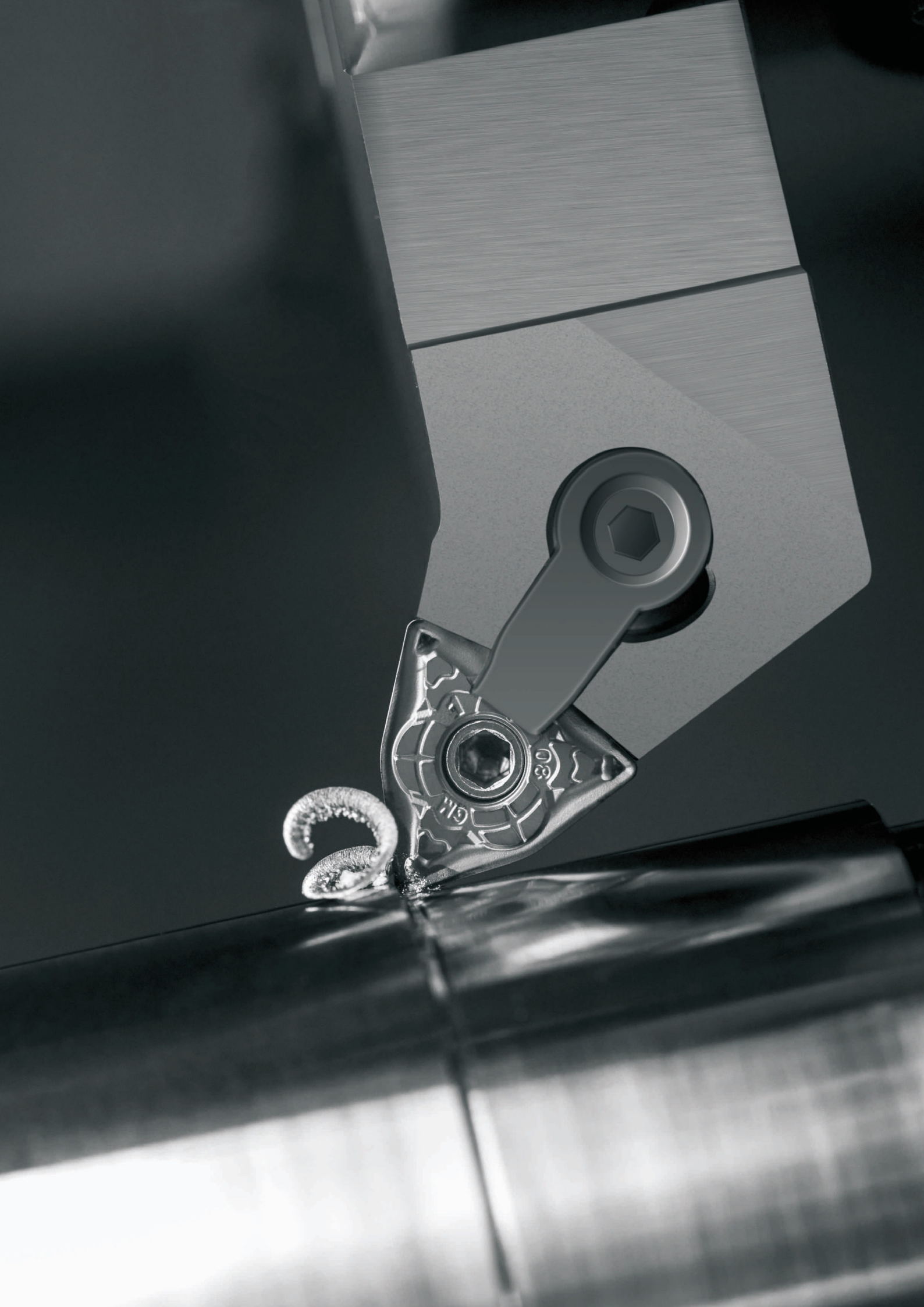




TURNING INSERTS

www.mticuttingtools.com



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Finishing / GF




A 17



A 27



A 33



A 41



A 49



A 53

Double sided chip breaker with good chip control. Wide range of application due to excellent balance of sharpness and cutting edge stability.

Semi - Finishing / GQ




A 18



A 30



A 35



A 45



A 51



A 57

Double sided chip breaker with good chip control. Suitable for finishing and medium machining of steel.

Medium / GM




A 19



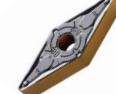
A 28



A 35



A 43



A 50



A 54

Double sided chip breaker for medium machining. Wide range of application due to stable cutting edge and large rake angle. Suitable for machining of steel.

Medium / GT




A 18



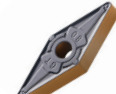
A 28



A 34



A 42



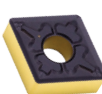
A 50



A 55

Double sided chip breaker for medium machining. Wide range of application due to stable cutting edge and large rake angle.

Medium / MT

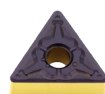
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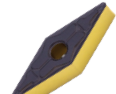
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A 34



A 42



A 50



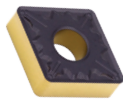
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Double sided chip breaker for medium machining. Very suitable for machining of steel.

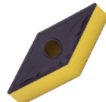
General Turning

Negative - Positive Chipbreaker Overview

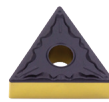
Medium / AM



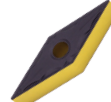
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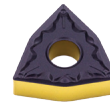
A 30



A 43



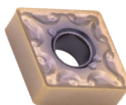
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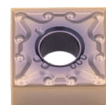
A 55

Wide range of application due to excellent balance of sharpness and cutting edge stability.

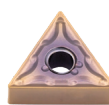
Medium / MA



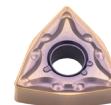
A 21



A 35



A 44



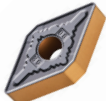
A 57

Double sided chip breaker with good chip control.

Roughing / GR



A 23



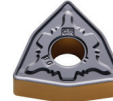
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A 37



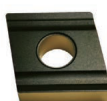
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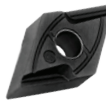
A 57

Wide range of application due to stable cutting edge and large rake angle.

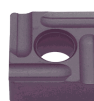
Universal / R-L



A 22



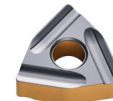
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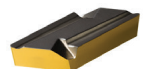
A 38



A 46



A 58



A 62

Double sided chip breaker for general machining.

Heavy / GX



A 24



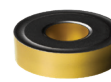
A 24



A 84



A 83



A 61

Single sided chipbreaker with positive rake angle and stable cutting edge for medium roughing of steel.

Finishing / BF



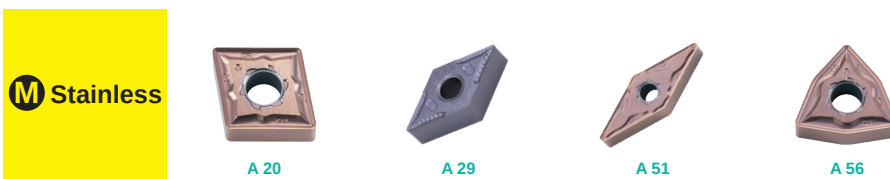
Double sided chip breaker with sharp cutting edge and large rake angle for finishing of stainless steel.

Medium / BM



Double sided chip breaker with sharp cutting edge and large rake angle. Process reliable medium machining of stainless steel.

Medium / SM



Double sided chip breaker with ground cutting edge and large rake angle for medium machining of heat-resistant materials.

Medium / DM



Double sided chip breaker with ground cutting edge and large rake angle for medium machining of heat-resistant materials.

Medium / MS



Double sided chip breaker with sharp cutting edge and large rake angle. Process reliable medium machining of stainless steel.

General Turning

Negative Chipbreaker Overview

Roughing / BR



A 21



A 37



A 45



A 57

Double sided chip breaker with large rake angle for low cutting forces. Suitable for roughing of stainless steel.

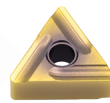
Universal / R-L



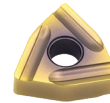
A 31



A 38



A 46



A 58

Double sided chip breaker with surrounding cutting edge. Process reliable machining due to medium cutting edge stability.

All Round



A 25



A 32



A 39



A 47



A 52



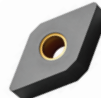
A 59

Double sided chip breaker with surrounding cutting edge. Process reliable machining due to highest cutting edge stability.

Flat



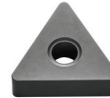
A 26



A 32



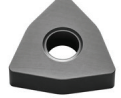
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A 47



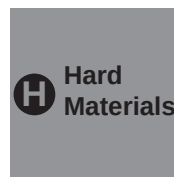
A 52



A 60

Double sided insert for machining od steel and cast iron.

CBN



A 97



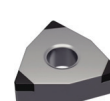
A 98



A 99



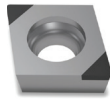
A 100



A 101

CBN insert for machining hardened steel and cast iron.

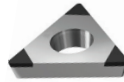
CBN



A 102



A 103



A 104



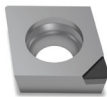
A 105



A 106

CBN insert for machining hardened steel and cast iron.

