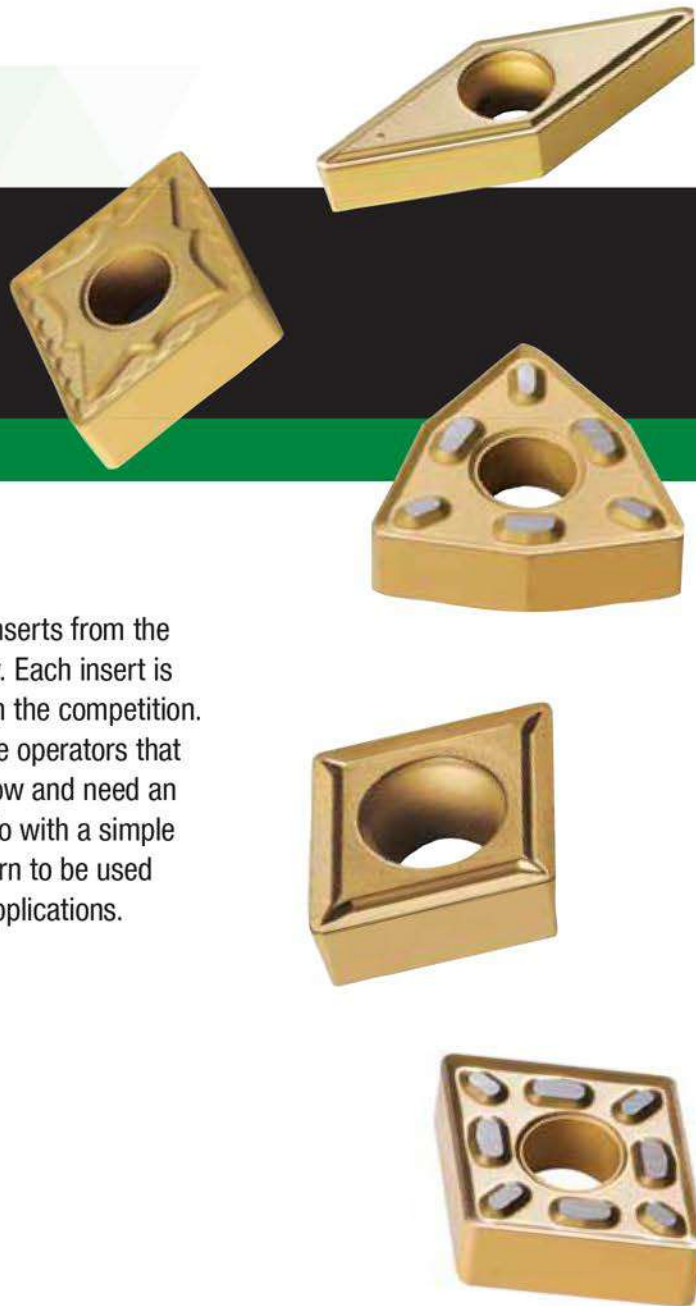


The Gold Standard for Value •
WIDIA™ VariTurn™

VariTurn

WIDIA VariTurn is the cost-effective line of inserts from the brand you already know and trust for quality. Each insert is 100% manufactured by WIDIA to outperform the competition. WIDIA VariTurn offers the versatility for those operators that are cutting steel today and cast iron tomorrow and need an insert to get the job done. A focused portfolio with a simple grade selection method allows WIDIA VariTurn to be used for up to approximately 80% of all turning applications.

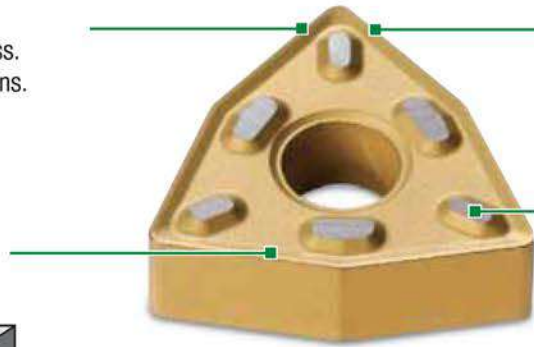
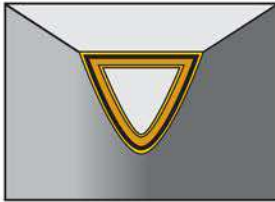
- Engineered to optimise performance.
- Gold coating on every insert.
- Proven grade technologies.



Post-coat treatment

- Improves edge toughness.
- Wide range of applications.

MT-CVD/CVD-
TiN-TiCN-Al2O3-TiN



Improved edge toughness

- Provides smooth outer surface to reduce forces, friction, and workpiece sticking.

Post-coat grinding

- Provides secure seating surface.

Getting the Most from Every Insert

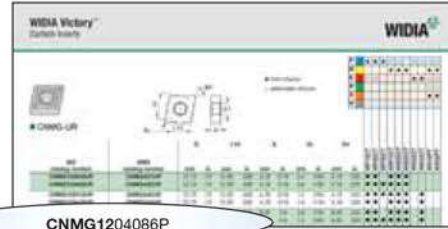
WIDIA™ VariTurn™ products make it simple to get the most out of your inserts, and your money. Every insert is gold, which exposes wear as the tool continues to be used. This makes it easy to detect when an insert is ready to be changed — maximising the product's value and protecting the workpiece. Also, because WIDIA VariTurn inserts can be used in most applications, a single insert can take on any number of tasks, thus reducing your inventory. WIDIA VariTurn products are also reliable enough to cut steel, stainless steel, cast iron, and high-temperature alloys, enabling quick changes in workpiece materials without the need to swap inserts, saving time and money.

WIDIA VariTurn Options

This versatile line offers a simple geometry selection system, eight grades, and eight geometries, including negative rake and screw-on. With these options, WIDIA VariTurn inserts cover 80% of all general turning applications.

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

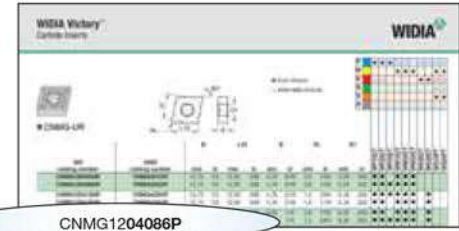


CNMG1204086P

C		N		M		G		12																																																																																																																																																																																																																										
Insert Shape		Insert Clearance Angle		Tolerance Class		Insert Features		Size																																																																																																																																																																																																																										
H	Hexagon 120°	A	3°	<p>Tolerances apply prior to edge prep and coating</p> <p>D = Theoretical diameter of the insert inscribed circle S = Thickness B = See figures below</p>		N		<p>"Code for mm cutting edge length "L10"</p> <table border="1"> <thead> <tr> <th>"D"</th> <th>mm</th> <th>C</th> <th>D</th> <th>R</th> <th>S</th> <th>T</th> <th>V</th> <th>W</th> </tr> </thead> <tbody> <tr><td>3,97</td><td>S4</td><td>04</td><td>03</td><td>03</td><td>06</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>4,76</td><td>04</td><td>05</td><td>04</td><td>04</td><td>08</td><td>08</td><td>S3</td><td>-</td></tr> <tr><td>5,56</td><td>05</td><td>06</td><td>05</td><td>05</td><td>09</td><td>09</td><td>03</td><td>-</td></tr> <tr><td>6,00</td><td>-</td><td>-</td><td>06</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>6,35</td><td>06</td><td>07</td><td>06</td><td>06</td><td>11</td><td>11</td><td>04</td><td>-</td></tr> <tr><td>7,94</td><td>08</td><td>09</td><td>07</td><td>07</td><td>13</td><td>13</td><td>05</td><td>-</td></tr> <tr><td>8,00</td><td>-</td><td>-</td><td>08</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>9,52</td><td>09</td><td>11</td><td>09</td><td>09</td><td>16</td><td>16</td><td>06</td><td>-</td></tr> <tr><td>10,00</td><td>-</td><td>-</td><td>10</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>11,11</td><td>11</td><td>13</td><td>11</td><td>11</td><td>19</td><td>19</td><td>07</td><td>-</td></tr> <tr><td>12,00</td><td>-</td><td>-</td><td>12</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>12,70</td><td>12</td><td>15</td><td>12</td><td>12</td><td>22</td><td>22</td><td>08</td><td>-</td></tr> <tr><td>14,29</td><td>14</td><td>17</td><td>14</td><td>14</td><td>24</td><td>24</td><td>09</td><td>-</td></tr> <tr><td>15,88</td><td>16</td><td>19</td><td>15</td><td>15</td><td>27</td><td>27</td><td>10</td><td>-</td></tr> <tr><td>16,00</td><td>-</td><td>-</td><td>16</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>17,46</td><td>17</td><td>21</td><td>17</td><td>17</td><td>30</td><td>30</td><td>11</td><td>-</td></tr> <tr><td>19,05</td><td>19</td><td>23</td><td>19</td><td>19</td><td>33</td><td>33</td><td>13</td><td>-</td></tr> <tr><td>20,00</td><td>-</td><td>-</td><td>20</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>22,22</td><td>22</td><td>27</td><td>22</td><td>22</td><td>38</td><td>38</td><td>15</td><td>-</td></tr> <tr><td>25,00</td><td>-</td><td>-</td><td>25</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>25,40</td><td>25</td><td>31</td><td>25</td><td>25</td><td>44</td><td>44</td><td>17</td><td>-</td></tr> <tr><td>31,75</td><td>32</td><td>38</td><td>31</td><td>31</td><td>54</td><td>54</td><td>21</td><td>-</td></tr> <tr><td>32,00</td><td>-</td><td>-</td><td>32</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	"D"	mm	C	D	R	S	T	V	W	3,97	S4	04	03	03	06	-	-	-	4,76	04	05	04	04	08	08	S3	-	5,56	05	06	05	05	09	09	03	-	6,00	-	-	06	-	-	-	-	-	6,35	06	07	06	06	11	11	04	-	7,94	08	09	07	07	13	13	05	-	8,00	-	-	08	-	-	-	-	-	9,52	09	11	09	09	16	16	06	-	10,00	-	-	10	-	-	-	-	-	11,11	11	13	11	11	19	19	07	-	12,00	-	-	12	-	-	-	-	-	12,70	12	15	12	12	22	22	08	-	14,29	14	17	14	14	24	24	09	-	15,88	16	19	15	15	27	27	10	-	16,00	-	-	16	-	-	-	-	-	17,46	17	21	17	17	30	30	11	-	19,05	19	23	19	19	33	33	13	-	20,00	-	-	20	-	-	-	-	-	22,22	22	27	22	22	38	38	15	-	25,00	-	-	25	-	-	-	-	-	25,40	25	31	25	25	44	44	17	-	31,75	32	38	31	31	54	54	21	-	32,00	-	-	32	-	-	-	-	-	R	
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O	Octagon 135°	B	5°	F		A																																																																																																																																																																																																																												
P	Pentagon 108°	C	7°	M		G																																																																																																																																																																																																																												
R	Round	D	15°	W		T																																																																																																																																																																																																																												
S	Square 90°	E	20°	T		Q																																																																																																																																																																																																																												
T	Triangular 60°	F	25°	U		U																																																																																																																																																																																																																												
C D E M V	Rhomboid 80° 55° 75° 86° 35°	G	30°	B		H																																																																																																																																																																																																																												
W	Trigon 80° with enlarged corner angles	N	0°	C		C																																																																																																																																																																																																																												
L	Rectangular 90°	P	11°	J		J																																																																																																																																																																																																																												
A B N/K	Parallelogram 85° 82° 55°	Indicated for other clearance angles requiring descriptions.		X	Special Design	V	Special Design																																																																																																																																																																																																																											

