,02 - 0,06	0,10 - 0,5								●												●	
CCGT 09T301FN-PS	0,10	0,02 - 0,06	0,10 - 0,5						●		●											●	●	
CCGT 09T302EN-PS	0,20	0,04 - 0,10	0,10 - 1,0								●												●	
CCGT 09T302FN-PS	0,20	0,04 - 0,10	0,10 - 1,0						●		●											●	●	
CCGT 09T304EN-PS	0,40	0,06 - 0,12	0,20 - 1,0								●												●	
CCGT 09T304FN-PS	0,40	0,06 - 0,12	0,20 - 1,0						●		●											●	●	
CCGT 09T3005FN-PS	0,05	0,02 - 0,06	0,10 - 0,5						●		●											●	●	

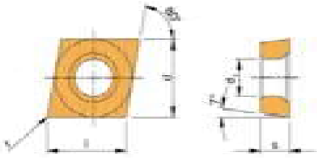
HC = Solid carbide coated
HU = Solid carbide uncoated
CC = Cermet (ceramic/Cermet coated)
CU = Cermet uncoated

P	■	■	■	■	■	■	■	○	○	○	○		○	○	○	○					
M	○	○	■	■	■	○	■	■	■	■	○		○	○	○	○					
K	■	■	○	○	○	○	○		○	○			○	○	○	○	○	○	○	○	
N							○			○	○	■	■	■	■	■	■	■	■	■	○
S	○	○	■				■		■	■	■		○	○	○	○	○	○		○	■
H							○			○											

■ Main application
○ Secondary application

ISO Indexable inserts

CCGW



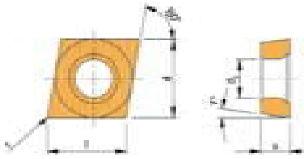
P	
M	
K	
N	
S	
H	●

● Main application
○ Secondary application

Designation	r	f_n	a_p	HC [illegible]
CCGW 060202EN	0.2	0.02 - 0.05	0.08 - 1.5	●
CCGW 060204EN	0.4	0.02 - 0.05	0.08 - 1.5	●
CCGW 09T304EN	0.4	0.02 - 0.05	0.08 - 2.0	●
CCGW 09T308EN	0.8	0.02 - 0.05	0.08 - 2.0	●

HC = Solid carbide coated

CCGX



P	○	
M	●	
K	○	○
N		●
S	●	○
H		

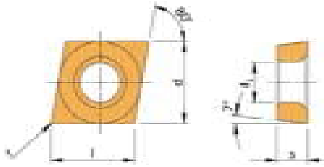
● Main application
○ Secondary application

Designation	r	f_n	a_p	HC [illegible]	HW [illegible]
CCGX 060200F L/R	0.0	0.04 - 0.10	0.05 - 0.4	●	●
CCGX 060201F L/R	0.1	0.04 - 0.10	0.10 - 0.8	●	●
CCGX 060202F L/R	0.2	0.04 - 0.12	0.10 - 1.0	●	●
CCGX 060204F L/R	0.4	0.04 - 0.12	0.10 - 1.0	●	●
CCGX 09T300F L/R	0.0	0.04 - 0.10	0.05 - 0.4	●	●
CCGX 09T301F L/R	0.1	0.04 - 0.10	0.10 - 0.8	●	●
CCGX 09T302F L/R	0.2	0.04 - 0.12	0.10 - 1.0	●	●
CCGX 09T304F L/R	0.4	0.04 - 0.12	0.10 - 1.0	●	●

HC = Solid carbide coated
HW = Solid carbide uncoated

ISO Indexable inserts

CCMT



Designation	r	f_n	a_p	HC				CC	CU		HC					CC	HC	
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CCMT 060202EN-AM	0.2	0.05 - 0.12	0.30 - 2.0								●			●				
CCMT 060204EN-AM	0.4	0.08 - 0.20	0.40 - 2.0			●	●				●			●				
CCMT 060208EN-AM	0.8	0.12 - 0.28	0.60 - 2.0			●	●				●			●				
CCMT 09T302EN-AM	0.2	0.05 - 0.12	0.30 - 3.0											●				
CCMT 09T304EN-AM	0.4	0.08 - 0.25	0.40 - 3.0			●	●				●			●				
CCMT 09T308EN-AM	0.8	0.12 - 0.30	0.50 - 3.0		●	●	●				●			●				
CCMT 120404EN-AM	0.4	0.10 - 0.28	0.40 - 3.0			●	●				●			●				
CCMT 120408EN-AM	0.8	0.12 - 0.32	0.50 - 3.5			●	●				●			●				
CCMT 060202EN-AQ	0.2	0.05 - 0.12	0.30 - 2.0						●									
CCMT 060204EN-AQ	0.4	0.08 - 0.20	0.40 - 2.0						●									
CCMT 09T302EN-AQ	0.2	0.05 - 0.12	0.30 - 2.0						●									
CCMT 09T304EN-AQ	0.4	0.08 - 0.25	0.40 - 3.0					●	●									
CCMT 09T308EN-AQ	0.8	0.12 - 0.32	0.50 - 3.0					●										
CCMT 060202EN-PM1	0.2	0.05 - 0.12	0.30 - 2.0							●	●			●				
CCMT 060204EN-PM1	0.4	0.08 - 0.20	0.40 - 2.0		●	●				●	●	●		●			●	
CCMT 09T302EN-PM1	0.2	0.05 - 0.12	0.30 - 2.0			●				●	●			●				
CCMT 09T304EN-PM1	0.4	0.08 - 0.25	0.40 - 3.0	●	●	●				●	●			●				
CCMT 09T308EN-PM1	0.8	0.12 - 0.32	0.50 - 3.0			●					●	●		●				●
CCMT 120404EN-PM1	0.4	0.10 - 0.25	0.40 - 3.0			●					●							
CCMT 120408EN-PM1	0.8	0.12 - 0.32	0.50 - 3.5			●					●			●				
CCMT 060202EN-PMC	0.2	0.04 - 0.16	0.28 - 1.8					●										
CCMT 060204EN-PMC	0.4	0.05 - 0.18	0.30 - 2.0					●										
CCMT 09T304EN-PMC	0.4	0.08 - 0.20	0.30 - 2.0					●										
CCMT 120404EN-PMC	0.4	0.10 - 0.26	0.30 - 3.0					●										
CCMT 060202EN-PSF	0.2	0.03 - 0.10	0.20 - 1.0										●		●			
CCMT 060204EN-PSF	0.4	0.05 - 0.10	0.20 - 1.5										●		●			
CCMT 09T302EN-PSF	0.2	0.05 - 0.10	0.20 - 2.0										●		●			
CCMT 09T304EN-PSF	0.4	0.10 - 0.20	0.20 - 2.0										●		●			
CCMT 060202EN-PS2	0.2	0.04 - 0.12	0.10 - 1.0		●	●					●	●		●				
CCMT 060204EN-PS2	0.4	0.05 - 0.16	0.10 - 1.5			●					●	●		●				
CCMT 09T302EN-PS2	0.2	0.04 - 0.12	0.10 - 1.0		●	●					●	●		●				
CCMT 09T304EN-PS2	0.4	0.05 - 0.16	0.10 - 1.5		●	●					●	●		●				
CCMT 060202EN-PMT1	0.2	0.05 - 0.20	0.20 - 1.5								●	●		●				
CCMT 060204EN-PMT1	0.4	0.08 - 0.20	0.20 - 1.5								●	●		●				
CCMT 09T302EN-PMT1	0.2	0.05 - 0.20	0.20 - 2.0								●	●		●				
CCMT 09T304EN-PMT1	0.4	0.08 - 0.25	0.20 - 2.0								●	●		●				

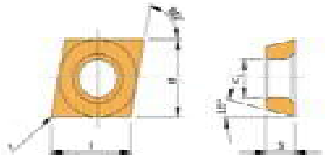
HC = Carbide coated
CC = Cermet coated
CN = Cermet uncoated