PCD



A 107



A 108



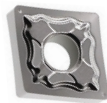
A109



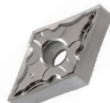
A 110

PCD cutting edge for machining of non-ferrous metals.

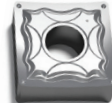
Negative Aluminum



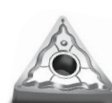
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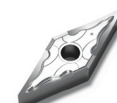
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A 93



A 94



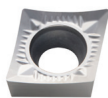
A 95



A 96

Double sided chip breaker with excellent cutting edge design. Sharp cutting edge with positive rake angle.

Positive Aluminum



A 85



A 86



A 87



A 88



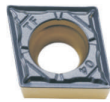
A 89

Single sided chip breaker with excellent cutting edge design. Sharp cutting edge with positive rake angle.

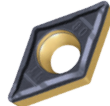
General Turning

Positive Chipbreaker Overview

Finishing / TF



A 63



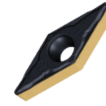
A 67



A 72



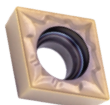
A 74



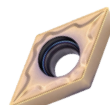
A 75

Single sided chip breaker with good chip control. Wide of application due to excellent balance of sharpness and cutting stability.

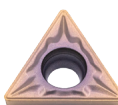
Semi - Finishing / JW



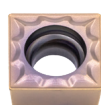
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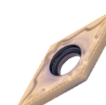
A 68



A 71



A 73



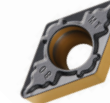
A 76

Single sided chip breaker with good chip control. Suitable for finishing to medium machining of steel and cast iron.

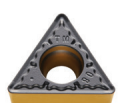
Semi - Finishing / TM



A 66



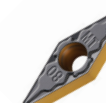
A 70



A 72



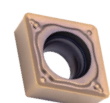
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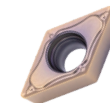
A 78

Single sided chip breaker with good chip control. Wide of application due to excellent balance of sharpness and cutting stability.

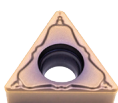
Semi - Finishing / GF



A 65



A 69

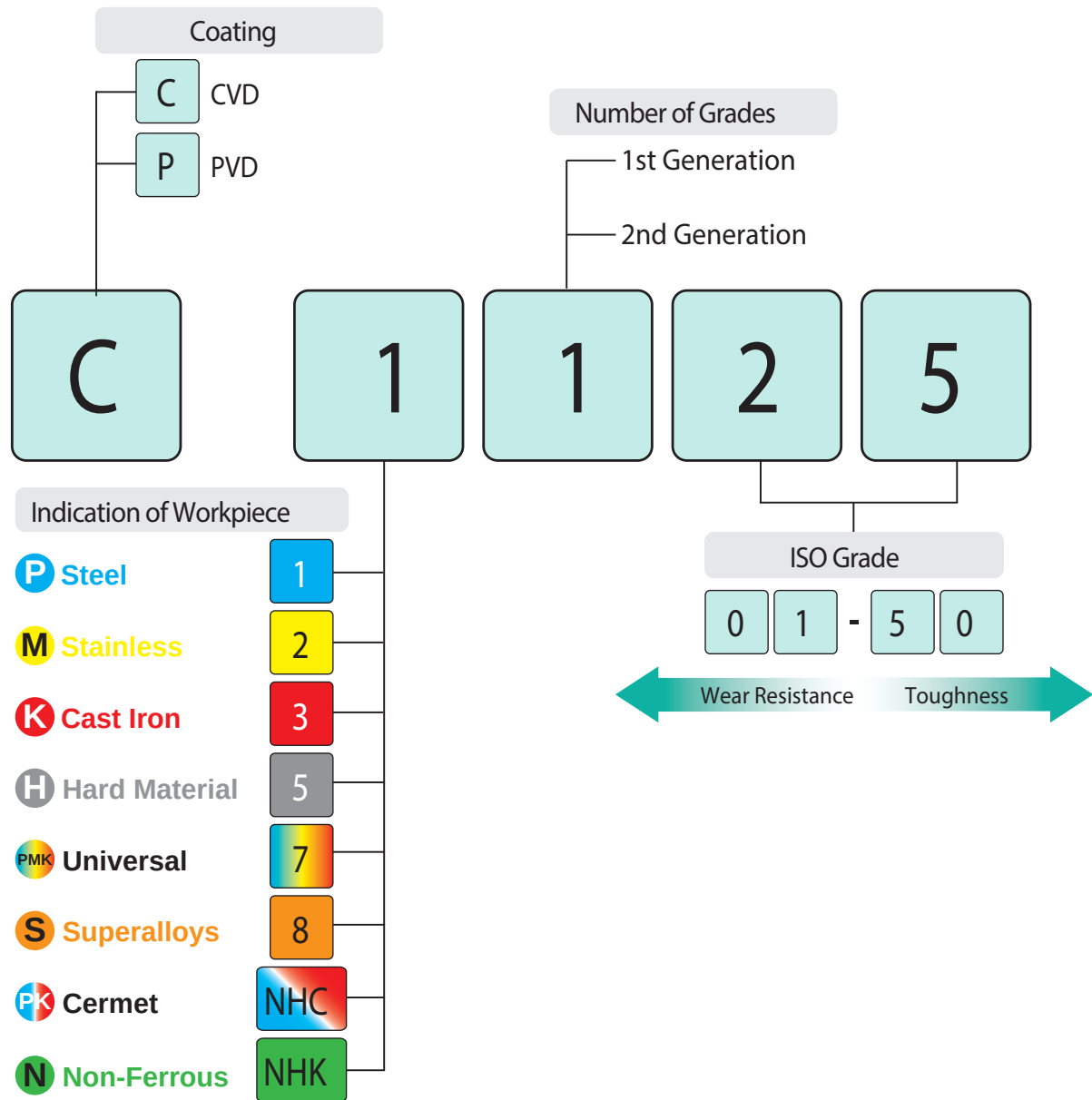


A 71



A 77

Single sided chip breaker with good chip control. Wide of application due to excellent balance of sharpness and cutting stability.



General Turning

Application Fields of Grades

TYPE	ISO	CVD Coating						PVD Coating						Cermet		Cemented		CBN		PCD		
		C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	CBN955	CBN954	PCD685	PCD684
Steel	P01																					
	P05	C1105												NHC10								
	P10		C1115										NHC20									
	P15																					
	P20		C1125					P7025	P8325						NHC20							
	P25																					
	P30			C1125																		
	P35																					
	P40					C1135																
Stainless	M01																					
	M05																					
	M10					C2120																
	M15																					
	M20							P7025	P8325	P2125	P2225	P2824										
	M25																					
	M30																					
	M35																					
	M40																					
Cast Iron	K10						C3115															
	K20							P7025							NHC10							
	K30														NHC20							
	K40																					
Non-Ferrous	N10																NHK10				PCD685	
	N20																					PCD684
	N30																NHK20					
	N40																					
Superalloys	S10												P8105									
	S20																					
	S30																					
	S40									P2225												
Hard Materials	H10													P5510					CBN955			
	H20																		CBN954			
	H30								P8325													
	H40																					

Grade	ISO	Coating Composition	Description
C1105	P05 – P10	TiN+MT-TiCN+Al ₂ O ₃	CVD coated P05-P10 carbide grade for finishing to medium operation of steel, casting steel and high chrome material. Outstanding performance under high cutting speed and temperature with excellent wear resistance.
C1115	P10 – P20	TiN+MT-TiCN+Al ₂ O ₃	CVD coated P10-P20 carbide grade for finishing to medium operation of steel and casting steel. Outstanding performance under higher cutting speed and temperature with excellent wear resistance.
C1125	P20 – P30	TiN+MT-TiCN+Al ₂ O ₃	CVD coated P20-P30 carbide grade for medium operation to roughing of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
C1135	P30 – P40	TiN+MT-TiCN+Al ₂ O ₃	CVD coated P30-P40 carbide grade for roughing operation of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
C2120	M10 – M15	TiN+MT-TiCN+Al ₂ O ₃	CVD coated M10-M15 carbide grade for finishing to medium application in stainless steel. High wear resistance and capability against plastic deformation at normal cutting speed.
C3115	K05 – K20	TiN+MT-TiCN+Al ₂ O ₃	CVD coated K05-K20 carbide substrate. Optimized for medium operation of cast iron, special nodular cast iron and hard steel at high cutting speed.