tolerance class	tolerance on "D"	tolerance on "B"	tolerance on "S"
C	±0,025	±0,013	±0,025
H	±0,013	±0,013	±0,025
E	±0,025	±0,025	±0,025
G	±0,025	±0,025	±0,13
M	See tables on next page		±0,13
U	See tables on next page		±0,13

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



CNMG1204086P

04

Thickness
S

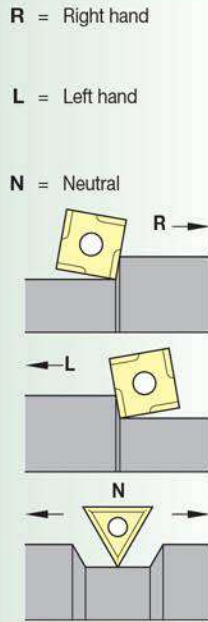
symbol	thickness
mm	mm
—	0,79
T0	1,00
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
9	9,52
11	11,11
12	12,70

08

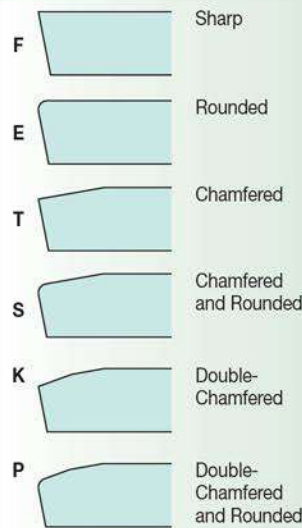
Corner
Radius "Re"

symbol	corner radius
mm	mm
X0	0,04
01	0,1
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
28	2,8
32	3,2
00	round insert
M0	
—	

Hand of Insert
(optional)



Cutting Edge
(optional)



6P

Chipbreaker
(optional)

- 1P = Finishing
- 2P = Finishing
- ..GP = Medium Machining
- 4P = Medium Machining
- 6P = Medium Roughing
- ..MA = Roughing
- 7N = Heavy Roughing

± Tolerance on "D"

± Tolerance on "B"

"D"	Class M Tolerance				Class U Tolerance	"D"	Class M Tolerance			Class U Tolerance
	Shapes S, T, C, R, & W	Shape D	Shape V	Shapes S, T, & C	Shapes S, T, C, R, & W		Shape D	Shape V	Shapes S, T, & C	
										mm
3,97	0,05	—	—	—	3,97	0,08	—	—	—	
4,76	0,05	—	—	0,08	4,76	0,08	—	—	0,13	
5,56	0,05	0,05	0,05	0,08	5,56	0,08	0,11	—	0,13	
6,35	0,05	0,05	0,05	0,08	6,35	0,08	0,11	—	0,13	
7,94	0,05	0,05	0,05	0,08	7,94	0,08	0,11	—	0,13	
9,52	0,05	0,05	0,05	0,08	9,52	0,08	0,11	0,18	0,13	
11,11	0,08	0,08	0,08	0,13	11,11	0,13	0,15	—	—	
12,70	0,08	0,08	0,08	0,13	12,70	0,13	0,15	0,25	0,20	
14,29	0,08	0,08	0,08	0,13	14,29	0,13	0,15	—	—	
15,88	0,10	0,10	0,10	0,18	15,88	0,15	0,18	—	0,27	
17,46	0,10	0,10	0,10	0,18	17,46	0,15	0,18	—	0,27	
19,05	0,10	0,10	0,10	0,18	19,05	0,15	0,18	—	0,27	
22,22	0,13	—	—	0,25	22,22	0,15	—	—	0,38	
25,40	0,13	—	—	0,25	25,40	0,18	—	—	0,38	
31,75	0,15	—	—	0,25	31,75	0,20	—	—	0,38	

A system of grades, geometries, and application guidelines to provide optimal solutions for your metalcutting needs. It's easy to determine which WIDIA™ chip-control cutting tool will work best in your specific workpiece materials and applications!

TN	15	M														
Brand	Relative Hardness (ISO 513)	Primary Workpiece Material (ISO 513)														
<p>TN = WIDIA</p>	<p>01 = Hardest</p> <p>10</p> <p>20</p> <p>30</p> <p>40</p> <p>50 = Toughest</p>	<table border="1"> <tr><td>P</td><td>Steel</td></tr> <tr><td>M</td><td>Stainless Steel</td></tr> <tr><td>K</td><td>Cast Iron</td></tr> <tr><td>N</td><td>Non-Ferrous</td></tr> <tr><td>S</td><td>High-Temp Alloys</td></tr> <tr><td>H</td><td>Hardened Materials</td></tr> <tr><td>U</td><td>Universal Machining</td></tr> </table>	P	Steel	M	Stainless Steel	K	Cast Iron	N	Non-Ferrous	S	High-Temp Alloys	H	Hardened Materials	U	Universal Machining
P	Steel															
M	Stainless Steel															
K	Cast Iron															
N	Non-Ferrous															
S	High-Temp Alloys															
H	Hardened Materials															
U	Universal Machining															



WIDIA™ Tunable Tooling



EXTREME **CHALLENGES.**
EXTREME **RESULTS.**

Internal dampening package eliminates chatter, vibration, and harmonics in all your deep-hole boring applications!

- Proprietary features provide superior surface finish and increased productivity.
- Wide product offering — from boring bars, extensions, and holders to rotating adaptors and modular sections.
- Reduce setup time with KM™ Quick Change Tooling — now an ISO Standard!
- Customise WIDIA pre-tuned boring bars — after they're on the machine — to optimise performance in your specific machining operations.

For tighter tolerances, reduced scrap rates, and improved tool life, you can rely on WIDIA Tunable Tooling!

To learn more, contact your local Authorised Distributor or visit widia.com

WIDIA 

■ Step 1 • Select the insert geometry

Negative Inserts



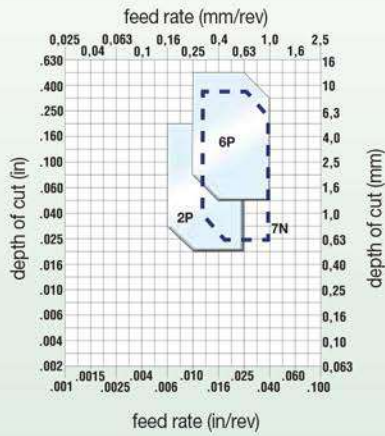
2P
Finishing



6P
Roughing



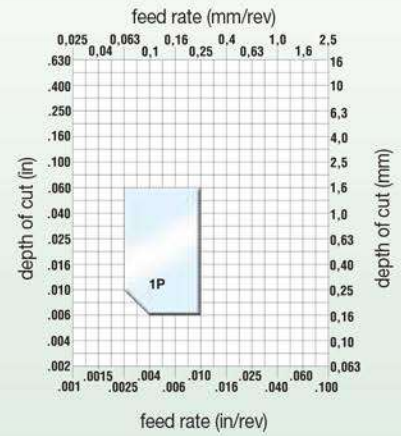
7N
Heavy Roughing



Positive Inserts



1P
Finishing



■ Step 2 • Select the grade

cutting condition	Negative Insert Geometry			Positive Insert Geometry
	2P	6P	7N	1P
heavily interrupted cut	TN30P	TN30P	TN30P	TN30P
lightly interrupted cut	TN20P/TN30P	TN20P/TN30P	TN20P/TN30P	TN20P
varying depth of cut, casting, or forging skin	TN20P/TN30P	TN20P/TN30P	TN20P/TN30P	TN10P
smooth cut, pre-turned surface	TN10P	TN10P	TN10P	TN10P