P	●	●	●	●	●	●	●		○		○		●	○	○
M					●	●	○	●	●	○	●	○	●		
K	○				○	○	○		○		○		○	●	●
N									○		○				
S									●	●	●	●			
H									○		○				

● Main application
○ Secondary application

ISO Indexable inserts

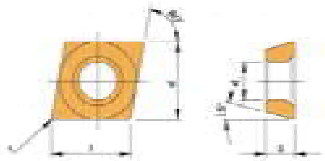
CDGT



Designation	s	L	r_ε	HC	HU
CDGT 040202T-UR	2.2	6.94 - 6.97	0.2 - 1	●	◆
CDGT 040204FL-...	4.4	6.94 - 6.97	0.2 - 1	●	

HC = Cemented carbide coated
HU = Solid carbide uncoated

CDGW

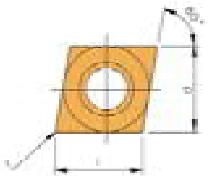


Designation	s	L	r_ε	HC	HU
CDGW 040202R-...	2.2	6.97 - 6.99	0.2 - 1	●	◆

HC = Carbide coated
HU = Carbide uncoated

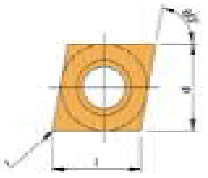
ISO Indexable inserts

CDMT



Designation	s	L	r_ε	HC	HU
CDMT 040202R-PM2	2.2	6.94 - 6.97	0.2 - 0.8	●	◆
CDMT 040204R-PM2	4.4	6.94 - 6.97	0.2 - 0.8	●	◆

HC = Carbide coated
HU = Carbide uncoated

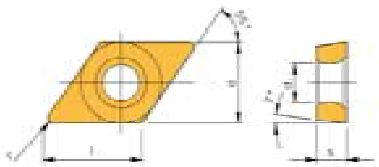


Designation	s	L	r_ε	CU	HC
CDMT 040202R-PM2	2.2	6.94 - 6.97	0.4 - 2.0	✚	
CDMT 040204R-PM2	4.4	6.94 - 6.96	0.4 - 2.0	✚	✚

HC = Carbide coated
CU = Cermet uncoated

ISO Indexable inserts

DCGT



Designation	l	l_n	d_n	NC			CC	CC	NC							NC	NC				NC	NC			NC
				AC3215	AC315	AH8015	AH8005	AC215	AH8025	AH8045	AH8035	AH8055	AH8035+	AH8065	AH8075	AC5015	AC415	AC515	AH745	AH7045	AC615	AH905	AH9015	AC6015	AH9025
DCGT 070202ER	7.75	7.48 - 7.62	2.38												●									
DCGT 070202EN	7.75	7.48 - 7.62	2.38					●																
DCGT 070202ER	7.75	7.48 - 7.62	2.38					●																
DCGT 070202EN	7.75	7.48 - 7.62	2.38					●	●															
DCGT 070204EN	7.75	7.48 - 7.62	2.38				●	●	●															
DCGT 070204EN-ALN	7.75	7.48 - 7.62	2.38	●	●	●											●	●	●		●	●			
DCGT 070204EN-ALN	7.75	7.48 - 7.62	2.38										●										●		
DCGT 070204ER-ALN	7.75	7.48 - 7.62	2.38	●	●	●											●	●	●		●	●			
DCGT 070204ER-ALN	7.75	7.48 - 7.62	2.38										●										●		
DCGT 070204FN-ALN	7.75	7.48 - 7.62	2.38	●	●	●											●	●	●		●	●			
DCGT 070204FN-ALN	7.75	7.48 - 7.62	2.38																				●		
DCGT 070204FR-ALN	7.75	7.48 - 7.62	2.38																				●		
DCGT 070204FR-ALN	7.75	7.48 - 7.62	2.38																				●		
DCGT 070208FN-ALU	7.75	7.48 - 7.62	2.38	●	●												●	●	●		●	●			
DCGT 070208FR-ALU	7.75	7.48 - 7.62	2.38	●	●												●	●	●		●	●			
DCGT 070208ER-ALU	7.75	7.48 - 7.62	2.38	●	●	●											●	●	●		●	●			●
DCGT 070208FN-ALU	7.75	7.48 - 7.62	2.38	●	●												●	●	●		●	●			
DCGT 070208FR-ALU	7.75	7.48 - 7.62	2.38	●	●												●	●	●		●	●			
DCGT 070208ER-ALU	7.75	7.48 - 7.62	2.38	●	●	●											●	●	●		●	●			●
DCGT 070208FN-ALU	7.75	7.48 - 7.62	2.38	●	●												●	●	●		●	●			
DCGT 070208FR-ALU	7.75	7.48 - 7.62	2.38	●	●												●	●	●		●	●			
DCGT 070208ER-ALU	7.75	7.48 - 7.62	2.38	●	●	●											●	●	●		●	●			●

ISO Indexable inserts

DCGT

Designation	r	f_n	a_p	HC			CE	CB		HC					HC	HC					HQ				HQ
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DCGT 04T002ZN-ASF	0,20	0,01 - 0,06	0,01 - 0,5								●													●	
DCGT 04T002FN-ASF	0,20	0,01 - 0,09	0,01 - 0,5																			●			
DCGT 0702005FN-ASF	0,05	0,02 - 0,06	0,1 - 1,5	●	●												●	●			●	●			
DCGT 0702008ZN-ASF	0,08	0,02 - 0,06	0,1 - 1,5								●													●	
DCGT 0702008FN-ASF	0,08	0,02 - 0,08	0,1 - 1,5								●										●			●	
DCGT 070201ZN-ASF	0,10	0,02 - 0,06	0,1 - 1,5							●												●			
DCGT 070201FN-ASF	0,10	0,02 - 0,06	0,1 - 1,5	●	●												●	●			●	●			
DCGT 0702015ZN-ASF	0,15	0,05 - 0,12	0,2 - 2,0							●	●													●	
DCGT 0702015FN-ASF	0,15	0,05 - 0,12	0,2 - 2,0								●										●			●	
DCGT 070202ZN-ASF	0,20	0,05 - 0,13	0,2 - 2,0							●	●	●										●		●	
DCGT 070202FN-ASF	0,20	0,05 - 0,12	0,2 - 2,0	●	●								●				●	●		●	●	●			
DCGT 070204ZN-ASF	0,40	0,08 - 0,25	0,2 - 2,5							●	●	●										●		●	
DCGT 070204FN-ASF	0,40	0,08 - 0,28	0,3 - 2,5	●	●								●				●	●		●	●	●			
DCGT 11T301ZN-ASF	0,10	0,02 - 0,06	0,1 - 1,5							●												●			
DCGT 11T301FN-ASF	0,10	0,02 - 0,06	0,1 - 1,5	●	●												●	●			●	●			
DCGT 11T302ZN-ASF	0,20	0,05 - 0,13	0,2 - 2,0							●	●	●										●		●	
DCGT 11T302FN-ASF	0,20	0,05 - 0,12	0,2 - 2,0	●	●												●	●		●	●	●			
DCGT 11T304ZN-ASF	0,40	0,08 - 0,25	0,2 - 2,5							●	●	●										●		●	
DCGT 11T304FN-ASF	0,40	0,08 - 0,25	0,2 - 2,5	●	●								●				●	●		●	●	●			
DCGT 11T308ZN-ASF	0,80	0,10 - 0,30	0,3 - 3,0							●		●										●			
DCGT 11T308FN-ASF	0,80	0,10 - 0,30	0,3 - 3,0	●	●								●				●	●			●	●			
DCGT 11T3005FN-ASF	0,05	0,02 - 0,06	0,1 - 1,5	●	●												●	●			●	●			
DCGT 11T3008ZN-ASF	0,08	0,02 - 0,05	0,1 - 1,5								●													●	
DCGT 11T3008FN-ASF	0,08	0,02 - 0,06	0,1 - 1,5								●										●			●	
DCGT 11T3015ZN-ASF	0,15	0,05 - 0,12	0,2 - 2,0							●	●													●	
DCGT 11T3015FN-ASF	0,15	0,05 - 0,12	0,2 - 2,0																		●			●	
DCGT 11T3025ZN-ASF	0,25	0,08 - 0,25	0,2 - 2,5							●															
DCGT 070202FN-AM1	0,20	0,10 - 0,30	0,3 - 3,0	●													●				●				
DCGT 070204FN-AM1	0,40	0,12 - 0,40	0,5 - 4,0	●													●				●				
DCGT 070208FN-AM1	0,80	0,15 - 0,50	0,5 - 4,0	●													●				●				
DCGT 11T302FN-AM1	0,20	0,10 - 0,30	0,3 - 3,0	●													●				●				
DCGT 11T304FN-AM1	0,40	0,12 - 0,40	0,5 - 4,0	●													●				●				
DCGT 11T308FN-AM1	0,80	0,15 - 0,50	0,5 - 4,0	●						●							●				●				
DCGT 070201FN-AZ	0,10	0,08 - 0,22	1,0 - 3,0						●																
DCGT 070202FN-AZ	0,20	0,08 - 0,22	1,0 - 3,0						●																
DCGT 070204FN-AZ	0,40	0,08 - 0,22	1,0 - 3,0				●		●																
DCGT 11T302FN-AZ	0,20	0,10 - 0,35	1,5 - 3,8						●																
DCGT 11T304FN-AZ	0,40	0,10 - 0,35	1,5 - 3,8						●																
DCGT 11T302FN-FS	0,20	0,04 - 0,12	0,1 - 1,0					●																	
DCGT 11T304FN-FS	0,40	0,05 - 0,16	0,1 - 1,5					●																	