General Turning

Turning Grade Overview PVD

Grade	ISO	Coating Composition	Description
P8325	P15 - P25 M20 - M40 H30-H40	AlTiMeN	PVD multilayer coated P15–P25/M20–M40/H30–H40 carbide substrate for finishing to medium application of stainless steel, super alloy and steel. Good wear resistance and thermal stability in a wide application field.
P7025	P15 - P25 M20 - M30 K20 - K30	AlTiMeN	PVD multilayer coated P15–P25/M20–M30/K20-K30 carbide substrate for finishing to medium application of stainless steel, super alloy and steel. Optimized coating stability for higher wear resistance and thermal stability in a wide application field.
P2125	M20 - M30	AlTiN	PVD coated M20–M30 carbide grade for finishing to medium application in stainless steel. High wear resistance and capability against plastic deformation at higher cutting speed.
P2225	M15 - M30	AlTiSiN+TiSiN	PVD coated M15–M30 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plastic deformation at higher cutting speed.
P2824	M15 - M30	AlTiMeN	PVD coated M15–M30 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plastic deformation at higher cutting speed.
P8105	S10 - S20	AlCrN	PVD multilayer coated S10–S20 carbide substrate for finishing to medium application of super alloy material but also stainless steel. Good wear resistance and thermal stability in a wide application field.
P5510	H10 - H20	AlTiMeN	PVD coated H10-H20 carbide substrate for finishing to medium operation in hardened steel and nodular cast iron. Good wear resistance and toughness.

Grade	ISO	Description
NHC10	P05 - P15	Uncoated P05–P15 cermet grade for fine finishing operation of steel. Good wear resistance and capability against plastic deformation for good surface roughness.
NHC20	P10 - P25	Uncoated P10–P25 cermet grade for fine finishing to medium operation of steel. Good wear resistance and toughness. Suitable also in light interrupted cut.
NHK10	N05 - N20	Uncoated N05–N20 carbide substrate for fine finishing to medium application in aluminum and other material.
NHK20	N05 - N30	Uncoated N10–N30 carbide substrate for medium application in aluminum and other material.

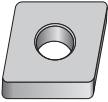
General Turning

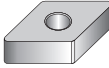
Grade Overview CBN&PCD

Grade	ISO	Description
CBN955	H10 - H20	Uncoated, brazed H10-H20 CBN grade for fine finishing operation in hardened steel with continuous cut. High wear resistance and productivity at higher cutting speed.
CBN954	H20 - H30	Uncoated, brazed H20-H30 CBN grade for fine to medium application in hardened steel from continuous to light interrupted cut. Good wear resistance and toughness for universal use.
PCD685	N10 - N20	Uncoated, brazed N10–N20 PCD grade for fine finishing operation of aluminum alloys less than 12% Si, composites, copper/magnesium and other alloys. Medium grain size grade with good wear resistance for a wide application field.
PCD684	N20 - N30	Uncoated, brazed N20–N30 PCD grade for fine finishing operation of aluminum alloys. Medium grain size grade with good wear resistance for a wide application field.

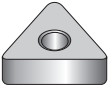
General Turning

Conversion Table Metric/Inch (Negative)

C-type negative angle	ISO	Inch
 CNMG & CNMA	090304	321
	090308	322
	120404	431
	120408	432
	120412	433
	120416	434
	160608	542
	160612	543
	160616	544
	190608	642
	190612	643
	190616	644
	190624	646
	250724	856
	250732	858
	250924	866
	250932	868

D-type negative angle	ISO	Inch
 DNMG & DNMA	110404	331
	110408	332
	110412	333
	150404	431
	150408	432
	150412	433
	150604	441
	150608	442
	150612	443
	150616	444
	190608	542
	190612	543

S-type negative angle	ISO	Inch
 SNMG & SNMA	090304	321
	090308	322
	090312	323
	120404	431
	120408	432
	120412	433
	120416	434
	150608	542
	150612	543
	150616	544
	190412	633
	190424	636
	190612	643
	190616	644
	250724	856
	250732	858
	250924	866
	250932	868

T-type negative angle	ISO	Inch
 TNMG & TNMA	110304	221
	110308	222
	160404	331
	160408	332
	160412	333
	220404	431
	220408	432
	220412	433
	220416	434
	270608	542
	270612	543
	270616	544

W-type negative angle	ISO	Inch
 WNMG & WNMA	06T304	3(2.5)1
	06T308	3(2.5)2
	06T312	3(2.5)3
	060404	331
	060408	332
	060412	333
	080404	431
	080408	432
	080412	433

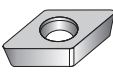
V-type negative angle	ISO	Inch
 VNMG & VNMA	160404	331
	160408	332
	160412	333

R-type negative angle	ISO	Inch
 RNMG	0903MO	32
	1204MO	43

General Turning

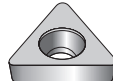
Conversion Table Metric/Inch (Positive)

C-shape positive	ISO	Inch
 CCMT & CCGT	060202	2(1.5)0
	060204	2(1.5)1
	060208	2(1.5)2
	09T302	3(2.5)0
	09T304	3(2.5)1
	09T308	3(2.5)2
	120404	431
	120408	432
	120412	433

D-shape positive	ISO	Inch
 DCMT & DCGT	070202	2(1.5)0
	070204	2(1.5)1
	070208	2(1.5)2
	11T302	3(2.5)0
	11T304	3(2.5)1
	11T308	3(2.5)2
	11T312	3(2.5)3

S-shape positive	ISO	Inch
 SCMT & SCGT	060204	2(1.5)1
	09T302	3(2.5)0
	09T304	3(2.5)1
	09T308	3(2.5)2
	120404	431
	120408	432
	120412	433
	150404	531
	150408	532
	150412	533
	190408	632
	190412	633
	190416	634

V-shape positive	ISO	Inch
 VBMT & VBGT VCMT & VCGT	110202	2(1.5)0
	110204	2(1.5)1
	110208	2(1.5)2
	110302	220
	110304	221
	110308	222
	160402	330
	160404	331
	160408	332
	160412	333

T-shape positive	ISO	Inch
 TCMT & TCGT	06T102	1.2(1.2)0
	06T104	1.2(1.2)1
	06T108	1.2(1.2)2
	090202	1.8(1.5)0
	090204	1.8(1.5)1
	090208	1.8(1.5)2
	110202	2(1.5)0
	110204	2(1.5)1
	110208	2(1.5)2
	110302	220
	110304	221
	110308	222
	16T302	3(2.5)0
	16T304	3(2.5)1
	16T308	3(2.5)2
	16T312	3(2.5)3
	160400	330
	220408	432
	220412	433
	220416	434
	270408	532
	270412	533
	330612	643
	330616	644

General Turning

Turning Insert Code System (ISO)

S

1

Insert Shape

N

2

Relief Angle

M

3

Tolerance

G

4

Cross Section Type

1

Insert Shape

S N M G 1 2 04 08 - T



C



D



E



K



L



R



S



T



V

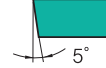


W

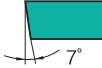
2

Relief Angle

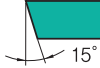
S N M G 1 2 04 08 - T



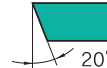
B



C



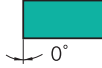
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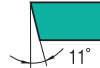
E



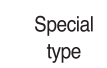
F



N



P



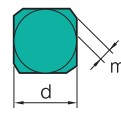
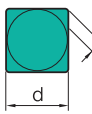
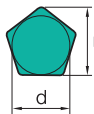
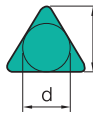
O

3

Tolerance

S N M G 1 2 04 08 - T

d: Inscribed circle
t: Thickness
m: Refer to figure



Class	d	m	t (mm)
A	± 0.025	± 0.005	± 0.025
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
J *	$\pm 0.05 \sim \pm 0.15$	± 0.005	± 0.025
K *	$\pm 0.05 \sim \pm 0.15$	± 0.013	± 0.025
L *	$\pm 0.05 \sim \pm 0.15$	± 0.025	± 0.025
M *	$\pm 0.05 \sim \pm 0.15$	$\pm 0.08 \sim \pm 0.20$	± 0.13
N *	$\pm 0.05 \sim \pm 0.15$	$\pm 0.08 \sim \pm 0.18$	± 0.025
U *	$\pm 0.08 \sim \pm 0.25$	$\pm 0.13 \sim \pm 0.38$	± 0.13

* Sides are based on unground insert

Tolerance on C, H, R, T, W Insert Shape (Exceptional case)

d	Tolerance on d		Tolerance on m	
	J, K, L, M, N	U	M, N	U
6.35	± 0.05	± 0.08	± 0.08	± 0.13
9.525	± 0.05	± 0.08	± 0.08	± 0.13
12.7	± 0.08	± 0.13	± 0.13	± 0.20
15.875	± 0.10	± 0.18	± 0.15	± 0.27
19.05	± 0.10	± 0.18	± 0.15	± 0.27
25.4	± 0.13	± 0.25	± 0.18	± 0.38

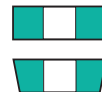
Tolerance on D Insert Shape (Exceptional case)

d	Tolerance on d	Tolerance on m
6.35	± 0.05	± 0.11
9.525	± 0.05	± 0.11
12.7	± 0.08	± 0.15
15.875	± 0.10	± 0.18
19.05	± 0.10	± 0.18

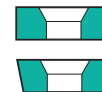
4

Cross Section Type

S N M G 1 2 04 08 - T

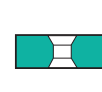


A



C'Sink 70°~90°

B



C'Sink 70°~90°

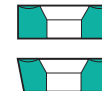
C



F



G



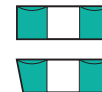
C'Sink 70°~90°

H



C'Sink 70°~90°

J



M

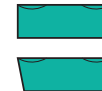


N

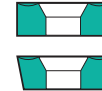


C'Sink 40°~60°

Q



R



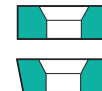
C'Sink 40°~60°

T



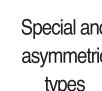
C'Sink 40°~60°

U



C'Sink 40°~60°

W



Special and asymmetric types

X

General Turning

Turning Insert Code System (ISO)