(continued)

■ Step 3 • Selecting the cutting speed *(continued)*

Low-Carbon (<0.3% C) and Free-Machining Steel

Material Group	grade	speed – m/min									Starting Conditions	
		135	180	225	275	320	360	410	455	495	m/min	
P0/P1	TN10P					◇						316
	TN20P				◇							248
	TN30P		◇									189

Medium- and High-Carbon Steels (>0.3% C)

Material Group	grade	speed – m/min									Starting Conditions	
		135	180	225	275	320	360	410	455	495	m/min	
P2	TN10P			◇								212
	TN20P		◇									176
	TN30P	◇										135

Alloy Steels and Tool Steels (≤330 HB) (≤35 HRC)

Material Group	grade	speed – m/min									Starting Conditions	
		135	180	225	275	320	360	410	455	495	m/min	
P3	TN10P		◇									152
	TN20P		◇									140
	TN30P	◇										108

Alloy Steels and Tool Steels (340–450 HB) (36–48 HRC)

Material Group	grade	speed – m/min									Starting Conditions	
		60	90	120	150	180	210	240	270	300	m/min	
P4	TN10P			◇								116
	TN20P			◇								95
	TN30P		◇									86

Ferritic, Martensitic, and PH Stainless Steels (≤330 HB) (≤35 HRC)

Material Group	grade	speed – m/min									Starting Conditions	
		120	150	180	210	240	270	300	330	360	m/min	
P5	TN10P			◇								172
	TN20P			◇								176
	TN30P		◇									122

Ferritic, Martensitic, and PH Stainless Steels (340–450 HB) (36–48 HRC)

Material Group	grade	speed – m/min									Starting Conditions	
		105	135	165	195	225	255	285	315	345	m/min	
P6	TN10P			◇								144
	TN20P			◇								135
	TN30P		◇									95

Step 1 • Select the insert geometry

Negative Inserts



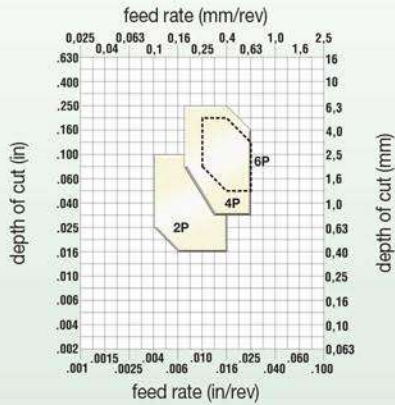
2P
Finishing



4P
Medium



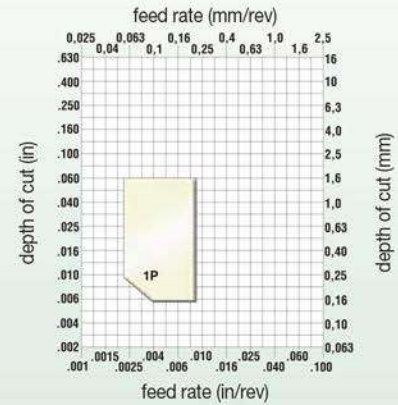
6P
Roughing



Positive Inserts



1P
Finishing



Step 2 • Select the grade

cutting condition	Negative Insert Geometry			Positive Insert Geometry
	2P	4P	6P	1P
heavily interrupted cut	TN15M/TN10	TN30M	TN30M	TN30M/TN10
lightly interrupted cut	TN15M/TN10	TN30M	TN30M	TN30M
varying depth of cut, casting, or forging skin	TN15M	TN15M/TN30M	TN15M/TN30M	TN15M/TN30M
smooth cut, pre-turned surface	TN15M	TN15M	TN15M	TN15M

Step 3 • Selecting the cutting speed

Austenitic Stainless Steel		speed – m/min										Starting Conditions
Material Group	grade	90	135	180	225	270	315	360	405	450	m/min	
M1	TN15M		◇								162	
	TN30M		◇								135	
	TN10U			◇							194	
	TN15U		◇								129	

Austenitic Stainless Steel		speed – m/min										Starting Conditions
Material Group	grade	90	135	180	225	270	315	360	405	450	m/min	
M2	TN15M		◇								149	
	TN30M		◇								135	
	TN10U			◇							180	
	TN15U										120	

Austenitic Stainless Steel: Duplex (Ferritic and Austenitic Mixture)		speed – m/min										Starting Conditions
Material Group	grade	90	135	180	225	270	315	360	405	450	m/min	
M3	TN15M		◇								135	
	TN30M		◇								108	
	TN10U			◇							167	
	TN15U		◇								111	

Step 1 • Select the insert geometry

Negative Inserts



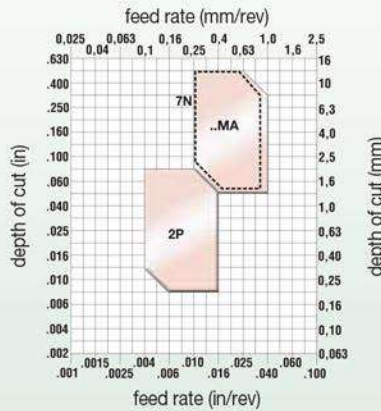
2P
Finishing



..MA
Heavy Roughing



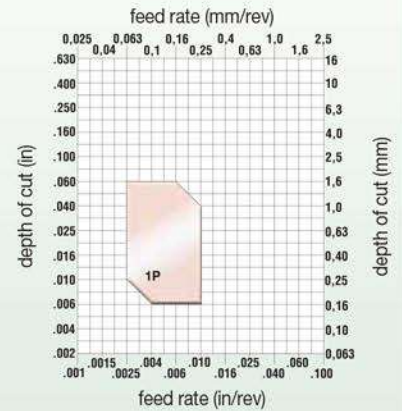
7N
Heavy Roughing



Positive Inserts



1P
Finishing



Step 2 • Select the grade

cutting condition	Negative Insert Geometry			Positive Insert Geometry
	2P	..MA	7N	1P
heavily interrupted cut	TN20K	TN20K	TN20K	TN20K
lightly interrupted cut	TN20K	TN20K	TN20K	TN20K
varying depth of cut, casting, or forging skin	TN20K	TN20K	TN20K	TN20K
smooth cut, pre-turned surface	TN20K	TN20K	TN20K	TN20K

Step 3 • Selecting the cutting speed

Grey Cast Iron speed – m/min Starting Conditions

Material Group	grade	60	150	240	330	420	510	600	690	780	m/min
K1	TN20K										270

Ductile, Compacted Graphite, and Malleable Cast Irons (<80 KSI tensile strength) speed – m/min Starting Conditions

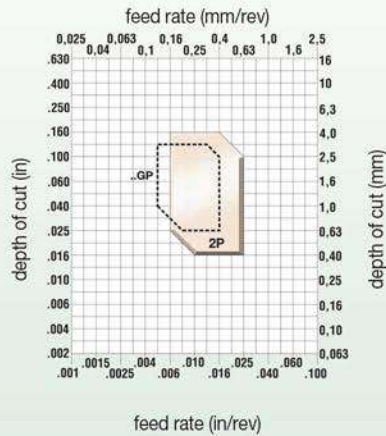
Material Group	grade	60	150	240	330	420	510	600	690	780	m/min
K2	TN20K										216

Ductile, Compacted Graphite, and Malleable Cast Irons (>80 KSI tensile strength) speed – m/min Starting Conditions

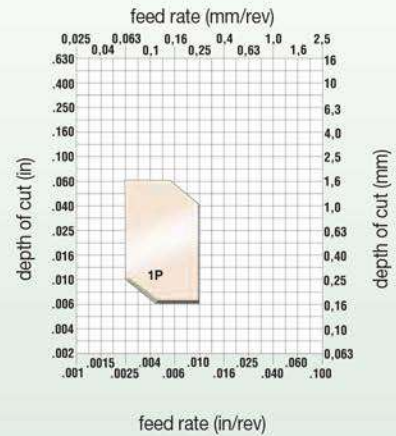
Material Group	grade	60	150	240	330	420	510	600	690	780	m/min
K3	TN20K										189

■ Step 1 • Select the insert geometry

Negative Inserts



Positive Inserts



■ Step 2 • Select the grade

cutting condition	Negative Insert Geometry		Positive Insert Geometry
	2P	..GP	1P
heavily interrupted cut	TN15U	-	TN15U
lightly interrupted cut	TN10U	TN10U	TN15U
varying depth of cut, casting, or forging skin	TN10U	TN10U	TN10U
smooth cut, pre-turned surface	TN10U	TN10U	TN10U

■ Step 3 • Select the cutting speed

Iron-Based, Heat-Resistant Alloys (135–320 HB) (≤34 HRC)

Material Group	grade	speed – m/min									Starting Conditions
		15	45	75	105	140	170	200	230	260	m/min
S1	TN10U										50
	TN15U										33

Cobalt-Based, Heat-Resistant Alloys (150–425 HB) (≤45 HRC)