ISO Indexable inserts

DCGT

Designation	r	l_1	s_1	NC				CC		CU		NC									NC	NC								NU		NU
DCGT 070202ER-PS	0.05	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ER-PF	0.05	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ZER-PS	0.10	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ZER-PF	0.10	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ER-PS	0.20	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ER-PF	0.20	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ZER-PS	0.20	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070202ZER-PF	0.20	3.40 - 3.60	1.19 - 1.21								●		●																●	○		
DCGT 070204ER-PS	0.40	3.30 - 3.50	1.19 - 1.21								●		●																●	○		
DCGT 070204ER-PF	0.40	3.30 - 3.50	1.19 - 1.21								●		●																●	○		
DCGT 11T302ER-PS	0.20	5.50 - 5.80	2.1 - 2.3			●				●			●																●	○		
DCGT 11T302ER-PF	0.20	5.50 - 5.80	2.1 - 2.3			●				●			●																●	○		
DCGT 11T304ER-PS	0.40	5.30 - 5.50	2.1 - 2.3										●																●	○		
DCGT 11T304ER-PF	0.40	5.30 - 5.50	2.1 - 2.3										●																●	○		
DCGT 11T308ER-PS	0.80	5.10 - 5.30	2.1 - 2.3										●																●	○		
DCGT 11T308ER-PF	0.80	5.10 - 5.30	2.1 - 2.3										●																●	○		
DCGT 11T312ER-PS	1.20	5.00 - 5.20	2.1 - 2.3										●																●	○		
DCGT 11T312ER-PF	1.20	5.00 - 5.20	2.1 - 2.3										●																●	○		
DCGT 070202FL-U	0.20	3.34 - 3.72	1.1 - 1.3							●	●																					
DCGT 070202FR-U	0.20	3.34 - 3.72	1.1 - 1.3								●																					
DCGT 11T302FR-U	0.20	5.34 - 5.72	2.1 - 2.3								●																					

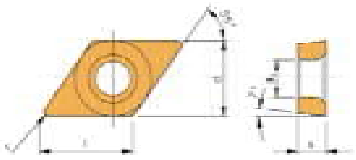
NC = Carbide coated
NU = Carbide uncoated
CC = Cermet coated
CU = Cermet uncoated

P	●	●	●	●	●	●	●	○	○	○	○										○		○	○	○	○						
M	○	○	●	●	●	○	●	●	●	●	○										○		○	○	○	○						
K	●	●	○	○	○	○	○		○	○											○		○	○	○	○	○	○	○	○		
N							○			○	○										●	●	●	●	●	●	●	●	●	●		
S	○	○	●				●		●	●	●										●		○	○	○	○	○	○		○		
H							○			○											○											

● Main application
○ Secondary application

ISO Indexable inserts

DCGW



Designation	r	l_1	s_1	HC
DCGW 070202R/L	0.2	0.20 - 0.35	0.08 - 1.6	●
DCGW 070204R/L	0.4	0.20 - 0.45	0.08 - 1.6	●
DCGW 070208R/L	0.8	0.20 - 0.55	0.08 - 1.6	●
DCGW 11T302R/L	0.2	0.20 - 0.35	0.08 - 3.0	●
DCGW 11T304R/L	0.4	0.20 - 0.45	0.08 - 3.0	●
DCGW 11T308R/L	0.8	0.20 - 0.55	0.08 - 3.0	●

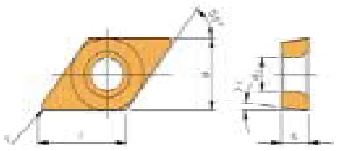
HC = Carbide coated

P	
M	
K	
N	
S	
H	●

● Main application
○ Secondary application

ISO Indexable inserts

DCGX



Designation	r	l_1	s_1	HC	HU
DCGX 070202P L/R	0.2	0.20 - 0.34	0.08 - 0.4	●	●
DCGX 070201P L/R	0.1	0.20 - 0.34	0.08 - 1.0	●	●
DCGX 070202P L/R	0.2	0.20 - 0.34	0.08 - 1.0	●	●
DCGX 11T302P L/R	0.2	0.20 - 0.34	0.08 - 2.5	●	●
DCGX 11T304P L/R	0.4	0.20 - 0.34	0.08 - 2.5	●	●
DCGX 11T301P L/R	0.1	0.20 - 0.34	0.08 - 2.5	●	●
DCGX 11T302P L/R	0.2	0.20 - 0.34	0.08 - 2.5	●	●
DCGX 11T304P L/R	0.4	0.20 - 0.34	0.08 - 2.5	●	●

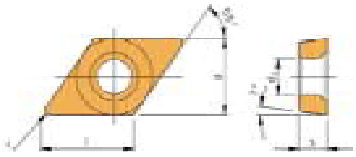
HC = Carbide coated
HU = Carbide uncoated