12

04

08

GT

5

Cutting Edge Length,
Diameter of Inscribed Circle

6

Height of Cutting Edge

7

Nose "r"

8

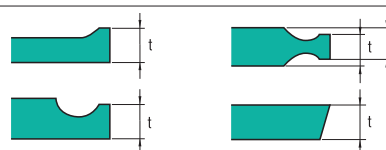
Chip Breaker for Turning

5 Cutting Edge Length, Diameter of Inscribed Circle
S N M G 12 04 08 - T

Symbol								Inch	IC d (mm)
C	d	S	T	R	V	W			
03	04	03	06	03	-	02	1.2 (5)	3.97	
04	05	04	08	04	08	S3	1.5 (6)	4.76	
05	06	05	09	05	09	03	1.8 (7)	5.56	
-	-	-	-	06	-	-	-	6.00	
06	07	06	11	06	11	04	2	6.35	
08	09	07	13	07	13	05	2.5	7.94	
-	-	-	-	08	-	-	-	8.00	
09	11	09	16	09	16	06	3	9.525	
-	-	-	-	10	-	-	-	10.00	
11	13	11	19	11	19	07	3.5	11.11	
-	-	-	-	12	-	-	-	12.00	
12	15	12	22	12	22	08	4	12.70	
14	17	14	24	14	24	09	4.5	14.29	
16	19	15	27	15	27	10	5	15.875	
-	-	-	-	16	-	-	-	16.00	
17	21	17	30	17	30	11	5.5	17.46	
19	23	19	33	19	33	13	6	19.05	
-	-	-	-	20	-	-	-	20.00	
22	27	22	38	22	38	15	7	22.225	
-	-	-	-	25	-	-	-	25.00	
25	31	25	44	25	44	17	8	25.40	
32	38	31	54	31	54	21	10	31.75	
-	-	-	-	32	-	-	-	32.00	

() Symbol for small size insert

6 Height of Cutting Edge
S N M G 12 04 08 - T



Symbol		Height of Cutting Edge (t)	
Metric	Inch	mm	Inch
01	1 (2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5 (3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

() Symbol for small size insert

7 Nose "r"
S N M G 12 04 08 - T



Symbol		Nose "r"	
Metric	Inch	Metric	Inch
003	0.1	0.03	0.0012
005	0.13	0.05	0.002
01	0.2	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Round insert (Inch)	
M0	-	Round insert (Metric)	

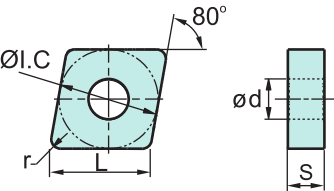
8 Chip Breaker for Turning
S N M G 12 04 08 - T

Chip Breaker Overview
(On page A1)

80°CN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0903	9.7	9.53	3.18	3.81
1204	12.9	12.7	5.16	5.16

				Workpiece Material																					
				P Steel																					
				M Stainless																					
				K Cast Iron																					
				N Non-Ferrous																					
				S Superalloys																					
				H Hard Metaterials																					

General Turning

Negative Inserts

80°CN ♦ ♦

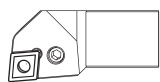
-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16

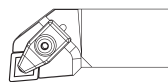
[illegible]

◆ : Stock ◇ : On Demand

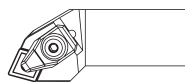
Applicable Tools



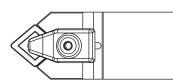
PCLN R/L (95°)



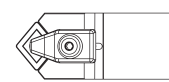
TCLN R/L (95°)



TCRN R/L (75°)



TCMNN (50°)

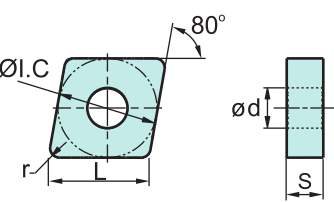


TCZNN (40°)

80°CN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16
1606	16.1	15.87	6.35	6.35
1906	19.3	19.05	6.35	7.94

	Workpiece Material	CVD					PVD					Cermet	Cemented
		P Steel	M Stainless	K Cast Iron	N Non-Ferrous	S Superalloys	H Hard Metaterials						
		●	●	●	●	●	●	●	●	●	●	●	●

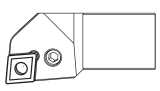
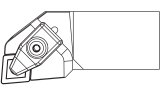
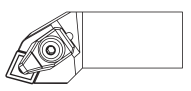
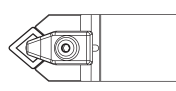
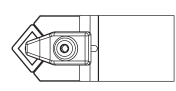
ISO		r mm	a _p mm	f mm	P						M	K	PMK	PMH	M					S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115			P7025	P8325	P2125	P2225	P2824	P8105	P5510			NHC10	NHC20	NHK10	NHK20
	CNMG120404-GM	0.4	1.00-4.00	0.20-0.50	◆	◆	◆																		
	CNMG120408-GM	0.8	1.00-5.00	0.20-0.50	◆	◆	◆	◆																	
	CNMG120412-GM	1.2	1.00-5.00	0.20-0.50	◇	◆	◆																		

	CNMG160608-GM	0.8	1.00-5.00	0.20-0.60	◇	◆	◆																		
	CNMG160612-GM	1.2	1.00-5.00	0.20-0.60	◇	◆	◆	◆																	
	CNMG160616-GM	1.6	1.00-5.00	0.20-0.60	◆	◆	◆																		

	CNMG190608-GM	0.8	2.00-7.00	0.20-0.60	◆	◆	◆																		
	CNMG190612-GM	1.2	2.00-7.00	0.20-0.60	◆	◆	◆	◆																	
	CNMG190616-GM	1.6	2.00-7.00	0.20-0.60	◇	◆	◆	◇																	

◆ : Stock ◇ : On Demand

Applicable Tools

				
PCLN R/L (95°)	TCLN R/L (95°)	TCRN R/L (75°)	TCMNN (50°)	TCZNN (40°)

Grade Selection » A 8

Insert Code System » A 15

General Turning

Negative Inserts

80°CN ♦ ♦

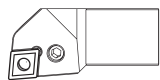
-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16

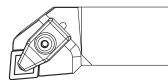
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◆ : Stock ◇ : On Demand

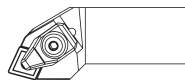
Applicable Tools



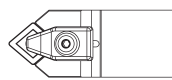
PCLN R/L (95°)



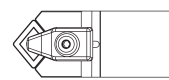
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TCRN R/L (75°)



TCMNN (50°)



TCZNN (40°)

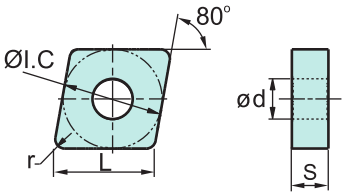
Grade Selection » A 8

Insert Code System » A 15

80°CN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16
1606	16.1	15.87	6.35	6.35
1906	19.3	19.05	6.35	7.94

				Workpiece Material P Steel M Stainless K Cast Iron N Non-Ferrous S Superalloys H Hard Metarials		● ● ● ●									
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General Turning

Negative Inserts

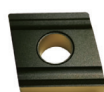
80°CN ◇ ◇

- : Continuous Cutting
- : Light Interrupted Cutting
- : Medium Interrupted Cutting
- : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16
1606	16.1	15.87	6.35	6.35
1906	19.3	19.05	6.35	7.94

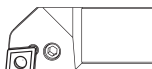
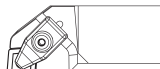
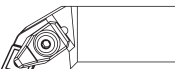
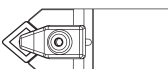
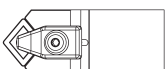
Workpiece Material	CVD					PVD					Cermet		Cemented		
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
P Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M Stainless					●	●	●	●	●	●					
K Cast Iron					●	●					●	●			
N Non-Ferrous													●	●	
S Superalloys									●						
H Hard Materials						●				●					

ISO	r mm	a _p mm	f mm	P					M		K									
				C1105	C1115	C1125	C1135	C2120	C3115	PMK	PMH	M	S	H	PK	N				
	CNMG120408-DM	0.8	0.50-4.00	0.10-0.35								◇			◇					
	CNMG120412-DM	1.2	0.50-4.00	0.10-0.35								◇			◇					
	CNMG160608-DM	0.8	0.50-4.00	0.10-0.35								◇			◇					
	CNMG190612-DM	1.2	2.00-6.50	0.25-0.50								◇			◇					
	CNMG190616-DM	1.6	2.00-6.50	0.25-0.50								◇			◇					