Material Group	grade	speed – m/min									Starting Conditions
		15	45	75	105	140	170	200	230	260	m/min
S2	TN10U										54
	TN15U										36

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC)

Material Group	grade	speed – m/min									Starting Conditions
		15	45	75	105	140	170	200	230	260	m/min
S3	TN10U										63
	TN15U										42

Titanium and Titanium Alloys (110–450 HB) (≤48 HRC)

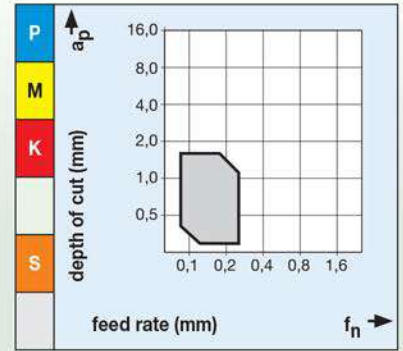
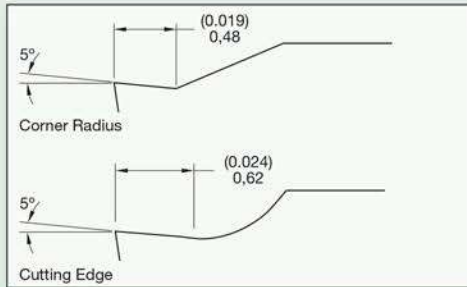
Material Group	grade	speed – m/min									Starting Conditions
		15	45	75	105	140	170	200	230	260	m/min
S4	TN10U										63
	TN15U										42

■ Positive and Negative Inserts

1P



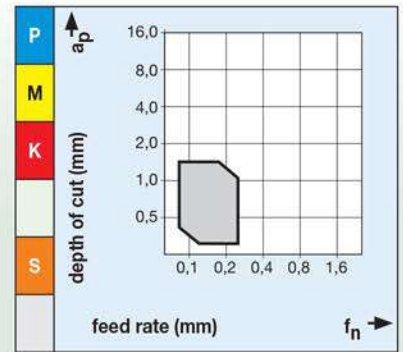
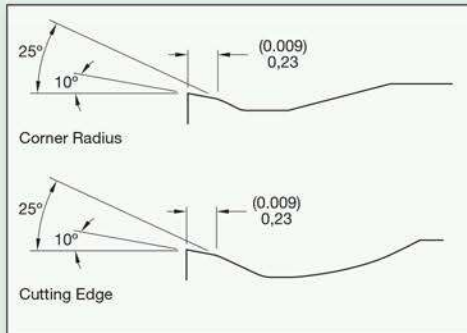
Preferred for light finishing. Low cutting forces and reduced power requirements due to positive rake angle. Good chip control over a wide range.



2P



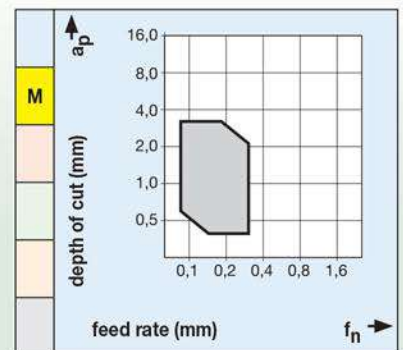
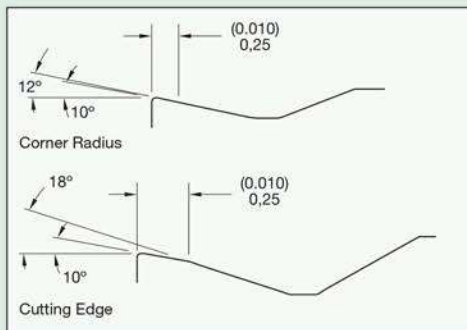
For finish turning, producing smooth, accurate surfaces. Very good chip control, especially at low depths of cut.



4P



For medium-duty turning operations. Soft-cutting chipbreaker. Used in applications producing varying chip sections, such as profile or copy turning. Good dimensional accuracy. For soft steel materials and stainless steels.



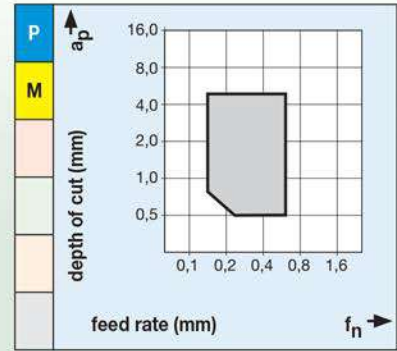
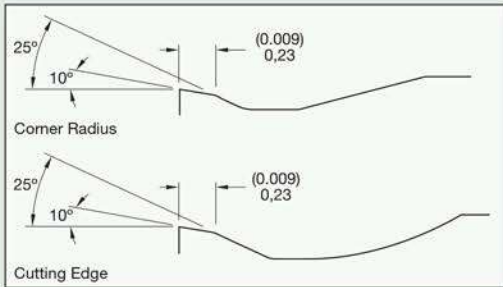
(continued)

■ Positive and Negative Inserts (continued)

6P



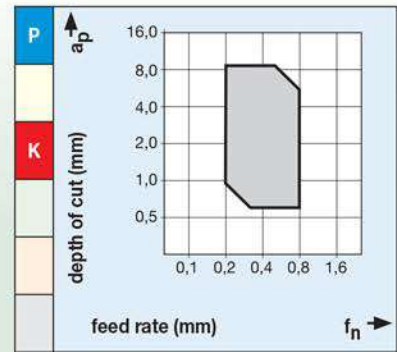
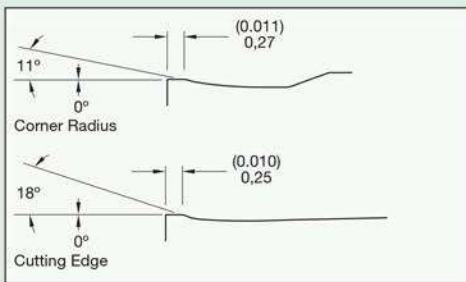
For medium to rough turning. Outstanding chip control due to specially configured chipbreaker element in corner area. Good chip forming with low depths of cut.



7N



For medium-duty to roughing. Outstanding chip control. High edge strength for interrupted cuts, forging skin, or scale. Preferred for all cast iron such as grey, malleable, and nodular.



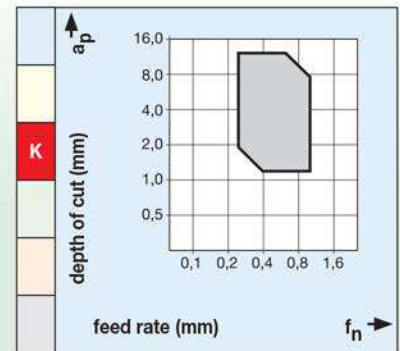
(continued)

■ Positive and Negative Inserts *(continued)*

..MA



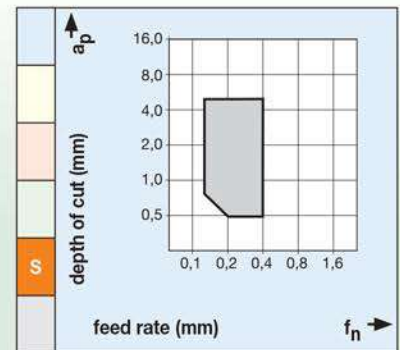
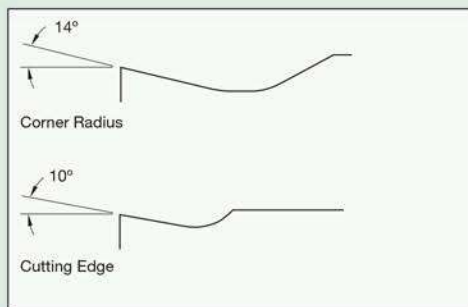
Flat top geometry for machining cast iron. For finishing to roughing applications.

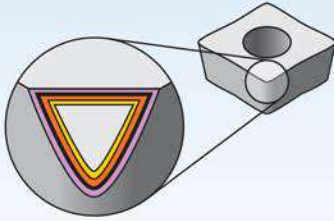


..GP







For light machining to light roughing.

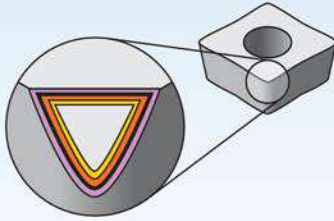




Coatings provide high-speed capability and are engineered for finishing to heavy roughing.