P	○	
M	●	
K	○	○
N		●
S	●	○
H		

● Main application
○ Secondary application

ISO Indexable inserts

DCMT



Designation	r	L	a_p	HC		CC	CU	HC						CC	HC
				AP25N	AP30H	AH905	AH915	AC5	AH905	AH725	AH915	AH925	AH945	AH955	LC610C	AC610C
DCMT 070202EN-AM	0.2	0.05 ~ 0.13	0.40 ~ 2.0						✦			✦			
DCMT 070204EN-AM	0.4	0.08 ~ 0.30	0.40 ~ 3.0		●				✦			✦			
DCMT 070208EN-AM	0.8	0.13 ~ 0.75	0.50 ~ 3.0		✦				✦			✦			
DCMT 11T302EN-AM	0.2	0.05 ~ 0.13	0.40 ~ 2.0						✦			✦			
DCMT 11T304EN-AM	0.4	0.08 ~ 0.75	0.40 ~ 3.0	●	●	●			●			●			
DCMT 11T308EN-AM	0.8	0.13 ~ 0.33	0.50 ~ 3.0	✦	✦	✦			✦			✦			
DCMT 070202EN-AQ	0.2	0.05 ~ 0.13	0.40 ~ 2.0				●								
DCMT 070204EN-AQ	0.4	0.08 ~ 0.30	0.40 ~ 3.0				✦	✦							
DCMT 11T302EN-AQ	0.2	0.05 ~ 0.13	0.40 ~ 2.0			●	●							✦	
DCMT 11T304EN-AQ	0.4	0.08 ~ 0.75	0.40 ~ 3.0			●	●								
DCMT 11T308EN-AQ	0.8	0.13 ~ 0.33	0.50 ~ 3.0			●	✦								
DCMT 070202EN-PM1	0.2	0.05 ~ 0.13	0.40 ~ 2.0	●				✦							
DCMT 070204EN-PM1	0.4	0.08 ~ 0.30	0.40 ~ 2.0	✦	✦			✦	✦	✦		✦			
DCMT 11T302EN-PM1	0.2	0.05 ~ 0.13	0.40 ~ 2.0		●			✦	✦			✦			
DCMT 11T304EN-PM1	0.4	0.08 ~ 0.75	0.40 ~ 3.0	●	●			✦	✦	●		✦			●
DCMT 11T308EN-PM1	0.8	0.13 ~ 0.33	0.50 ~ 3.0	✦	✦			✦	✦	✦		✦			✦
DCMT 070202EN-PMC	0.2	0.05 ~ 0.13	0.40 ~ 2.0			●									
DCMT 11T302EN-PMC	0.2	0.05 ~ 0.13	0.40 ~ 2.0			●									
DCMT 11T304EN-PMC	0.4	0.08 ~ 0.30	0.50 ~ 2.0			●									
DCMT 11T304EN-PMS	0.4	0.08 ~ 0.20	0.30 ~ 2.0								●				
DCMT 070202EN-PS2	0.2	0.04 ~ 0.13	0.20 ~ 1.0	●				✦	✦		✦				
DCMT 070204EN-PS2	0.4	0.08 ~ 0.30	0.20 ~ 1.5	✦	✦			✦	✦		✦				
DCMT 11T302EN-PS2	0.2	0.04 ~ 0.13	0.20 ~ 1.0	✦	✦			✦	✦		✦				
DCMT 11T304EN-PS2	0.4	0.08 ~ 0.30	0.20 ~ 1.5	●	●			●	●		●				

ISO Indexable inserts

DCMT

Designation	r	L	a_p	HC		CC	CU	HC						CC	HC
				AP25N	AP30H	AH905	AH915	AC5	AH905	AH725	AH915	AH925	AH945	AH955	LC610C	AC610C
DCMT 070202EN-PM7	0.2	0.05 ~ 0.13	0.2 ~ 2.0									✦		✦		
DCMT 070204EN-PM7	0.4	0.08 ~ 0.30	0.2 ~ 2.0									✦		✦		
DCMT 11T302EN-PM7	0.2	0.05 ~ 0.13	0.2 ~ 2.0									✦		✦		
DCMT 11T304EN-PM7	0.4	0.08 ~ 0.30	0.2 ~ 2.0									✦		✦		

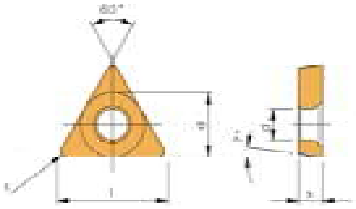
HC = Carbide coated
CC = Cermet coated
CU = Carbide uncoated

P	●	●	●	●	●	●		○		○		○	●	○
M				●	●	○	●	●	○	●	○	○	●	
K				○	○	○		○		○		○	○	●
N								○		○		●		
S								●	●	●	●	●		
H								○		○		○		

● 1st choice application
○ Secondary application

ISO Indexable inserts

TCGT



Designation	s	L	dL	HC		HC		HC				HU
				AH120	AH130	AH905	AH9030	AH8	AH725	AH740	AH745	AH8135
TCGT 090204PN-ACE	0.90	0.08 - 0.35	0.4 - 3.0		●			●		●		●
TCGT 090202PN-ALU	0.20	0.05 - 0.12	0.4 - 1.2	●	●			●	●	●	●	●
TCGT 090204PN-ALU	0.40	0.08 - 0.24	0.4 - 2.0	●	●			●	●	●	●	●
TCGT 110202PN-ALU	0.20	0.05 - 0.12	0.4 - 1.2	●	●			●	●	●	●	●
TCGT 110204PN-ALU	0.40	0.08 - 0.24	0.4 - 2.0	●	●			●	●	●	●	●
TCGT 110208PN-ALU	0.80	0.08 - 0.24	0.4 - 3.0	●	●			●	●	●	●	●
TCGT 090202FN-ALU	0.20	0.05 - 0.12	0.4 - 1.2	●	●			●	●	●	●	●
TCGT 090204FN-ALU	0.40	0.08 - 0.24	0.4 - 2.0	●	●			●	●	●	●	●
TCGT 110202FN-ALU	0.20	0.05 - 0.12	0.4 - 1.2	●	●			●	●	●	●	●
TCGT 110204FN-ALU	0.40	0.08 - 0.24	0.4 - 2.0	●	●			●	●	●	●	●
TCGT 090202FN-ASF	0.20	0.05 - 0.12	0.4 - 2.0	●	●							●
TCGT 090202GN-ASF	0.20	0.05 - 0.12	0.4 - 2.0			●	●					●
TCGT 110202FN-ASF	0.20	0.05 - 0.20	0.4 - 1.2	●	●			●	●			●
TCGT 110204FN-ASF	0.40	0.08 - 0.24	0.4 - 2.0	●	●			●	●			●

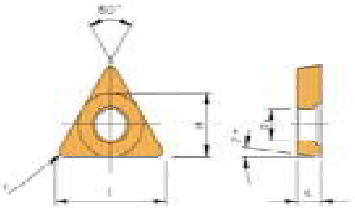
HC = Carbide coated
HU = Carbide uncoated

P	●	●	■	□		□	□	□	□			
M	□	□	■	■		□	□	□	□			
K	●	●	△	△		△	△	△	△	△	△	
N			◇			●	●	●	●	●	●	
S	□	□	■	■		□	□	□	□	□	□	
H			□									

● Main application
△ Secondary application

ISO Indexable inserts

TCGW



P												
M												
K												□
N												●
S												□
H												

● Main application
□ Secondary application

Designation	s	L	dL	HU
				AH8135
TCGW 090204FN	0.4	0.02 - 0.24	0.08 - 3.17	●
TCGW 110204FN	0.4	0.02 - 0.24	0.08 - 3.17	●

HU = Carbide uncoated

TCMT

Designation	s	L	dL	HC				CU	HC			
				AP120	AP130	AP725	AP740	AC10	AH710	AH725	AH740	AH745
TCMT 090204N-MM	0.4	0.08 - 0.35	0.4 - 3.0						●			
TCMT 110202N-MM	0.2	0.08 - 0.20	0.4 - 2.0	●	●	●				●	●	
TCMT 110208N-MM	0.8	0.12 - 0.35	0.8 - 2.0	●					●			
TCMT 110202N-MJ	0.2	0.08 - 0.20	0.4 - 2.0					●				
TCMT 110208N-MJ	0.8	0.12 - 0.35	0.8 - 2.0					●				
TCMT 110202N-PM	0.2	0.08 - 0.20	0.4 - 2.0			●						
TCMT 110202N-PM	0.4	0.08 - 0.20	0.4 - 2.0			●					●	●

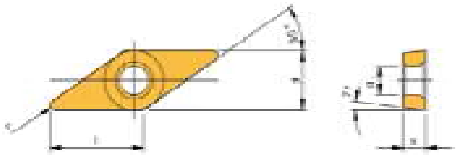
HC = Carbide coated
CU = Cermet uncoated