	CNMG120404R-M	0.4	1.00-4.00	0.20-0.50		◇	◇													
	CNMG120408R-M	0.8	1.00-4.00	0.20-0.50		◇	◇													
	CNMG120404L-M	0.4	1.00-4.00	0.20-0.50		◇	◇													
	CNMG120408L-M	0.8	1.00-4.00	0.20-0.50		◇	◇													

◇ : Stock ◇ : On Demand

Applicable Tools

				
PCLN R/L (95°)	TCLN R/L (95°)	TCRN R/L (75°)	TCMNN (50°)	TCZNN (40°)

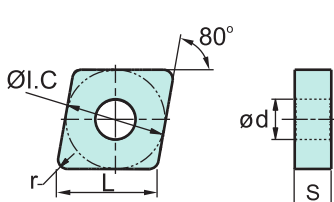
Grade Selection » A 8

Insert Code System » A 15

80°CN ◇ ◇

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16
1606	16.1	15.87	6.35	6.35
1906	19.3	19.05	6.35	7.94

 ØI.C r L 80° ød S	Workpiece Material	CVD					PVD					Cermet	Cemented
		P Steel	M Stainless	K Cast Iron	N Non-Ferrous	S Superalloys	H Hard Materials						
													
													
													

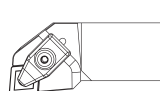
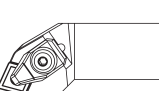
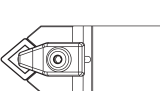
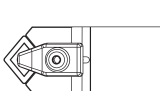
ISO		r mm	a _p mm	f mm	P						M	K	PMK	PMH	M					S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20				
	CNMG120408-GR	0.8	2.00-6.50	0.25-0.60		◆	◆	◆																	
	CNMG120412-GR	1.2	2.00-6.50	0.25-0.60		◆	◆	◆																	

	CNMG160608-GR	0.8	2.00-6.50	0.25-0.60		◆	◆	◆																
	CNMG160612-GR	1.2	2.00-6.50	0.25-0.60		◆	◆	◆																
	CNMG160616-GR	1.6	2.00-6.50	0.25-0.60		◆	◆	◆																

	CNMG190608-GR	0.8	2.00-6.50	0.25-0.60	◆	◆	◆	◆																
	CNMG190612-GR	1.2	2.00-6.50	0.25-0.60	◆	◆	◆	◆																
	CNMG190616-GR	1.6	2.00-6.50	0.40-0.80	◆	◇	◆	◆																

◇ : Stock ◇ : On Demand

Applicable Tools

				
PCLN R/L (95°)	TCLN R/L (95°)	TCRN R/L (75°)	TCMNN (50°)	TCZNN (40°)

Grade Selection » A 8

Insert Code System » A 15

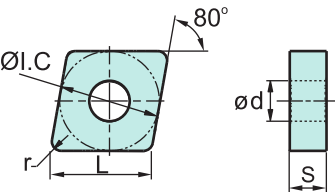
General Turning

Negative Inserts

80°CN

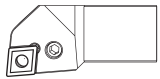
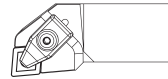
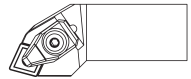
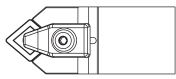
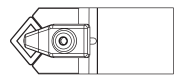
- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1906	19.3	19.05	6.35	7.94
2509	25.79	25.40	9.52	9.12

				Workpiece Material		<table><tr><td>P Steel</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>M Stainless</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>K Cast Iron</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>N Non-Ferrous</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S Superalloys</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>H Hard Metaterials</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>										P Steel																			M Stainless																			K Cast Iron																			N Non-Ferrous																			S Superalloys																			H Hard Metaterials																		
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ISO		r mm	a_p mm	f mm	<table><tr><td colspan="4">P</td><td>M</td><td>K</td></tr><tr><td>C1105</td><td>C1115</td><td>C1125</td><td>C1135</td><td>C2120</td><td>C3115</td></tr></table>					P				M	K	C1105	C1115	C1125	C1135	C2120	C3115	<table><tr><td>PMK</td><td>PMH</td><td colspan="3">M</td><td>S</td><td>H</td></tr><tr><td>P7025</td><td>P8325</td><td>P2125</td><td>P2225</td><td>P2824</td><td>P8105</td><td>P5510</td></tr></table>					PMK	PMH	M			S	H	P7025	P8325	P2125	P2225	P2824	P8105	P5510	<table><tr><td>PK</td></tr><tr><td>NHC10</td><td>NHC20</td></tr></table>		PK	NHC10	NHC20	<table><tr><td>N</td></tr><tr><td>NHK10</td><td>NHK20</td></tr></table>		N	NHK10	NHK20																																																																															
P				M	K																																																																																																																												
C1105	C1115	C1125	C1135	C2120	C3115																																																																																																																												
PMK	PMH	M			S	H																																																																																																																											
P7025	P8325	P2125	P2225	P2824	P8105	P5510																																																																																																																											
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NHC10	NHC20																																																																																																																																
N																																																																																																																																	
NHK10	NHK20																																																																																																																																
	CNMM190608-GZ	0.8	2.00-6.50	0.25-0.60																																																																																																																													
	CNMM190612-GZ	1.2	2.00-6.50	0.25-0.60																																																																																																																													
	CNMM190616-GZ	1.6	2.00-6.50	0.25-0.60																																																																																																																													
	CNMM190624-GZ	2.4	2.00-6.50	0.25-0.60																																																																																																																													
	CNMM250924-GZ	2.4	5.00-10.0	0.40-1.00																																																																																																																													
	CNMM190608-GX	0.8	2.00-7.50	0.25-0.60																																																																																																																													
	CNMM190612-GX	1.2	2.00-7.50	0.25-0.60																																																																																																																													
	CNMM190616-GX	1.6	2.00-7.50	0.25-0.60																																																																																																																													
	CNMM190624-GX	2.4	2.00-7.50	0.25-0.60																																																																																																																													
	CNMM250916-GX	1.6	5.00-10.0	0.40-1.00																																																																																																																													
	CNMM250924-GX	2.4	5.00-12.0	0.40-1.00																																																																																																																													
	CNMM250932-GX	3.2	5.00-12.0	0.40-1.00																																																																																																																													

◆ : Stock ◇ : On Demand

Applicable Tools

Page: A 118 	Page: A 115 	Page: A 115 	Page: A 117 	Page: A 117 
PCLN R/L (95°)	TCLN R/L (95°)	TCRN R/L (75°)	TCMNN (50°)	TCZNN (40°)

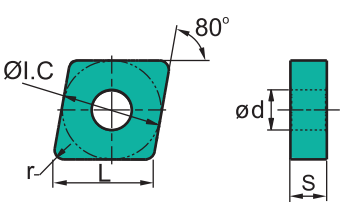
Grade Selection » A 8

Insert Code System » A 15

80°CN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

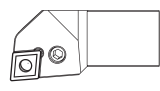
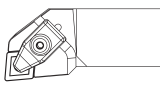
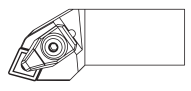
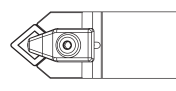
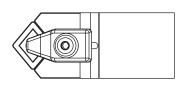
Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16
1606	16.1	15.87	6.35	6.35
1906	19.3	19.05	6.35	7.94

	Workpiece Material	CVD					PVD					Cermet		Cemented	
		P	M	K	N	S	H	P	M	K	N	S	H	PK	N
		●	●	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●	●	●	●

ISO		r mm	a _p mm	f mm	P					M	K	PMK	PMH	M					S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115		P7025	P8325	P2125	P2225	P2824	P8105	P5510			NHC10	NHC20	NHK10	NHK20
	CNMG120404	0.4	1.00-4.50	0.15-0.55						◆														
	CNMG120408	0.8	1.00-4.50	0.15-0.55						◆														
	CNMG120412	1.2	1.00-4.50	0.15-0.55						◆														
	CNMG120416	1.6	1.00-4.50	0.15-0.55						◆														
	CNMG160608	0.8	1.00-4.50	0.15-0.55						◆														
	CNMG160612	1.2	1.00-4.50	0.15-0.55						◆														
	CNMG160616	1.6	1.00-4.50	0.15-0.55						◆														
	CNMG190612	1.2	2.00-6.50	0.40-0.80						◆														
	CNMG190616	1.6	2.00-6.50	0.40-0.80						◆														

◆ : Stock ◇ : On Demand

Applicable Tools

				
PCLN R/L (95°)	TCLN R/L (95°)	TCRN R/L (75°)	TCMNN (50°)	TCZNN (40°)

Grade Selection » A 8

Insert Code System » A 15

General Turning

Negative Inserts

80°CN ◇ ◇

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.9	12.7	5.16	5.16
1606	16.1	15.87	6.35	6.35
1906	19.3	19.05	6.35	7.94

				Workpiece Material		CVD										PVD										Cermet		Cemented	
				P	Steel																								
				M	Stainless																								
				K	Cast Iron																								
				N	Non-Ferrous																								
				S	Superalloys																								
				H	Hard Metarials																								