P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

				wear resistance ← → toughness										
				05	10	15	20	25	30	35	40	45		
Grade	TN10P  HC-P10	Coated carbide. MTCVD-TiN-TiCN-Al ₂ O ₃ -TiN. Ideal for light finishing to medium machining applications. Superior wear resistance.	P											
			K											
	TN20P  HC-P20	Coated carbide. MTCVD-TiN-TiCN-Al ₂ O ₃ -TiN. Great general-purpose turning grade for steels. Ideal for semi-finishing to moderately heavy roughing.	P											
			K											
TN30P  HC-P30	Coated carbide. MTCVD-TiN-TiCN-Al ₂ O ₃ -TiN. Tough carbide grade. Ideal for roughing and heavy roughing applications.	P												
		M												
TN15M  HC-M15	Coated carbide. MTCVD-TiN-TiCN-Al ₂ O ₃ -TiN. Ideal for general-purpose machining of stainless steels.	P												
		M												
		S												



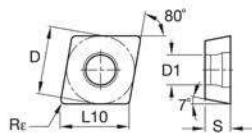
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

		wear resistance ← → toughness																						
		05	10	15	20	25	30	35	40	45														
Grade	TN30M	 HC-M30	Coated carbide. MTCVD-TiN-TiCN-Al ₂ O ₃ -TiN. Ideal for general-purpose machining of stainless steels.	P																				
	M																							
	K																							
	S																							
Grade	TN20K	 HC-K20	Coated carbide. MTCVD-TiN-TiCN-Al ₂ O ₃ -TiN. Great when used for straight or lightly interrupted cut applications of ductile and cast irons.	P																				
	M																							
	K																							
	S																							
Grade	TN10U	 HC-S10	Coated carbide. PVD-TiAlN-TiN. Ideal for finishing of difficult to machine alloys and stainless steels.	P																				
	M																							
	K																							
	N																							
Grade	TN15U	 HW-P15	Uncoated carbide. Excellent abarasion resistance for machining cast irons, austentic stainless steels, and most high-temperature alloys.	S																				
	P																							
	M																							
	K																							



Inserts

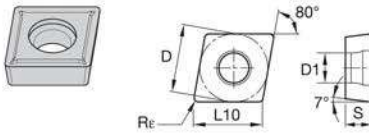


● first choice
○ alternate choice

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

■ CCGT-1P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CCGT0602021P	6,35	6,45	2,38	0,2	2,80							4163978	4163979
CCGT0602041P	6,35	6,45	2,38	0,4	2,80							4163980	4163981
CCGT0602081P	6,35	6,45	2,38	0,8	2,80							4163982	
CCGT09T3011P	9,53	9,67	3,97	0,1	4,40							4164495	4164496
CCGT09T3021P	9,53	9,67	3,97	0,2	4,40							4164493	4164494
CCGT09T3041P	9,53	9,67	3,97	0,4	4,40							4164497	4164498
CCGT09T3081P	9,53	9,67	3,97	0,8	4,40							4164499	4164500



● first choice
○ alternate choice

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

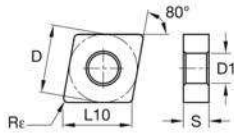


■ **CCMT-1P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CCMT0602021P	6,35	6,45	2,38	0,2	2,80	4166244	4166244	-	4166242	4166323	4166245	4166324	4166325
CCMT0602041P	6,35	6,45	2,38	0,4	2,80	4166326	4166327	-	4166329	4166330	4166328	4166331	4166332
CCMT0602081P	6,35	6,45	2,38	0,8	2,80	4166333	4166334	-	4166336	4166337	4166335	4166338	-
CCMT09T3021P	9,53	9,67	3,97	0,2	4,40	-	-	-	-	-	-	4166339	4166340
CCMT09T3041P	9,53	9,67	3,97	0,4	4,40	4166341	4166342	-	4166344	4166345	4166343	4166346	4166347
CCMT09T3081P	9,53	9,67	3,97	0,8	4,40	4166348	4166349	-	4166351	4166352	4166350	4166353	4166354
CCMT1204041P	12,70	12,90	4,76	0,4	5,50	4166355	4166356	-	4166358	4166359	4166357	4166358	-
CCMT1204081P	12,70	12,90	4,76	0,8	5,50	4166559	4166560	-	4166562	4166623	4166561	4166624	-



Inserts

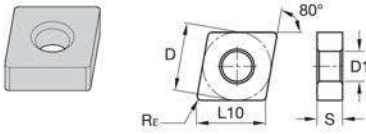


● first choice
○ alternate choice

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

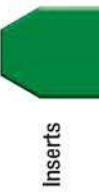
■ CNGP

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CNGP120401	12,70	12,90	4,76	0,1	5,16							4164565	
CNGP120402	12,70	12,90	4,76	0,2	5,16							4164564	
CNGP120404	12,70	12,90	4,76	0,4	5,16							4164566	4164567
CNGP120408	12,70	12,90	4,76	0,8	5,16							4164568	4164569
CNGP120412	12,70	12,90	4,76	1,2	5,16							4164570	4164571



● first choice
○ alternate choice

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

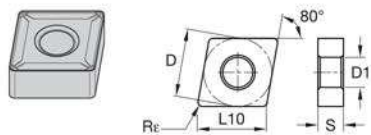


■ CNMA

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CNMA120404	12,70	12,90	4,76	0,4	5,16	●	●	●	○	○	○	○	○
CNMA120408	12,70	12,90	4,76	0,8	5,16	●	●	●	○	○	○	○	○
CNMA120412	12,70	12,90	4,76	1,2	5,16	●	●	●	○	○	○	○	○
CNMA120416	12,70	12,90	4,76	1,6	5,16	●	●	●	○	○	○	○	○
CNMA160612	15,88	16,12	6,35	1,2	6,35	●	●	●	○	○	○	○	○
CNMA160616	15,88	16,12	6,35	1,6	6,35	●	●	●	○	○	○	○	○
CNMA190612	19,05	19,34	6,35	1,2	7,93	●	●	●	○	○	○	○	○
CNMA190616	19,05	19,34	6,35	1,6	7,93	●	●	●	○	○	○	○	○



Inserts

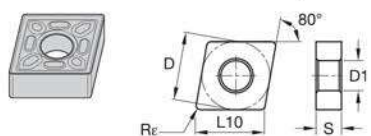


● first choice
○ alternate choice

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

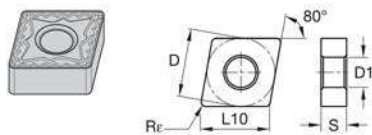
■ CNMG-2P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CNMG1204042P	12,70	12,90	4,76	0,4	5,16	4166171	4166172	-	4166244	4166245	4166243	4166246	4166247
CNMG1204082P	12,70	12,90	4,76	0,8	5,16	4166248	4166249	-	4166252	4166245	4166250	4166253	4166254
CNMG1204122P	12,70	12,90	4,76	1,2	5,16	4166255	4166256	-	4166258	-	4166257	4166259	-



■ CNMG-4P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CNMG1204044P	12,70	12,90	4,76	0,4	5,16	-	5359116	-	4165830	4165831	-	5359117	-
CNMG1204084P	12,70	12,90	4,76	0,8	5,16	-	5359118	-	4165832	4165853	-	5359119	-
CNMG1204124P	12,70	12,90	4,76	1,2	5,16	-	5359240	-	4165854	4165855	-	5359241	-
CNMG1606124P	15,88	16,12	6,35	1,2	6,35	-	-	-	4165856	4165857	-	-	-
CNMG1906124P	19,05	19,34	6,35	1,2	7,93	-	-	-	4165858	4165859	-	-	-



● first choice
○ alternate choice

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

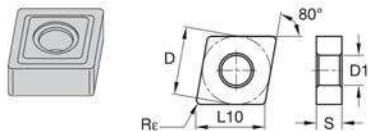
■ **CNMG-6P**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CNMG0903086P	9,53	9,67	3,18	0,8	3,81	4165948	4165949	-	4165950	4165951			
CNMG1204046P	12,70	12,90	4,76	0,4	5,16	4165952	4165963	-	4165964	4165965			
CNMG1204086P	12,70	12,90	4,76	0,8	5,16	4165966	4165967	4165968	4165969	4165970			
CNMG1204126P	12,70	12,90	4,76	1,2	5,16	4165971	4165972	4165973	4165974	4165975			
CNMG1606126P	15,88	16,12	6,35	1,2	6,35	-	4165976	4165977	4165978	4165979			
CNMG1906126P	19,05	19,34	6,35	1,2	7,93	-	4165980	4165981	4165982	4165983			

Inserts



Inserts

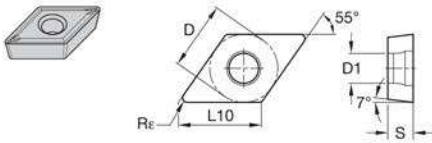


● first choice
○ alternate choice

P	●	●	●	○	○	○	○	○	○
M	●	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○
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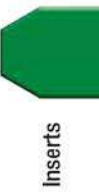
■ CNMG-7N

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
CNMG1204047N	12,70	12,90	4,76	0,4	5,16	4166386	4166387				4166388		
CNMG1204087N	12,70	12,90	4,76	0,8	5,16	4166389	4166390	4166391			4166392		
CNMG1204127N	12,70	12,90	4,76	1,2	5,16	4166433	4166434	4166435			4166436		
CNMG1204167N	12,70	12,90	4,76	1,6	5,16	4166437	4166438				4166439		
CNMG1606127N	15,88	16,12	6,35	1,2	6,35	4166440	4166441	4166442			4166443		
CNMG1606167N	15,88	16,12	6,35	1,6	6,35	4166444	4166445				4166446		
CNMG1906087N	19,05	19,34	6,35	0,8	7,93	4166447					4166448		
CNMG1906127N	19,05	19,34	6,35	1,2	7,93	4166449	4166450	4166451			4166452		
CNMG1906167N	19,05	19,34	6,35	1,6	7,93	4166453	4166454	4166455			4166456		
CNMG2509247N	25,40	25,79	9,53	2,4	9,12								