P	■	●	●	●	●	●	●	○	○		○	
M	○					●	○	●	●	●	●	
K						○	○					○
N												○
S	□							○	■			■
H												○

● Main application
□ Secondary application

ISO Indexable inserts

VCGT



Designation	r	s_1	s_2	HC			CU		HC												HC	HC					HC		HC						HC
				AH120	AH130	AP01H	HC01	CP01H	AM10C	AM05S	AM08M	AM08R	AM10J	AM10T2	AM08R	AH120	AP01	AP05	AP10	PH01	PH02	AH120	AM08R	AM10T2	AM10R	AM10M	AM10R	AM10M	AM08R	AM10M	AM10R	AM10T2	AM08R	AM10M	AM10R	AM10T2	AM08R
VCGT 070202ER	0.20	0.075 ~ 0.15	0.40 ~ 1.0						●																		●								
VCGT 070202ER	0.40	0.080 ~ 0.18	0.40 ~ 1.0						✚																										
VCGT 110304ER-ALU2	0.40	0.080 ~ 0.18	0.80 ~ 2.0	●	●	●										●	●	●	●	●	●	●													
VCGT 110304ER-ALU2	0.80	0.100 ~ 0.30	0.80 ~ 2.0		✚													✚																	
VCGT 110304ER-ALU2	0.40	0.080 ~ 0.25	0.80 ~ 2.0	●													●		●		●														
VCGT 110308ER-ALU2	0.80	0.080 ~ 0.25	0.80 ~ 3.0		●											●	●	●	●		●	●													
VCGT 160404ER-ALU2	0.40	0.080 ~ 0.25	0.80 ~ 3.0	●	✚											✚	✚	✚	✚	●	✚	✚													
VCGT 160408ER-ALU2	0.80	0.100 ~ 0.30	0.80 ~ 3.0	●	✚											✚	✚	✚	✚		✚	✚													
VCGT 160412ER-ALU2	1.20	0.100 ~ 0.40	1.00 ~ 3.0	●	●												●	●	●		●	●													
VCGT 070202ER-ALU2	0.2	0.05 ~ 0.20	0.20 ~ 1.0																			✚													
VCGT 070202ER-ALU2	0.2	0.05 ~ 0.08	0.20 ~ 1.0																			✚													
VCGT 070204ER-ALU2	0.4	0.05 ~ 0.10	0.20 ~ 1.0																			✚													
VCGT 070202ER-ALU2	0.01	0.02 ~ 0.05	0.20 ~ 1.0	●	✚												●	●	●	●	●	✚													
VCGT 070202ER-ALU2	0.2	0.05 ~ 0.08	0.20 ~ 1.0	●	✚											✚	●	●	●	●	●	✚													
VCGT 070202ER-ALU2	0.2	0.05 ~ 0.08	0.20 ~ 1.0	●	✚											✚	✚	✚	✚	✚	✚	✚													
VCGT 070204ER-ALU2	0.4	0.05 ~ 0.10	0.20 ~ 1.0	●	✚											✚	✚	✚	✚	✚	✚	✚													
VCGT 110302ER-ALU2	0.2	0.05 ~ 0.08	0.40 ~ 2.0	●	●												●	●	●	●	●	●													
VCGT 110302ER-ALU2	0.2	0.05 ~ 0.12	0.20 ~ 2.0	●	✚	●										✚	✚	✚	✚	✚	✚	✚													
VCGT 110304ER-ALU2	0.4	0.08 ~ 0.15	0.40 ~ 2.0	●	✚	●										✚	✚	✚	✚	✚	✚	✚													
VCGT 110308ER-ALU2	0.8	0.10 ~ 0.30	0.80 ~ 3.0	●	✚											✚	✚	✚	✚	✚	✚	✚													
VCGT 110302ER-ALU2	0.05	0.02 ~ 0.05	0.20 ~ 1.0	●												●	●		●		●	✚													
VCGT 110302ER-ALU2	0.1	0.03 ~ 0.08	0.20 ~ 1.0	●	●												●	●	●	●	●	✚													
VCGT 110302ER-ALU2	0.2	0.05 ~ 0.10	0.20 ~ 2.0	●	✚	●										✚	✚	✚	✚	✚	✚	✚													
VCGT 110304ER-ALU2	0.4	0.08 ~ 0.20	0.40 ~ 2.0	●	✚											✚	✚	✚	✚	✚	✚	✚													
VCGT 140404ER-ALU2	0.4	0.08 ~ 0.25	0.80 ~ 3.0	●	✚											✚	✚	✚	✚	✚	✚	✚													
VCGT 140408ER-ALU2	0.8	0.08 ~ 0.25	0.80 ~ 3.0	●	✚												✚	✚	✚	✚	✚	✚													
VCGT 160401ER-ALU2	0.1	0.03 ~ 0.08	0.40 ~ 1.8	●	✚												✚	✚	✚	✚	✚	✚													
VCGT 160402ER-ALU2	0.2	0.05 ~ 0.12	0.40 ~ 2.0																			✚													
VCGT 160402ER-ALU2	0.2	0.05 ~ 0.12	0.40 ~ 2.0	●	●	●											●	●	●	●	●	✚													
VCGT 160404ER-ALU2	0.4	0.08 ~ 0.20	0.40 ~ 3.0																			✚													
VCGT 160408ER-ALU2	0.8	0.08 ~ 0.25	0.80 ~ 3.0	●	✚	●										✚	✚	✚	✚	✚	✚	✚													
VCGT 160412ER-ALU2	1.2	0.10 ~ 0.40	1.00 ~ 3.0	●	●	●										✚	✚	✚	✚	✚	✚	✚													

ISO Indexable inserts

VCGT

				HC			CU		HC						HC	HC					MU				MU
Designation	r	f_n	a_p	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VCGT [illegible]	0,2	[illegible]	[illegible]								●											●		●	
VCGT [illegible]	0,05	[illegible]	[illegible]	●																	●				
VCGT [illegible]	0,05	[illegible]	[illegible]							●															
VCGT [illegible]	0,1	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,2	[illegible]	[illegible]										●									●			
VCGT [illegible]	0,2	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,4	[illegible]	[illegible]										●									●			
VCGT [illegible]	0,4	[illegible]	[illegible]	●	●										●		●	●			●	●			
VCGT [illegible]	0,05	[illegible]	[illegible]	●	●									●			●	●			●	●			
VCGT [illegible]	0,08	[illegible]	[illegible]								●													●	
VCGT [illegible]	0,08	[illegible]	[illegible]								●										●			●	
VCGT [illegible]	0,15	[illegible]	[illegible]								●													●	
VCGT [illegible]	0,15	[illegible]	[illegible]							●	●													●	
VCGT [illegible]	0,15	[illegible]	[illegible]								●										●			●	
VCGT [illegible]	0,1	[illegible]	[illegible]							●												●			
VCGT [illegible]	0,1	[illegible]	[illegible]	●	●									●			●	●			●	●			
VCGT [illegible]	0,2	[illegible]	[illegible]							●	●	●										●		●	
VCGT [illegible]	0,2	[illegible]	[illegible]																					●	
VCGT [illegible]	0,2	[illegible]	[illegible]	●	●								●	●			●	●			●	●		●	
VCGT [illegible]	0,35	[illegible]	[illegible]							●															
VCGT [illegible]	0,4	[illegible]	[illegible]							●	●	●										●		●	
VCGT [illegible]	0,4	[illegible]	[illegible]	●	●								●	●			●	●		●	●	●			
VCGT [illegible]	0,05	[illegible]	[illegible]																		●	●			
VCGT [illegible]	0,1	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,2	[illegible]	[illegible]							●												●			
VCGT [illegible]	0,2	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,4	[illegible]	[illegible]							●												●			
VCGT [illegible]	0,4	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,1	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,2	[illegible]	[illegible]							●		●										●			
VCGT [illegible]	0,2	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,4	[illegible]	[illegible]							●		●										●			
VCGT [illegible]	0,4	[illegible]	[illegible]	●	●												●	●		●	●	●			
VCGT [illegible]	0,8	[illegible]	[illegible]							●												●			
VCGT [illegible]	0,8	[illegible]	[illegible]	●	●												●	●			●	●			
VCGT [illegible]	0,20	0,100–0,30	0,50–3,0	●													●				●				
VCGT [illegible]	0,40	0,120–0,40	0,50–4,0	●													●				●				
VCGT [illegible]	0,80	0,150–0,50	0,70–4,0	●													●				●				
VCGT [illegible]	0,40	0,120–0,40	0,50–4,0	●													●				●				
VCGT [illegible]	0,80	0,150–0,50	0,70–4,0	●													●				●				
VCGT [illegible]	0,20	0,100–0,30	1,50–3,5					●																	
VCGT [illegible]	0,35	0,100–0,30	1,50–3,5					●																	
VCGT [illegible]	0,40	0,100–0,30	1,50–3,5					●																	
VCGT [illegible]	0,03	0,015–0,12	0,02–2,0							●													●	●	
VCGT [illegible]	0,03	0,015–0,12	0,02–2,0							●													●	●	
VCGT [illegible]	0,08	0,015–0,12	0,02–2,0							●													●	●	
VCGT [illegible]	0,08	0,015–0,12	0,02–2,0							●													●	●	
VCGT [illegible]	0,10	0,015–0,12	0,02–2,0																				●	●	
VCGT [illegible]	0,10	0,015–0,12	0,02–2,0							●													●	●	
VCGT [illegible]	0,20	0,015–0,12	0,02–2,0							●													●	●	
VCGT [illegible]	0,20	0,015–0,12	0,02–2,0							●													●	●	