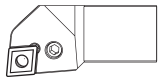
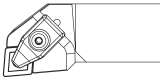
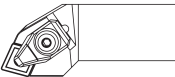
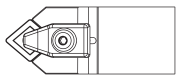
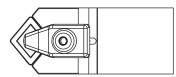
ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10
	CNMA120404	0.4	1.00-4.50	0.15-0.55														
	CNMA120408	0.8	1.00-4.50	0.15-0.55														
	CNMA120412	1.2	1.00-4.50	0.15-0.55														
	CNMA120416	1.6	1.00-4.50	0.15-0.55														

	CNMA160608	0.8	1.00-4.50	0.15-0.55														
	CNMA160612	1.2	1.00-4.50	0.15-0.55														
	CNMA160616	1.6	1.00-4.50	0.15-0.55														

	CNMA190612	1.2	2.00-6.50	0.40-0.80														
	CNMA190616	1.6	2.00-6.50	0.40-0.80														

◆ : Stock ◇ : On Demand

Applicable Tools

				
PCLN R/L (95°)	TCLN R/L (95°)	TCRN R/L (75°)	TCMNN (50°)	TCZNN (40°)

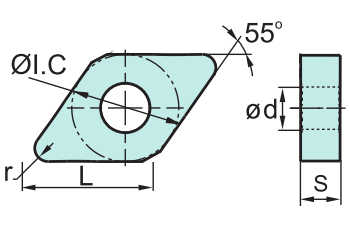
Grade Selection » A 8

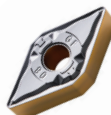
Insert Code System » A 15

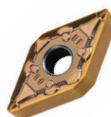
55°DN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1506	15.5	12.7	6.35	5.16

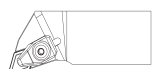
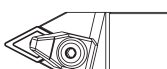
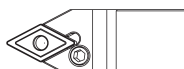
				Workpiece Material	P Steel					
					M Stainless					
					K Cast Iron					
					N Non-Ferrous					
					S Superalloys					
				H Hard Metaterials						

ISO		r mm	a _p mm	f mm	P					M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	DNMG150604-GF	0.4	0.15-2.00	0.08-0.18		◆	◆											◆	◇			
	DNMG150608-GF	0.8	0.15-2.00	0.08-0.18		◆	◆												◆	◇		

	DNMG150604-BF	0.4	0.15-2.00	0.08-0.20					◇				◆	◆	◆						
	DNMG150608-BF	0.8	0.25-2.00	0.08-0.20					◇				◆	◆	◆						

◇ : Stock ◇ : On Demand

Applicable Tools

				
TDHN R/L (107.5°)	TDJN R/L (93°)	TDNN (62.5°)	PDJN R/L (93°)	PDNN (62.5°)

Grade Selection » A 8

Insert Code System » A 15

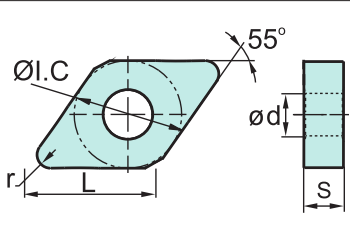
General Turning

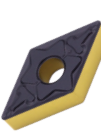
Negative Inserts

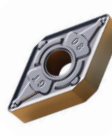
55°DN ◇ ◇

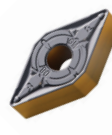
- : Continuous Cutting
- : Light Interrupted Cutting
- : Medium Interrupted Cutting
- : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1506	15.5	12.7	6.35	5.16

	Workpiece Material	CVD					PVD					Cermet	Cemented
		P	M	K	N	S	H	P	M	K	N	S	H
	P Steel	●	●	●	●			●	●			●	●
	M Stainless					●		●	●	●	●		
	K Cast Iron					●		●				●	●
	N Non-Ferrous											●	●
	S Superalloys												
	H Hard Materials							●					

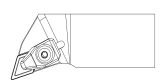
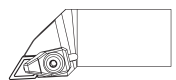
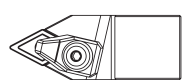
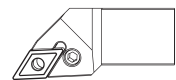
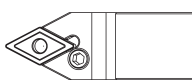
ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	DNMG150604-MT	0.4	0.50-5.00	0.20-0.50		◆	◆			◇											
	DNMG150608-MT	0.8	1.00-5.00	0.20-0.50		◆	◆			◆											
	DNMG150612-MT	1.2	1.00-5.00	0.20-0.50		◆	◆			◇											

	DNMG150604-GT	0.4	0.50-5.00	0.20-0.50	◇	◇	◇										◇	◇												
	DNMG150608-GT	0.8	1.00-5.00	0.20-0.50	◇	◇	◇										◇	◇												
	DNMG150612-GT	1.2	1.00-5.00	0.20-0.50		◇	◇	◇																						

	DNMG150604-GM	0.4	0.50-5.00	0.20-0.50	◇	◇	◇																							
	DNMG150608-GM	0.8	1.00-5.00	0.20-0.50	◇	◇	◇	◇																						
	DNMG150612-GM	1.2	1.00-5.00	0.20-0.50	◇	◇	◇	◇																						

◇ : Stock ◇ : On Demand

Applicable Tools

				
TDHN R/L (107.5°)	TDJN R/L (93°)	TDNNN (62.5°)	PDJN R/L (93°)	PDNNN (62.5°)

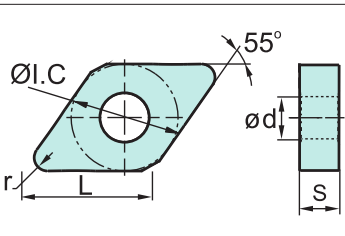
Grade Selection » A 8

Insert Code System » A 15

55°DN ◇◇

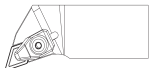
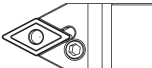
- : Continuous Cutting
- ◐ : Light Interrupted Cutting
- ◑ : Medium Interrupted Cutting
- ⊕ : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1104	11.6	9.52	4.76	3.81
1506	15.5	12.7	6.35	5.16

				Workpiece Material		CVD																PVD																Cermet		Cemented											
				P Steel		M Stainless		K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Meterials																																					

◇ : Stock ◇ : On Demand

Applicable Tools

				
TDHN R/L (107.5°)	TDJN R/L (93°)	TDNNN (62.5°)	PDJN R/L (93°)	PDNNN (62.5°)

Grade Selection » A 8

Insert Code System » A 15

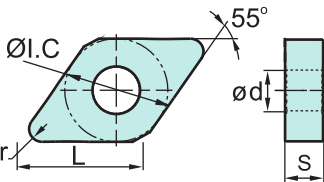
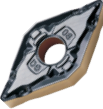
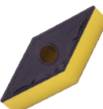
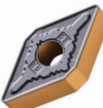
General Turning

Negative Inserts

55°DN

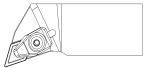
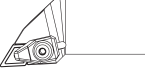
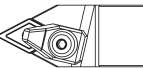
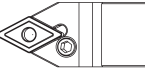
- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1506	15.5	12.7	6.35	5.16

				Workpiece Material					CVD					PVD					Cermet		Cemented												
				P Steel					M Stainless					K Cast Iron					N Non-Ferrous					S Superalloys					H Hard Metaterials				
				ISO			r mm	a _p mm	f mm	P					M	K	PMK	PMH	M			S	H	PK		N							
										C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20							
				DNMG150608-GQ			0.8	0.50-3.00	0.20-0.50	◆	◆	◆																					
				DNMG150612-GQ			1.2	0.50-3.00	0.20-0.50	◆	◆	◆																					
				DNMG150604-AM			0.4	1.00-5.00	0.20-0.60		◆	◆																					
				DNMG150608-AM			0.8	1.00-5.00	0.20-0.60		◆	◆		◆																			
				DNMG150608-GR			0.8	2.00-6.50	0.25-0.60		◆	◆	◇																				
				DNMG150612-GR			1.2	2.00-6.50	0.25-0.60		◆	◆	◇																				

◆ : Stock ◇ : On Demand

Applicable Tools

				
TDHN R/L (107.5°)	TDJN R/L (93°)	TDNN (62.5°)	PDJN R/L (93°)	PDNN (62.5°)

Grade Selection » A 8

Insert Code System » A 15

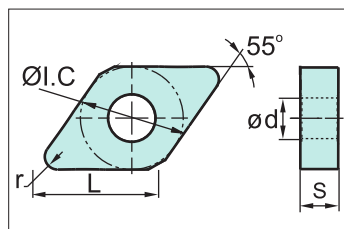
General Turning

Negative Inserts

55°DN

- : Continuous Cutting
- : Light Interrupted Cutting
- : Medium Interrupted Cutting
- : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1506	15.5	12.7	6.35	5.16



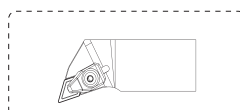
Workpiece Material	CVD					PVD					Cermet		Cemented
	P	M	K	N	S	H	P	M	K	N	S	H	
Steel	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless							●	●	●	●	●	●	
Cast Iron							●	●	●	●	●	●	
Non-Ferrous													●
Superalloys											●	●	
Hard Materials							●	●	●	●	●	●	