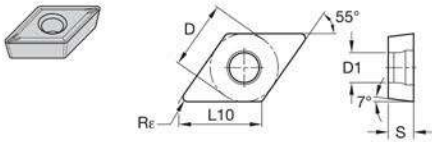
● first choice
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P	●	●	●	○	○	○	○	○	○
M	●	●	●	●	●	●	●	●	●
K	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○
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■ **DCGT-1P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DCGT0702011P	6,35	7,75	2,38	0,1	2,80	●	●	●	○	○	○	○	○
DCGT11T3011P	9,53	11,63	3,97	0,1	4,40	●	●	●	○	○	○	○	○
DCGT1504081P	12,70	15,50	4,76	0,8	5,50	●	●	●	○	○	○	○	○

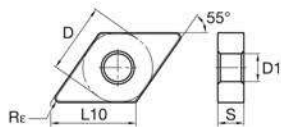


■ **DCMT-1P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DCMT0702021P	6,35	7,75	2,38	0,2	2,80	○	○	○	○	○	○	○	○
DCMT0702041P	6,35	7,75	2,38	0,4	2,80	4166627	4166628	○	4166630	4166631	4166629	4166632	4166625
DCMT11T3021P	9,53	11,63	3,97	0,2	4,40	○	○	○	○	○	○	○	○
DCMT11T3041P	9,53	11,63	3,97	0,4	4,40	4166636	4166637	○	4166639	4166640	4166638	4166641	4166642
DCMT11T3081P	9,53	11,63	3,97	0,8	4,40	4166643	4166644	○	4166646	4166647	4166645	4166648	○
DCMT11T3121P	9,53	11,63	3,97	1,2	4,40	4166649	○	○	○	○	○	○	○
DCMT1504041P	12,70	15,50	4,76	0,4	5,50	4166653	4166654	○	○	○	○	○	○
DCMT1504081P	12,70	15,50	4,76	0,8	5,50	4166656	○	○	○	○	○	○	○



Inserts

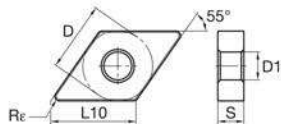


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M	●	●	●	●	●	●	●	●	●
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N	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○
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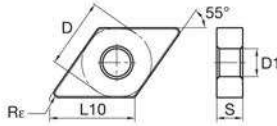
■ DNGP

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DNGP150401	12,70	15,50	4,76	0,1	5,16	●	●	●	○	○	○	○	○
DNGP150402	12,70	15,50	4,76	0,2	5,16	●	●	●	○	○	○	○	○
DNGP150404	12,70	15,50	4,76	0,4	5,16	●	●	●	○	○	○	○	○
DNGP150408	12,70	15,50	4,76	0,8	5,16	●	●	●	○	○	○	○	○



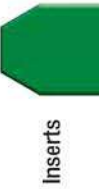
■ DNMA

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DNMA150408	12,70	15,50	4,76	0,8	5,16	●	●	●	○	○	○	○	○
DNMA150608	12,70	15,50	6,35	0,8	5,16	●	●	●	○	○	○	○	○
DNMA150412	12,70	15,50	4,76	1,2	5,16	●	●	●	○	○	○	○	○
DNMA150612	12,70	15,50	6,35	1,2	5,16	●	●	●	○	○	○	○	○



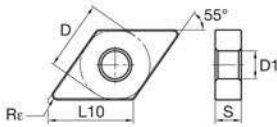
● first choice
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P	●	●	●	○	○	○	○	○	○
M	●	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○
H	○	○	○	○	○	○	○	○	○



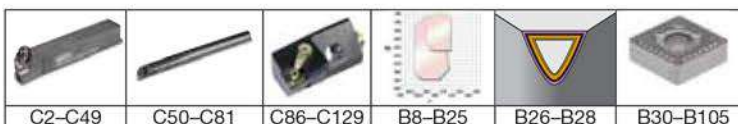
■ **DNMG-2P**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DNMG1504042P	12,70	15,50	4,76	0,4	5,16	4166260	4166261	-	4166263	4166264	4166262	4166265	4166266
DNMG1506042P	12,70	15,50	6,35	0,4	5,16	4166825	4166826	-	4166828	-	4166827	4166829	4166830
DNMG1504082P	12,70	15,50	4,76	0,8	5,16	4166267	4166269	-	4166273	4166275	4166271	4166277	4166279
DNMG1506082P	12,70	15,50	6,35	0,8	5,16	4166831	4166832	-	4166844	-	4166843	4166845	4166846
DNMG1506122P	12,70	15,50	6,35	1,2	5,16	4166847	4166848	-	4166850	4166851	4166849	4166852	-

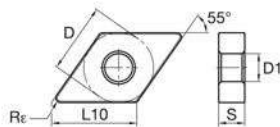


■ **DNMG-4P**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DNMG1504044P	12,70	15,50	4,76	0,4	5,16	-	-	-	4165860	4165861	-	-	-
DNMG1506044P	12,70	15,50	6,35	0,4	5,16	-	5359244	-	4165864	4165865	-	-	-
DNMG1504084P	12,70	15,50	4,76	0,8	5,16	-	5359242	-	4165862	4165863	-	5359243	-
DNMG1506084P	12,70	15,50	6,35	0,8	5,16	-	5359245	-	4165866	4165867	-	-	-
DNMG1506124P	12,70	15,50	6,35	1,2	5,16	-	-	-	4165868	4165869	-	-	-



Inserts

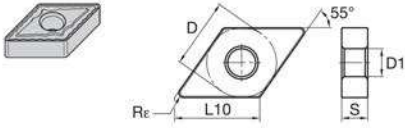


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M	●	○	○	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○	○	○
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■ DNMG-6P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DNMG1104086P	9,53	11,63	4,76	0,8	3,81	4165984	4165985	—	—	—	—	—	—
DNMG1504046P	12,70	15,50	4,76	0,4	5,16	4165987	4165988	—	4165989	4165990	—	—	—
DNMG1506046P	12,70	15,50	6,35	0,4	5,16	4166767	4166768	—	—	—	—	—	—
DNMG1504086P	12,70	15,50	4,76	0,8	5,16	4165991	4165992	4165993	—	—	—	—	—
DNMG1506086P	12,70	15,50	6,35	0,8	5,16	4166771	4166772	4166793	—	—	—	—	—
DNMG1504126P	12,70	15,50	4,76	1,2	5,16	4165996	4165997	—	4166794	4166795	—	—	—
DNMG1506126P	12,70	15,50	6,35	1,2	5,16	4166796	4166797	4166798	—	—	—	—	—
DNMG1906126P	15,88	19,38	6,35	1,2	6,35	4166801	—	—	—	—	—	—	—



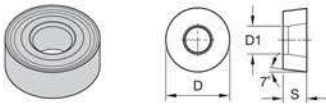
● first choice
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M	●	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○
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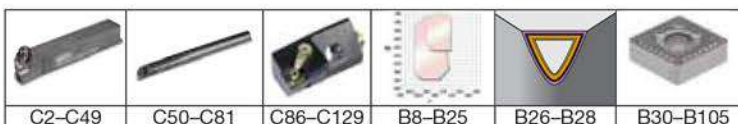
■ **DNMG-7N**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
DNMG1504047N	12,70	15,50	4,76	0,4	5,16	4166458	4166459						
DNMG1504087N	12,70	15,50	4,76	0,8	5,16	4166460	4166461	4166462			4166463		
DNMG1506087N	12,70	15,50	6,35	0,8	5,16	4166484	4166485	4166486			4166487		
DNMG1504127N	12,70	15,50	4,76	1,2	5,16	4166464	4166465	4166432			4166483		
DNMG1506127N	12,70	15,50	6,35	1,2	5,16	4166488	4166489	4166490			4166491		
DNMG1906127N	15,88	19,38	6,35	1,2	6,35		4166492	4166493					

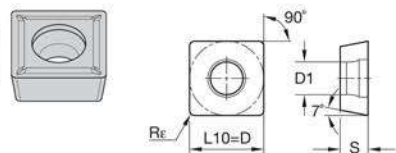


■ **RNMG-7N**

ISO catalogue number	D	S	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
RNMG12047N	12,70	4,76	5,16		4166494				4166495		
RNMG19067N	19,05	6,35	7,93	4166496	4166497						



Inserts

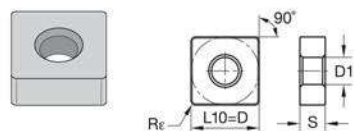


● first choice
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M	●	○	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○	○
H	○	○	○	○	○	○	○	○	○	○

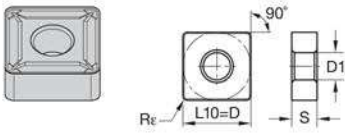
■ SCMT-1P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
SCMT09T3041P	9,53	9,53	3,97	0,4	4,40	4166362	4166393	-	4166395	4166396	4166394	4166397	-
SCMT09T3081P	9,53	9,53	3,97	0,8	4,40	4166398	4166399	-	4166401	4166402	4166400	4166403	-
SCMT1204041P	12,70	12,70	4,76	0,4	5,50	-	-	-	-	-	-	-	-
SCMT1204081P	12,70	12,70	4,76	0,8	5,50	4166405	4166406	-	4166408	4166409	4166407	4166410	-