ISO Indexable inserts

VCGT

Designation	r	f	a_p	AL10	AL20	AP2110	AL26	AM9010	AM 5U	AM5015	AM5020	AM5025	AM5110	AM5120	AM5225	A40	AT10	AT20	PS01	PS07	AL8	AS26	AR5010	AR5020	AS1005
				HC			CU		HC						HC	HC					HU				HU
VCGT 080201EN-PS3	0,10	0,040 - 0,15	0,05 - 1,0					●						●									●		
VCGT 080202EN-PS3	0,20	0,040 - 0,20	0,10 - 1,5					●						●									●		
VCGT 080204EN-PS3	0,40	0,080 - 0,30	0,10 - 1,5					●						●									●		
VCGT 1103005FN-PS	0,05	0,040 - 0,10	0,10 - 1,0					●			●												●	●	
VCGT 1103008FN-PS	0,08	0,040 - 0,10	0,10 - 1,0								●												●	●	
VCGT 1103015FN-PS	0,15	0,040 - 0,10	0,10 - 1,0								●												●	●	
VCGT 110301FN-PS	0,10	0,040 - 0,10	0,10 - 1,0					●			●						●						●	●	
VCGT 110302FN-PS	0,20	0,040 - 0,10	0,20 - 1,5					●			●						●						●	●	
VCGT 110304N-PS	0,40	0,060 - 0,18	0,30 - 2,0					●			●												●	●	
VCGT 1604005FN-PS	0,05	0,040 - 0,10	0,10 - 1,0																				●	●	
VCGT 160401FN-PS	0,10	0,040 - 0,10	0,10 - 1,0								●												●	●	
VCGT 160402FN-PS	0,20	0,040 - 0,10	0,20 - 1,5								●												●	●	
VCGT 160404FN-PS	0,40	0,080 - 0,20	0,30 - 2,0								●												●	●	
VCGT 110301FU-U	0,10	0,040 - 0,15	0,05 - 1,0					●																	
VCGT 110301FN-U	0,10	0,040 - 0,15	0,05 - 1,0					●																	
VCGT 110302FU-U	0,20	0,080 - 0,20	0,10 - 3,5					●																	
VCGT 110302FN-U	0,20	0,040 - 0,20	0,10 - 2,5					●																	
VCGT 160404FU-Y	0,40	0,050 - 0,16	0,10 - 1,5				●																		
VCGT 160404FN-Y	0,40	0,050 - 0,16	0,10 - 1,5				●																		
VCGT 070202FR	0,20	0,040 - 0,20	0,10 - 2,5				●																		

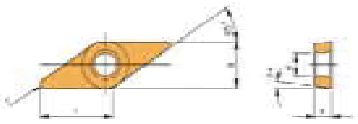
HC = Carbide coated
HU = Carbide uncoated
CU = Cermet uncoated

	AL10	AL20	AP2110	AL26	AM9010	AM 5U	AM5015	AM5020	AM5025	AM5110	AM5120	AM5225	A40	AT10	AT20	PS01	PS07	AL8	AS26	AR5010	AR5020	AS1005
P	■	■	■	■	■	○	■	○	○	○	○	■		○	○	○	○					
M	○	○	■	■	○	■	■	■	■	■	■	■		○	○	○	○					
K	■	■	○	○	○	○	○		○	○	○	○		○	○	○	○	○	○	○	○	
N							○			○	○		■	■	■	■	■	■	■	■	■	○
S	○	○	■				■		■	■	■	■		○	○	○	○	○	○		○	■
H							○			○	○											

■ Main application
○ Secondary application

ISO Indexable inserts

VCGW



Designation	r	s_1	s_2	HC	HU
VCGW 040202R	0.1	0.02 - 0.04	0.04 - 1.0	✚	
VCGW 070202R	0.2	0.02 - 0.06	0.07 - 1.0	✚	
VCGW 110308R	0.4	0.02 - 0.09	0.08 - 2.0		●

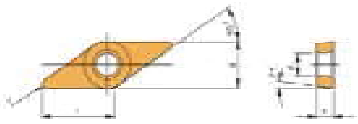
HU = Carbide uncoated

P		
M		
K	▽	
N	●	
S	○	
H		●

● First application
○ Secondary application

ISO Indexable inserts

VCGX



Designation	r	s_1	s_2	HC	HU
VCGX 110404F LR	0.1	0.04 - 0.10	0.05 - 1.0	✚	●
VCGX 110404P LR	0.2	0.04 - 0.20	0.10 - 2.0	✚	●
VCGX 110408P LR	0.4	0.05 - 0.20	0.15 - 2.5	✚	●
VCGX 160404FR	0.1	0.04 - 0.20	0.05 - 1.0	✚	●
VCGX 160408P LR	0.2	0.04 - 0.20	0.10 - 1.0	✚	●
VCGX 160408P LR	0.4	0.04 - 0.20	0.10 - 3.0	✚	●

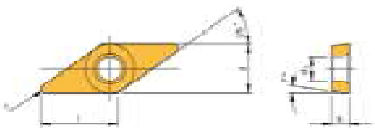
HC = Carbide coated
HU = Carbide uncoated

P	○	
M	●	
K	○	○
N		●
S	●	○
H		

● First application
○ Secondary application

ISO Indexable inserts

VCMT



Designation	r	s_1	s_2	HC AP25N	AP30N	AP35N	AP35S	AP45S	CU BX90S	BX95S	HC AH905Y	AH915Y	AH925Y	AH930Y	AH940Y	AH945Y	AH955Y	CU AC900G	HC AE315E	BE315E
VCMT 110302EN-AM	0.2	0.08 - 0.20	0.4 - 1.0			●	●					●					●			
VCMT 110304EN-AM	0.4	0.08 - 0.20	0.4 - 1.0			●	●					●					●			
VCMT 110302EN-AM	0.2	0.13 - 0.25	0.5 - 2.0	●	●															
VCMT 110304EN-AM	0.4	0.08 - 0.20	0.4 - 2.0			●	●	●				●					●			
VCMT 110404EN-AM	0.8	0.13 - 0.30	0.5 - 3.0				●	●				●					●			
VCMT 110410EN-AM	1.2	0.13 - 0.30	0.5 - 3.0	●							●									
VCMT 110301EN-AS	0.1	0.08 - 0.20	0.4 - 1.0						●											
VCMT 110304EN-AS	0.4	0.08 - 0.20	0.4 - 2.0						●									●		
VCMT 070202EN-PM1	0.2	0.05 - 0.15	0.3 - 1.0							●										
VCMT 070204EN-PM1	0.4	0.07 - 0.15	0.4 - 1.0							●							●			
VCMT 110301EN-PM1	0.1	0.08 - 0.20	0.4 - 1.0							●										
VCMT 110304EN-PM1	0.4	0.08 - 0.20	0.4 - 1.0			●	●			●		●	●				●		●	
VCMT 110404EN-PM1	0.8	0.08 - 0.20	0.4 - 2.0			●	●			●		●	●				●			●
VCMT 110404EN-PM1	0.8	0.13 - 0.30	0.5 - 3.0				●			●		●	●				●			
VCMT 070202EN-PS2	0.2	0.04 - 0.20	0.1 - 1.0							●								●		
VCMT 070204EN-PS2	0.4	0.04 - 0.20	0.1 - 1.0							●								●		
VCMT 110302EN-PS2	0.2	0.07 - 0.2	0.1 - 1.0			●	●					●					●			
VCMT 110304EN-PS2	0.4	0.08 - 0.20	0.1 - 1.0			●	●					●					●			
VCMT 110304EN-PS2	0.4	0.08 - 0.18	0.1 - 1.0			●	●					●					●			
VCMT 110302EN-PSF	0.2	0.05 - 0.15	0.2 - 1.0										+				+			
VCMT 110304EN-PSF	0.4	0.05 - 0.20	0.2 - 1.0										●				●			
VCMT 110302EN-PMT1	0.2	0.08 - 0.20	0.4 - 2.0									●	●				●			
VCMT 110304EN-PMT1	0.4	0.08 - 0.20	0.4 - 2.0									●	●				●			
VCMT 110304EN-PMT 1	0.4	0.13 - 0.25	0.8 - 3.0									●	●				●			
VCMT 160404EN-PMT 1	0.8	0.13 - 0.30	0.8 - 3.0									●	●				●			