ISO		r mm	a _p mm	f mm	P					M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	DNMG150604R-S	0.4	0.40-5.00	0.10-0.55											◆	◆						
	DNMG150608R-S	0.8	0.80-5.00	0.20-0.60											◆	◆						
	DNMG150604L-S	0.4	0.40-5.00	0.10-0.55											◆	◆						
	DNMG150608L-S	0.8	0.80-5.00	0.10-0.55											◆	◆						

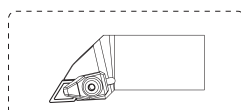
	DNMG150604R-M	0.4	0.40-5.00	0.10-0.55		◇	◇																	
	DNMG150608R-M	0.8	0.80-5.00	0.20-0.60		◇	◇																	
	DNMG150604L-M	0.4	0.40-5.00	0.10-0.55		◇	◇																	
	DNMG150608L-M	0.8	0.80-5.00	0.10-0.55		◇	◇																	

◆ : Stock ◇ : On Demand

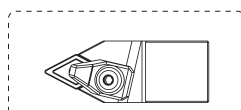
Applicable Tools



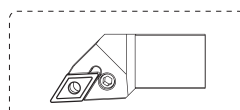
TDHN R/L (107.5°)



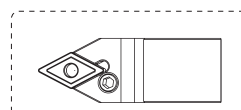
TDJN R/L (93°)



TDNNN (62.5°)



PDJN R/L (93°)



PDNNN (62.5°)

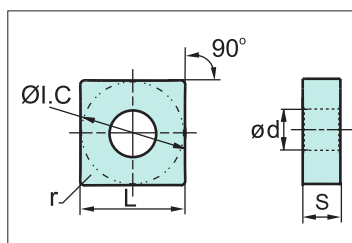
Grade Selection » A 8

Insert Code System » A 15

90°SN ◇ ◇

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16

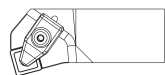


		CVD					PVD					Cermets		Cemented			
Workpiece Material	P Steel																
	M Stainless																
	K Cast Iron																
	N Non-Ferrous																
	S Superalloys																
	H Hard Materials																

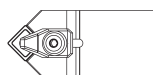
[illegible]

◆ : Stock ◇ : On Demand

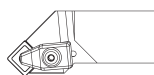
Applicable Tools



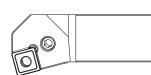
TSKN R/L (75°)



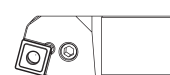
TSDNN (45°)



TSSN R/L (45°)



PSKN R/L (75°)



PSBN R/L (75°)

Grade Selection » A 8

Insert Code System » A 15

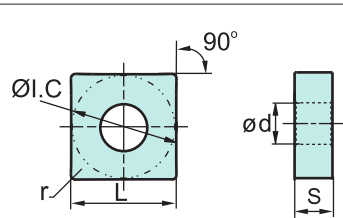
General Turning

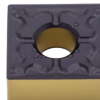
Negative Inserts

90°SN ◇ ◇

- : Continuous Cutting
- ◐ : Light Interrupted Cutting
- ◑ : Medium Interrupted Cutting
- ⊗ : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16

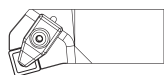
				Workpiece Material	P Steel	   	 	PVD					 	Cermet		Cemented	
					M Stainless		   										
					K Cast Iron								 				
					N Non-Ferrous									 			
					S Superalloys												
					H Hard Metaterials							 					

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK	N
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105
	SNMG120404-MT	0.4	0.70-3.00	0.20-0.50												
	SNMG120408-MT	0.8	0.70-3.00	0.20-0.50												
	SNMG120412-MT	1.2	0.70-3.00	0.20-0.50												

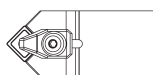
	SNMG120404-GT	0.4	0.70-3.00	0.20-0.50												
	SNMG120408-GT	0.8	0.70-3.00	0.20-0.50												
	SNMG120412-GT	1.2	0.70-3.00	0.20-0.50												
	SNMG120416-GT	1.6	0.70-3.00	0.20-0.50												

◐ : Stock ◑ : On Demand

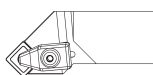
Applicable Tools



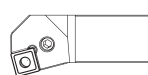
TSKN R/L (75°)



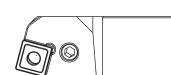
TSDNN (45°)



TSSN R/L (45°)



PSKN R/L (75°)



PSBN R/L (75°)

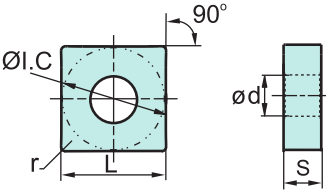
Grade Selection » A 8

Insert Code System » A 15

90°SN

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16

 Workpiece Material	P Steel	M Stainless	K Cast Iron	N Non-Ferrous	S Superalloys	H Hard Materials	CVD				PVD				Cermets		Cemented
																	
																	
																	
																	

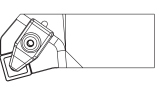
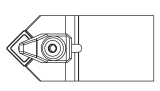
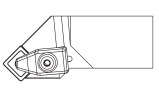
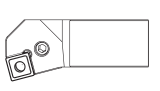
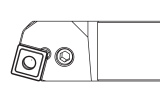
ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	SNMG120404-GM	0.4	0.70-3.00	0.20-0.50																	
	SNMG120408-GM	0.8	0.70-3.00	0.20-0.50																	
	SNMG120412-GM	1.2	0.70-3.00	0.20-0.50																	

	SNMG120404-MA	0.4	1.00-4.00	0.10-0.35																					
	SNMG120408-MA	0.8	1.00-4.00	0.10-0.35																					
	SNMG120412-MA	1.2	1.00-4.00	0.10-0.35																					

	SNMG120404-GQ	0.4	0.70-3.00	0.20-0.50																					
	SNMG120408-GQ	0.8	0.70-3.00	0.20-0.50																					
	SNMG120412-GQ	1.2	0.50-3.00	0.20-0.50																					

 : Stock
  : On Demand

Applicable Tools

				
TSKN R/L (75°)	TSDNN (45°)	TSSN R/L (45°)	PSKN R/L (75°)	PSBN R/L (75°)

Grade Selection » A 8

Insert Code System » A 15

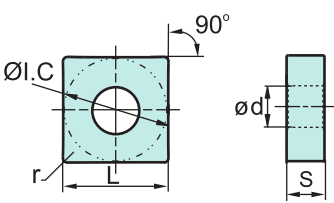
General Turning

Negative Inserts

90°SN ◇ ◇

- : Continuous Cutting
- : Light Interrupted Cutting
- : Medium Interrupted Cutting
- : Heavy Interrupted Cutting

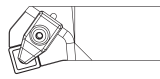
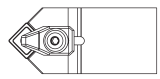
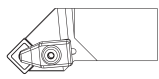
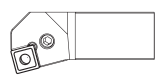
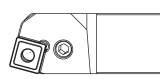
Size	Dimension (mm)			
	L	IC	S	d
1204	12.7	12.7	4.76	5.16
1906	19.05	19.05	6.35	7.94

		Workpiece Material	P Steel				
			M Stainless				
			K Cast Iron				
			N Non-Ferrous				
			S Superalloys				
			H Hard Metaterials				

		ISO	r mm	a _p mm	f mm	P		M	K	PMK		PMH	M		S	H	PK		N					
						C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20		
		ISO	r mm	a _p mm	f mm																			
		ISO	r mm	a _p mm	f mm																			

◆ : Stock ◇ : On Demand

Applicable Tools

				
TSKN R/L (75°)	TSDNN (45°)	TSSN R/L (45°)	PSKN R/L (75°)	PSBN R/L (75°)

Grade Selection » A 8

Insert Code System » A 15

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16
1506	15.87	15.87	6.35	6.35
1906	19.05	19.05	6.35	7.94

Workpiece Material

	CVD					PVD					Cermets		Cemented	
P Steel														
M Stainless														
K Cast Iron														
N Non-Ferrous														
S Superalloys														
H Hard Metals														

ISO		r mm	a _p mm	f mm	P						M	K	PMK	PMH	M		S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	SNMG120408-GR	0.8	2.00-6.50	0.25-0.60		◆	◆															
	SNMG120412-GR	1.2	2.00-6.50	0.25-0.60	◆	◆	◆															
	SNMG150612-GR	1.2	2.00-7.00	0.25-0.55		◇	◇															

	SNMG190608-GR	0.8	3.00-10.0	0.25-0.60		◆	◆															
	SNMG190612-GR	1.2	3.00-10.0	0.25-0.60		◆	◆															
	SNMG190616-GR	1.6	3.00-10.0	0.25-0.60	◆	◆	◆															

	SNMG120408-BR	0.8	1.50-6.00	0.25-0.55					◇						◇	◆						
	SNMG120412-BR	1.2	1.50-6.00	0.25-0.55					◇						◇	◆						
	SNMG150612-BR	1.2	2.00-7.00	0.25-0.55					◇						◇	◆						
	SNMG190616-BR	1.6	3.00-10.0	0.25-0.55					◇						◇	◆						

◆ : Stock ◇ : On Demand

TSKN R/L (75°)