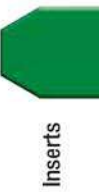
■ SNMA

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
SNMA120408	12,70	12,70	4,76	0,8	5,16	-	-	-	-	-	4165842	-	-
SNMA120412	12,70	12,70	4,76	1,2	5,16	-	-	-	-	-	4165843	-	-
SNMA150612	15,88	15,88	6,35	1,2	6,35	-	-	-	-	-	4165844	-	-
SNMA190612	19,05	19,05	6,35	1,2	7,93	-	-	-	-	-	4165845	-	-



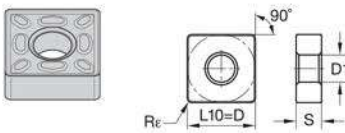
● first choice
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M	●	○	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○	○
H	○	○	○	○	○	○	○	○	○	○



■ **SNMG-2P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
SNMG0903082P	9,53	9,53	3,18	0,8	3,81	4166853	4166854	-	-	-	4166855	4166856	-
SNMG1204082P	12,70	12,70	4,76	0,8	5,16	4166857	4166858	-	4166860	-	4166859	4166861	4166862

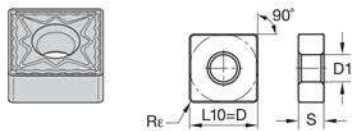


■ **SNMG-4P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
SNMG1204084P	12,70	12,70	4,76	0,8	5,16	-	-	-	4165870	4165871	-	-	-
SNMG1204124P	12,70	12,70	4,76	1,2	5,16	-	-	-	4165872	4165873	-	-	-



Inserts

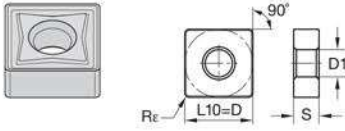


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M	●	○	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○	○
H	○	○	○	○	○	○	○	○	○	○

■ SNMG-6P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
SNMG0903086P	9,53	9,53	3,18	0,8	3,81	4166802	4166803						
SNMG1204046P	12,70	12,70	4,76	0,4	5,16	4166804	4166805		4166806	4166807			
SNMG1204086P	12,70	12,70	4,76	0,8	5,16	4166808	4166809	4166810					
SNMG1204126P	12,70	12,70	4,76	1,2	5,16	4166813	4166814	4166815	4166811	4166812			
SNMG1906166P	19,05	19,05	6,35	1,6	7,92			5308173					
SNMG1906126P	19,05	19,05	6,35	1,2	7,93	4166818	4166819	4166820		4166821			



● first choice
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M	●	●	●	●	●	●	●	●	●	●
K	○	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○	○
H	○	○	○	○	○	○	○	○	○	○

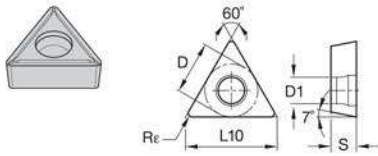


■ **SNMG-7N**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
SNMG1204087N	12,70	12,70	4,76	0,8	5,16	4166498	4166499				4166500		
SNMG1204127N	12,70	12,70	4,76	1,2	5,16	4166501	4166502	4166503			4166504		
SNMG1204167N	12,70	12,70	4,76	1,6	5,16	4166505	4166506	4166507			4166508		
SNMG1506127N	15,88	15,88	6,35	1,2	6,35		4166509	4166510			4166511		
SNMG1506167N	15,88	15,88	6,35	1,6	6,35		4166512	4166513			4166514		
SNMG1906127N	19,05	19,05	6,35	1,2	7,93		4166515	4166516			4166517		
SNMG1906167N	19,05	19,05	6,35	1,6	7,93		4166518	4166519			4166520		



Inserts

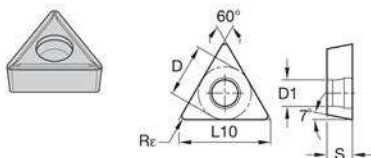


● first choice
○ alternate choice

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

■ TCGT-1P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TCGT1102011P	6,35	11,00	2,38	0,1	2,80							4164526	4164527
TCGT1102041P	6,35	11,00	2,38	0,4	2,80							4164528	4164529
TCGT16T3021P	9,53	16,50	3,97	0,2	4,40							4164530	-
TCGT16T3041P	9,53	16,50	3,97	0,4	4,40							4164531	4164532
TCGT16T3081P	9,53	16,50	3,97	0,8	4,40							4164543	-



● first choice
○ alternate choice

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

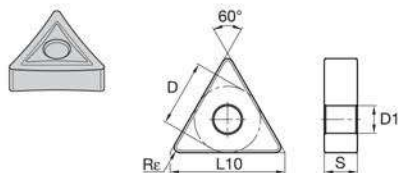
■ TCMT-1P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TCMT1102041P	6,35	11,00	2,38	0,4	2,80	4166414	4166415	-	4166417	4166418	4166416	4166419	-
TCMT1102081P	6,35	11,00	2,38	0,8	2,80	4166420	4166421	-	-	4166422	4166423	-	-
TCMT1102021P	6,35	11,00	2,38	0,2	2,90	4166411	-	-	-	-	4166412	4166413	-
TCMT16T3021P	9,53	16,50	3,97	0,2	4,40	-	-	-	-	-	-	4166424	-
TCMT16T3041P	9,53	16,50	3,97	0,4	4,40	4166425	4166426	-	4166428	4166429	4166427	4166430	-
TCMT16T3081P	9,53	16,50	3,97	0,8	4,40	4166469	4166471	-	4166563	4166564	4166472	4166565	-
TCMT16T3121P	9,53	16,50	3,97	1,2	4,40	-	-	-	-	-	-	4166566	-
TCMT2204081P	12,70	22,00	4,76	0,8	5,50	4166567	4166568	-	4166570	4166571	4166569	4166572	-

Inserts



Inserts

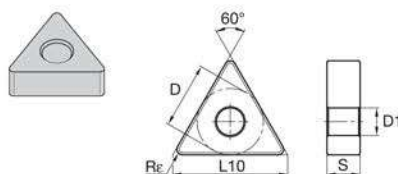


● first choice
○ alternate choice

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

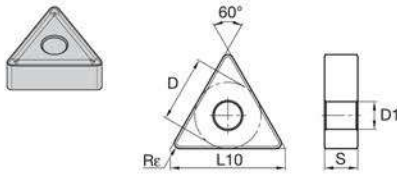
■ TNGP

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TNGP160402	9,53	16,50	4,76	0,2	3,81	●	●	○	○	○	○	○	○
TNGP160404	9,53	16,50	4,76	0,4	3,81	○	○	○	○	○	○	○	○
TNGP160408	9,53	16,50	4,76	0,8	3,81	○	○	○	○	○	○	○	○



■ TNMA

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TNMA160408	9,53	16,50	4,76	0,8	3,81	○	○	○	○	○	○	○	○
TNMA160412	9,53	16,50	4,76	1,2	3,81	○	○	○	○	○	○	○	○
TNMA220408	12,70	22,00	4,76	0,8	5,16	○	○	○	○	○	○	○	○



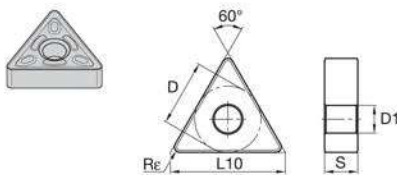
● first choice
○ alternate choice

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



■ **TNMG-2P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TNMG1604042P	9,53	16,50	4,76	0,4	3,81	●	●	○	○	○	○	○	○
TNMG1604082P	9,53	16,50	4,76	0,8	3,81	○	○	○	○	○	○	○	○
TNMG1604122P	9,53	16,50	4,76	1,2	3,81	○	○	○	○	○	○	○	○
TNMG2204082P	12,70	22,00	4,76	0,8	5,16	○	○	○	○	○	○	○	○

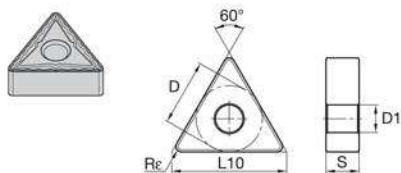


■ **TNMG-4P**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TNMG1604044P	9,53	16,50	4,76	0,4	3,81	○	○	○	○	○	○	○	○
TNMG1604084P	9,53	16,50	4,76	0,8	3,81	○	○	○	○	○	○	○	○
TNMG1604124P	9,53	16,50	4,76	1,2	3,81	○	○	○	○	○	○	○	○
TNMG2204044P	12,70	22,00	4,76	0,4	5,16	○	○	○	○	○	○	○	○
TNMG2204084P	12,70	22,00	4,76	0,8	5,16	○	○	○	○	○	○	○	○
TNMG2204124P	12,70	22,00	4,76	1,2	5,16	○	○	○	○	○	○	○	○



Inserts

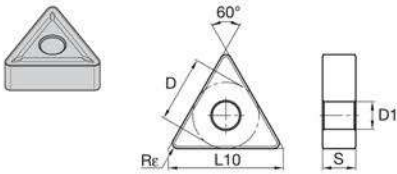


● first choice
○ alternate choice

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

■ TNMG-6P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	4166822	4166823	TN20P	4166823	TN30P	4166824	TN15M	4166824	TN30M	4167086	TN20K	4167091	TN10U	4167091	TN15U	4167092	
TNMG1604046P	9,53	16,50	4,76	0,4	3,81	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TNMG1604086P	9,53	16,50	4,76	0,8	3,81	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TNMG1604126P	9,53	16,50	4,76	1,2	3,81	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TNMG2204046P	12,70	22,00	4,76	0,4	5,16	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TNMG2204086P	12,70	22,00	4,76	0,8	5,16	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