P	●	●	●	●	●	●	●	○		○				○		○	●	○	○	
M	○	○				●	○	●	●	●	○			●		○	●			
K	●					○	○			○				○		○	○	○	●	●
N										○				○		■				
S	○	○						●		●	●			●		●				
H										○				○		○				

Recommended cutting data

Carbide coated

Material group	Structure of the material groups and identification letters		Brinell hardness HB	Tensile strength Rm (N/mm²)	Chipping groups	Cutting speed Vc (m/min) HC												
P	Unalloyed steel																	
	Low alloyed steel																	
	High alloyed steel and high alloyed tool steel																	
	Stainless steel																	
M	Stainless steel																	
K	Malleable cast iron																	
	Cast iron																	
	Cast iron with nodular graphite																	
	Cast iron with nodular graphite																	
N	Aluminium alloys long chipping																	
	Coated aluminium alloys																	
	Magnesium alloys																	
	Copper and copper alloys (Brass / Bronze)																	
	Non-ferrous materials																	
S	High temperature resistant alloys																	
	Titanium alloys																	
H	Hardened steel																	

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

HC = Carbide coated

P	■	■	■				■	■	■	■	■	■	■	■				
M	□	□	□				□					■	□	□	■	■		
K	■	■	■									□	■					
N																		
S	□	□	□				□					■		■				
H																		

■ Main application
□ Secondary application

Recommended cutting data

Carbide coated

Material group	Structure of the material groups and identification letters		Brinell hardness HB	Tensile strength Rm (N/mm²)	Chipping group	Cutting speed Vc (m/min) HC AWX080	AWX090	AWX110	AWX120	AWX130	AWX140	AWX150	AWX160	AWX170	AWX180	AWX190
P	Unalloyed steel	annealed	125	420	1	180 - 240	220 - 300	250 - 340	220 - 300	180 - 240	220 - 300	250 - 340	220 - 300	180 - 240	220 - 300	250 - 340
		annealed	180	620	1	170 - 230	210 - 280	240 - 320	210 - 280	170 - 230	210 - 280	240 - 320	210 - 280	170 - 230	210 - 280	240 - 320
		hardened and tempered	210	700	1	170 - 230	210 - 280	240 - 320	210 - 280	170 - 230	210 - 280	240 - 320	210 - 280	170 - 230	210 - 280	240 - 320
		annealed	180	620	1	160 - 220	200 - 270	230 - 310	200 - 270	160 - 220	200 - 270	230 - 310	200 - 270	160 - 220	200 - 270	230 - 310
		hardened and tempered	300	1010	1	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300
	Low alloyed steel	Machining steel (short chipping)	annealed	225	760	1	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260
		annealed	175	590	1	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300
		hardened and tempered	300	1010	1	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300	190 - 260	150 - 210	190 - 260	220 - 300
		hardened and tempered	375	1260	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		annealed	275	925	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		hardened and tempered	350	1180	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
	High alloyed steel and high alloyed tool steel	annealed	275	925	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		hardened	300	1010	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		annealed	200	680	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
	Stainless steel	ferritic / martensitic, annealed	200	675	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		austenitic, hardened and tempered	250	1150	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
M	Stainless steel	austenitic, stabel	180	675	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		austenitic, precipitation hardened PH	350	1010	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		austenitic-ferritic, Duplex	230	780	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
K	Malleable cast iron	ferritic	130	420	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		pearlitic	230	780	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
	Cast iron	low tensile strength	180	600	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		high tensile strength / malleable	260	870	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
	Cast iron with nodular graphite	ferritic	160	600	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
		pearlitic	260	900	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
	ADI Steel		300	1050	1	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290	180 - 250	140 - 200	180 - 250	210 - 290
N	Aluminium alloys long chipping	not heat treatable	30	-	1	-	-	-	-	-	-	-	-	-	-	-
		heat treatable, heat treated	100	300	1	-	-	-	-	-	-	-	-	-	-	-
	Coated aluminium alloys	≤ 12 % Si, not heat treatable	75	260	1	-	-	-	-	-	-	-	-	-	-	-
		> 12 % Si, heat treatable, heat treated	90	270	1	-	-	-	-	-	-	-	-	-	-	-
		> 12 % Si, not heat treatable	130	440	1	-	-	-	-	-	-	-	-	-	-	-
	Magnesium alloys	≤ 12 % Si, not heat treatable	75	150	1	-	-	-	-	-	-	-	-	-	-	-
	Copper and copper alloys (Brass / Bronze)	free-cutting, containing Lead	110	370	1	-	-	180 - 270	270	180 - 270	180 - 270	180 - 270	180 - 270	180 - 270	180 - 270	180 - 270
		Brass, Bronze	90	370	1	-	-	200 - 300	300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300
		Cu-alloys, short chipping	110	350	1	-	-	200 - 300	300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300
	Non-ferrous materials	Duroplastics	100	350	1	-	-	200 - 300	300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300	200 - 300
		Lead alloys (without abrasive filling materials)	-	-	1	-	-	150 - 200	200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200
		Composites (without abrasive filling materials)	-	-	1	-	-	150 - 200	200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200
		Plastic glas fiber reinforced (GRP)	-	-	1	-	-	150 - 200	200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200
		Plastic carbon fibre reinforced (CRP)	-	-	1	-	-	150 - 200	200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200
		Plastic wood fibre reinforced (WRP)	-	-	1	-	-	150 - 200	200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200	150 - 200
		Graphite (soft)	60 Shore	-	1	-	-	-	-	-	-	-	-	-	-	-
S	High temperature resistant alloys	Fe-based	annealed	200	670	2	20 - 30 - 40	-	20 - 40 - 60	20 - 30 - 40	20 - 40 - 60	20 - 40 - 60	20 - 40 - 60	20 - 40 - 60	20 - 30 - 40	20 - 30 - 40
		Fe-based	hard treated	280	950	2	5 - 20 - 30	-	5 - 40 - 60	5 - 40 - 60	5 - 40 - 60	5 - 40 - 60	5 - 40 - 60	5 - 40 - 60	5 - 20 - 30	5 - 40 - 60
		Ni- or Co-alloys	annealed	250	800	2	5 - 15 - 25	-	5 - 30 - 50	5 - 30 - 50	5 - 30 - 50	5 - 30 - 50	5 - 30 - 50	5 - 30 - 50	5 - 15 - 25	5 - 30 - 50
		Ni- or Co-alloys	hardened	350	1200	2	5 - 10 - 20	-	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 10 - 20	5 - 20 - 40
		Ni- or Co-alloys	casting	320	1070	2	4 - 10 - 15	-	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 20 - 40	5 - 10 - 15	5 - 20 - 40
	Titanium alloys	Pure titan		290	870	2	-	-	50 - 100 - 150	-	-	-	-	-	30 - 100 - 150	50 - 100 - 150
		α- and β-alloys, heat treated		370	1240	2	-	-	40 - 80 - 120	-	30 - 60 - 90	40 - 80 - 120	40 - 80 - 120	-	40 - 80 - 120	40 - 80 - 120
		β-alloys		410	1380	2	-	-	40 - 80 - 120	-	30 - 60 - 90	40 - 80 - 120	40 - 80 - 120	-	40 - 80 - 120	40 - 80 - 120
	Niobium alloys			200	600	2	-	-	-	-	-	-	-	-	-	-
	Wolfram alloys			350	1010	2	-	-	-	-	-	-	-	-	-	-
H	Hardened steel	hardened	50 HRC	-	1	-	-	20 - 40 - 60	-	-	20 - 40 - 60	20 - 40 - 60	-	20 - 40 - 60	20 - 40 - 60	-
		hardened	55 HRC	-	1	-	-	10 - 20 - 30	-	-	10 - 20 - 30	10 - 20 - 30	-	10 - 20 - 30	10 - 20 - 30	-
		hardened	60 HRC	-	1	-	-	5 - 10 - 15	-	-	5 - 10 - 15	5 - 10 - 15	-	5 - 10 - 15	5 - 10 - 15	-
	Hardened cast iron	hardened	55 HRC	-	1	-	-	10 - 20 - 30	-	-	10 - 20 - 30	10 - 20 - 30	-	10 - 20 - 30	10 - 20 - 30	-