● first choice
○ alternate choice

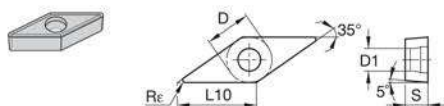
P	●	●	●	○	○	○	○	○	○	○	○
M	●	○	○	○	○	○	○	○	○	○	○
K	○	○	○	○	○	○	○	○	○	○	○
N	○	○	○	○	○	○	○	○	○	○	○
S	○	○	○	○	○	○	○	○	○	○	○
H	○	○	○	○	○	○	○	○	○	○	○



■ **TNMG-7N**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
TNMG1604047N	9,53	16,50	4,76	0,4	3,81	-	4166521	-	-	-	-	-	-
TNMG1604087N	9,53	16,50	4,76	0,8	3,81	4166522	4166523	4166524	-	-	4166525	-	-
TNMG1604127N	9,53	16,50	4,76	1,2	3,81	4166526	4166527	4166528	-	-	4166529	-	-
TNMG2204047N	12,70	22,00	4,76	0,4	5,16	4166530	4166531	-	-	-	-	-	-
TNMG2204087N	12,70	22,00	4,76	0,8	5,16	4166532	4166533	4166534	-	-	4166535	-	-
TNMG2204127N	12,70	22,00	4,76	1,2	5,16	-	4166536	4166537	-	-	4166538	-	-
TNMG2706127N	15,88	27,50	6,35	1,2	6,35	4166539	4166540	4166541	-	-	4166542	-	-
TNMG3309247N	19,05	33,00	9,53	2,4	7,93	4166543	4166544	4166545	-	-	4166546	-	-



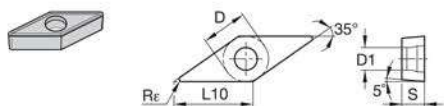


● first choice
○ alternate choice

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

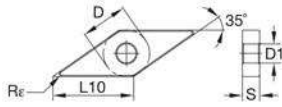
■ VBGT-1P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
VBGT1103011P	6,35	11,07	3,18	0,1	2,80	●	●	●	○	○	○	○	○
VBGT1103021P	6,35	11,07	3,18	0,2	2,80	●	●	●	○	○	○	○	○
VBGT1103041P	6,35	11,07	3,18	0,4	2,80	●	●	●	○	○	○	○	○
VBGT1604011P	9,53	16,61	4,76	0,1	4,40	●	●	●	○	○	○	○	○
VBGT1604021P	9,53	16,61	4,76	0,2	4,40	●	●	●	○	○	○	○	○
VBGT1604041P	9,53	16,61	4,76	0,4	4,40	●	●	●	○	○	○	○	○



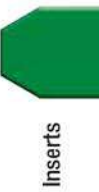
■ VBMT-1P

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
VBMT1103021P	6,35	11,07	3,18	0,2	2,80	●	●	●	○	○	○	○	○
VBMT1103041P	6,35	11,07	3,18	0,4	2,80	●	●	●	○	○	○	○	○
VBMT1103081P	6,35	11,07	3,18	0,8	2,80	●	●	●	○	○	○	○	○
VBMT1604021P	9,53	16,61	4,76	0,2	4,40	●	●	●	○	○	○	○	○
VBMT1604041P	9,53	16,61	4,76	0,4	4,40	●	●	●	○	○	○	○	○
VBMT1604081P	9,53	16,61	4,76	0,8	4,40	●	●	●	○	○	○	○	○



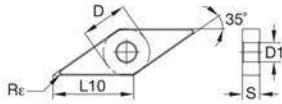
● first choice
○ alternate choice

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



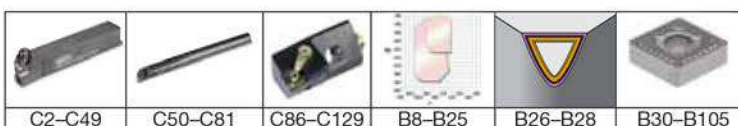
■ **VNGP**

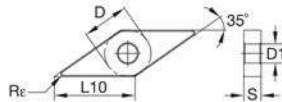
ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
VNGP160401	9,53	16,61	4,76	0,1	3,81							4164795	4164796
VNGP160402	9,53	16,61	4,76	0,2	3,81							4164794	
VNGP220404	12,70	22,14	4,76	0,4	5,16							4164797	4164798
VNGP220408	12,70	22,14	4,76	0,8	5,16							4164799	4164800



■ **VNMA**

ISO catalogue number	D	L10	S	Rε	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
VNMA160408	9,53	16,61	4,76	0,8	3,81						4165849		





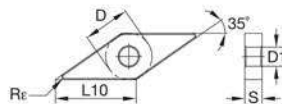
Inserts

● first choice
○ alternate choice

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

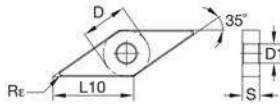
■ VNMG-2P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN15M	TN20P	TN20K	TN30P	TN30M	TN10U	TN15U
VNMG1604042P	9,53	16,61	4,76	0,4	3,81	4166281	4166284	4166282	4166283	-	4166285	4166286	4166287
VNMG1604082P	9,53	16,61	4,76	0,8	3,81	4166288	4166291	4166289	4166290	-	4166292	4166293	4166294



■ VNMG-4P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN15M	TN20P	TN20K	TN30P	TN30M	TN10U	TN15U
VNMG1604044P	9,53	16,61	4,76	0,4	3,81	-	4165884	5359251	-	-	4165885	5359252	-
VNMG1604084P	9,53	16,61	4,76	0,8	3,81	-	4165886	5359253	-	-	4165887	5359254	-



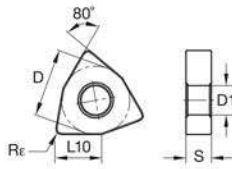
● first choice
○ alternate choice

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



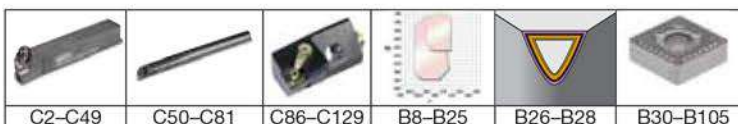
■ **VNMG-6P**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
VNMG1604086P	9,53	16,61	4,76	0,8	3,81	4167125	4167126	-	4167127	4167128	-	-	-

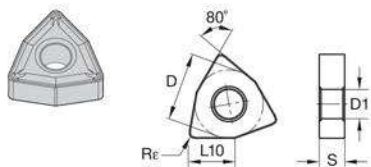


■ **WNMA**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
WNMA060408	9,53	6,52	4,76	0,8	3,81	-	-	-	-	-	4165850	-	-
WNMA080408	12,70	8,69	4,76	0,8	5,16	-	-	-	-	-	4165851	-	-
WNMA080412	12,70	8,69	4,76	1,2	5,16	-	-	-	-	-	4165852	-	-



Inserts

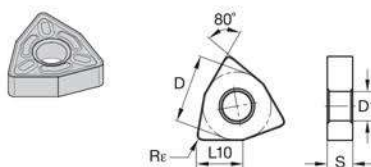


● first choice
○ alternate choice

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

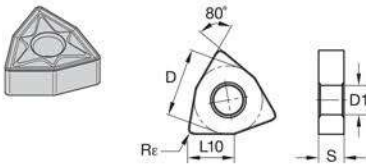
■ WNMG-2P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
WNMG0804042P	12,70	8,69	4,76	0,4	5,16	4166294	4166295	-	4166297	4166298	4166296	4166299	4166300
WNMG0804082P	12,70	8,69	4,76	0,8	5,16	4166301	4166302	-	4166304	4166303	4166305	4166306	4166300



■ WNMG-4P

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
WNMG0804044P	12,70	8,69	4,76	0,4	5,16	-	-	-	4165888	4165889	-	-	-
WNMG0804084P	12,70	8,69	4,76	0,8	5,16	-	5359255	-	4165890	4165891	-	5359256	-
WNMG0804124P	12,70	8,69	4,76	1,2	5,16	-	-	-	4165892	4165891	-	-	-



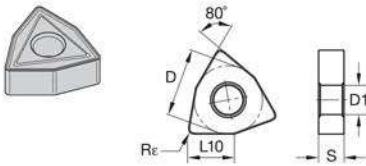
● first choice
○ alternate choice

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



■ **WNMG-6P**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
WNMG0604086P	9,53	6,52	4,76	0,8	3,81	4167129	4167130	-	4167131	4167132	-	-	-
WNMG0804086P	12,70	8,69	4,76	0,8	5,16	4167133	4167134	4167135	4167136	4167137	-	-	-
WNMG0804126P	12,70	8,69	4,76	1,2	5,16	4167138	4167139	4167140	4167141	4167142	-	-	-



■ **WNMG-7N**

ISO catalogue number	D	L10	S	Re	D1	TN10P	TN20P	TN30P	TN15M	TN30M	TN20K	TN10U	TN15U
WNMG0804087N	12,70	8,69	4,76	0,8	5,16	4166547	4166548	4166549	-	-	4166550	-	-
WNMG0804127N	12,70	8,69	4,76	1,2	5,16	4166551	4166552	4166553	-	-	4166554	-	-
WNMG0804167N	12,70	8,69	4,76	1,6	5,16	-	4166555	4166556	-	-	4166557	-	-