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

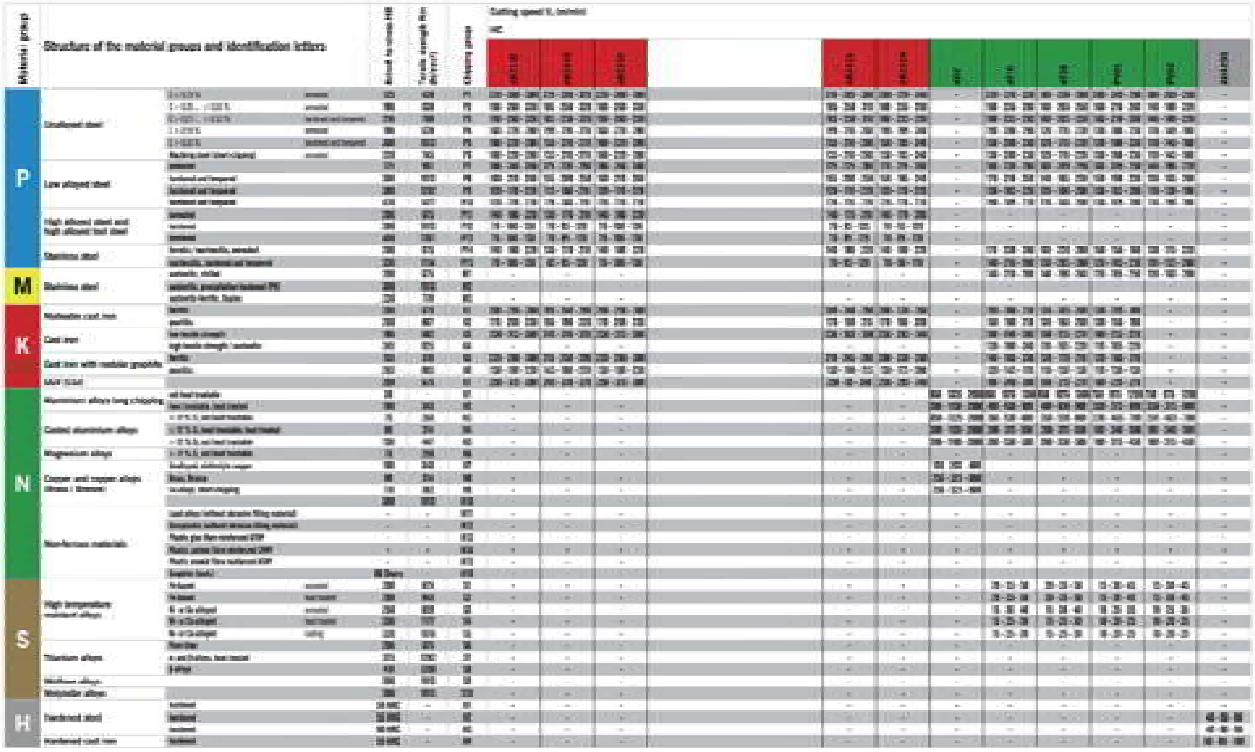
HC = Carbide coated

P	○	○	■	○	○	○	■	○	○	■	○	■		
M	■	■	■	■	■	■	■	■	■	■	○	■		
K			○		○	○	○	○		○	○	○		
N			○		○	○	○	○	○	■				
S	○		■		■	■	■	■	■	■	■	■		
H			○			○	○	○		○	○			

■ Main application
○ Secondary application

Recommended cutting data

Carbide coated



The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

HC = Carbide coated

Recommended cutting data

Carbide coated

Material group	Structure of the material groups and identification letters		Brinell hardness HB	Tensile strength Rm (N/mm²)	Chipping group	Cutting speed Vc (m/min)							
						ap 0.5	ap 1.0	ap 2.0		ap 0.5	ap 1.0	ap 2.0	
P	Unalloyed steel												
	Low alloyed steel												
	High alloyed steel and high alloyed tool steel												
	Stainless steel												
M	Stainless steel												
K	Malleable cast iron												
	Cast iron												
	Cast iron with nodular graphite												
	ADI/ Cast												
N	Aluminium alloys long chipping												
	Coated aluminium alloys												
	Magnesium alloys												
	Copper and copper alloys (brass / bronze)												
	Non-ferrous materials												
S	High temperature resistant alloys												
	Titanium alloys												
	Tungsten alloys												
	Molybdenum alloys												
H	Hardened steel												
	Hardened cast iron												

The recommended cutting data are only approximate values.
It may be necessary to adjust them to meet individual machining applications.

No. = Carbide insertion

P									
M									
K	□	□	□		□				
N	■	■	■		■				
S	○		○		○	●	●	●	
H									●

■ Main application
○ Secondary application

Recommended cutting data — Cermet coated

Material group	Structure of the material groups and identification letters		Brinell hardness HB	Tensile strength Rm (N/mm²)	Chipping group	Cutting speed Vc (m/min) CT
P	Unalloyed steel					
	Low alloyed steel					
	High alloyed steel and high alloyed tool steel					
	Stainless steel					
M	Stainless steel					
K	Malleable cast iron					
	Cast iron					
	Cast iron with nodular graphite					
N	Aluminium alloys long chipping					
	Coated aluminium alloys					
	Magnesium alloys					
	Copper and copper alloys (Brass / Bronze)					
	Non-ferrous materials					
S	High temperature resistant alloys					
	Titanium alloys					
	Wolfram alloys					
	Molybdän alloys					
H	Hardened steel					
	Hardened cast iron					

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

CT = Cermet coated

P	■	■
M	■	■
K	□	□
N		
S		
H		

■ Main application
□ Secondary application

Recommended cutting data — Cermet uncoated

Material group	Structure of the material groups and identification letters		Brinell hardness HB	Tensile strength Rm (N/mm²)	Chipping group	Cutting speed Vc (m/min) CU
P	Unalloyed steel					
	Low alloyed steel					
	High alloyed steel and high alloyed tool steel					
	Stainless steel					
M	Stainless steel					
K	Malleable cast iron					
	Cast iron					
	Cast iron with nodular graphite					
N	Aluminium alloys long chipping					
	Coated aluminium alloys					
	Magnesium alloys					
	Copper and copper alloys (Brass / Bronze)					
	Non-ferrous materials					
S	High temperature resistant alloys					
	Titanium alloys					
	Wolfram alloys					
	Molybdän alloys					
H	Hardened steel					
	Hardened cast iron					

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

CU = Cermet uncoated

P	■	■
M	■	■
K	□	□
N		
S		
H		

■ Main application
□ Secondary application