TSDNN (45°)

TSSN R/L (45°)

PSKN R/L (75°)

PSBN R/L (75°)

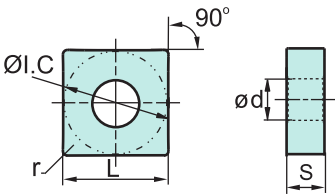
General Turning

Negative Inserts

90°SN

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

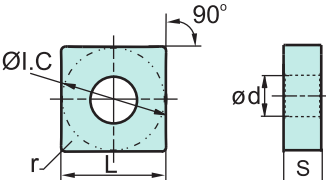
Size	Dimension (mm)			
	L	IC	S	d
1204	12.7	12.7	4.76	5.16
1506	15.87	15.87	6.35	6.35

				Workpiece Material		<table><tr><td>P</td><td>Steel</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>M</td><td>Stainless</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>K</td><td>Cast Iron</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>N</td><td>Non-Ferrous</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>Superalloys</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>H</td><td>Hard Metaterials</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																P	Steel																			M	Stainless																			K	Cast Iron																				N	Non-Ferrous																			S	Superalloys																			H	Hard Metaterials																		
P	Steel																																																																																																																																													
M	Stainless																																																																																																																																													
K	Cast Iron																																																																																																																																													
N	Non-Ferrous																																																																																																																																													
S	Superalloys																																																																																																																																													
H	Hard Metaterials																																																																																																																																													
ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M			S	H	PK		N																																																																																																																										
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20																																																																																																																									
	SNMG120404R-M	0.4	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120408R-M	0.8	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120404L-M	0.4	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120408L-M	0.8	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120404R-S	0.4	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120408R-S	0.8	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120404L-S	0.4	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG120408L-S	0.8	1.00-4.00	0.20-0.50																																																																																																																																										
	SNMG150608R-M	0.8	1.50-7.00	0.25-0.60																																																																																																																																										
	SNMG150612R-M	1.2	1.50-7.00	0.25-0.60																																																																																																																																										
	SNMG150608L-M	0.8	1.50-7.00	0.25-0.60																																																																																																																																										
	SNMG150612L-M	1.2	1.50-7.00	0.25-0.60																																																																																																																																										

90°SN

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16
1506	15.87	15.87	6.35	6.35
1906	19.05	19.05	6.35	7.94

 ØI.C r L 90° ød S	Workpiece Material	CVD					PVD					Cermet	Cemented
		P Steel	M Stainless	K Cast Iron	N Non-Ferrous	S Superalloys	H Hard Materials						
													
													
													
													

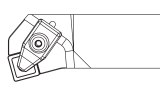
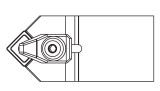
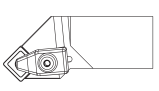
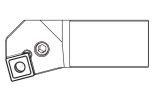
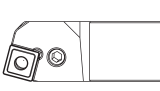
ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10
	SNMG120404	0.4	1.00-4.50	0.15-0.55														
	SNMG120408	0.8	1.00-4.50	0.15-0.55														
	SNMG120412	1.2	1.00-4.50	0.15-0.55														

	SNMG150608	0.8	1.00-4.50	0.15-0.55														
	SNMG150612	1.2	1.00-4.50	0.15-0.55														
	SNMG150616	1.6	1.00-4.50	0.15-0.55														

	SNMG190612	1.2	2.00-7.00	0.15-0.80														
	SNMG190616	1.6	3.00-7.00	0.15-0.80														

 : Stock
  : On Demand

Applicable Tools

				
TSKN R/L (75°)	TSDNN (45°)	TSSN R/L (45°)	PSKN R/L (75°)	PSBN R/L (75°)

Grade Selection » A 8

Insert Code System » A 15

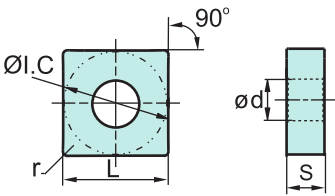
General Turning

Negative Inserts

90°SN

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

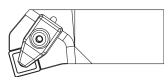
Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16
1506	15.87	15.87	6.35	6.35
1906	19.05	19.05	6.35	7.94

				Workpiece Material	P Steel																		
					M Stainless																		
					K Cast Iron																		
					N Non-Ferrous																		
					S Superalloys																		
					H Hard Metaterials																		

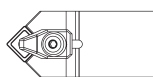
ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M			S	H	PK		N			
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	SNMA120404	0.4	1.00-4.50	0.15-0.55																	
	SNMA120408	0.8	1.00-4.50	0.15-0.55																	
	SNMA120412	1.2	1.00-4.50	0.15-0.55																	
	SNMA150608	0.8	1.00-4.50	0.15-0.55																	
	SNMA150612	1.2	2.00-6.00	0.15-0.55																	
	SNMA150616	1.6	2.00-6.00	0.15-0.70																	
	SNMA190612	1.2	2.00-7.00	0.15-0.80																	
	SNMA190616	1.6	3.00-7.00	0.15-0.80																	

◆ : Stock ◇ : On Demand

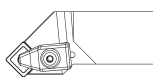
Applicable Tools



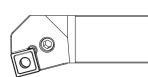
TSKN R/L (75°)



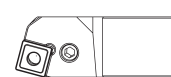
TSDNN (45°)



TSSN R/L (45°)



PSKN R/L (75°)



PSBN R/L (75°)

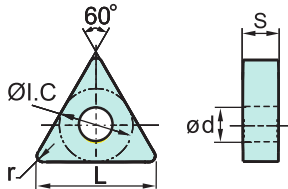
Grade Selection » A 8

Insert Code System » A 15

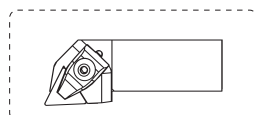
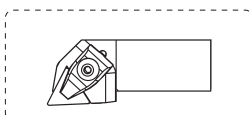
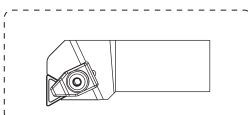
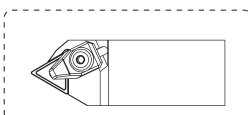
60°TN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.525	4.76	3.81

				Workpiece Material	P Steel					PVD						Cemented							
M Stainless																							
K Cast Iron																							
N Non-Ferrous																							
S Superalloys																							
H Hard Metaterials																							
ISO				r mm	a _p mm	f mm	P				M	K	PMK	PMH	M		S	H	PK		N		
				C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20			
																							
																							
				TNMG160404-BF	0.4	0.15-2.00	0.08-0.20																
				TNMG160408-BF	0.8	0.15-2.00	0.08-0.20																

◇ : Stock ◇ : On Demand

Applicable Tools

TTJN R/L (93°)

TTGN R/L (90°)

TTFN R/L (90°)

TTENN (60°)

Grade Selection ▶ A 8

Insert Code System ▶ A 15

General Turning

Negative Inserts

60°TN ◇ ◇

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.525	4.76	3.81

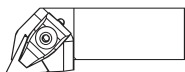
				Workpiece Material	P Steel												
					M Stainless												
					K Cast Iron												
					N Non-Ferrous												
					S Superalloys												
				H Hard Meterials													

ISO	r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N	
				C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10
	TNMG160404-MT	0.4	0.70-3.00	0.20-0.50													
	TNMG160408-MT	0.8	0.70-3.00	0.20-0.50													
	TNMG160412-MT	1.2	0.70-3.00	0.20-0.50													

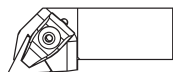
	TNMG160404-GT	0.4	0.70-3.00	0.20-0.50													
	TNMG160408-GT	0.8	0.70-3.00	0.20-0.50													
	TNMG160412-GT	1.2	0.70-3.00	0.20-0.50													

◆ : Stock ◇ : On Demand

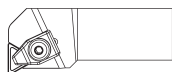
Applicable Tools



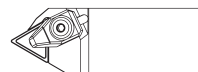
TTJN R/L (93°)



TTGN R/L (90°)



TTFN R/L (90°)



TTENN (60°)

Grade Selection » A 8

Insert Code System » A 15

60°TN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.525	4.76	3.81
2204	22	12.7	4.76	5.16

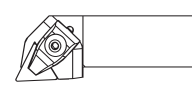
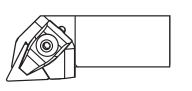
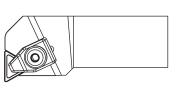
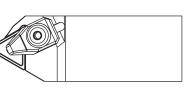
		Workpiece Material	P Steel														
			M Stainless														
			K Cast Iron														
			N Non-Ferrous														
			S Superalloys														
			H Hard Metaterials														

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M			S	H	PK		N			
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	TNMG160404-AM	0.4	1.00-5.00	0.20-0.50																	
	TNMG160408-AM	0.8	1.00-5.00	0.20-0.50																	
	TNMG160412-AM	1.2	1.00-5.00	0.20-0.50																	

	TNMG160404-GM	0.4	1.00-5.00	0.20-0.50															
	TNMG160408-GM	0.8	1.00-5.00	0.20-0.50															
	TNMG160412-GM	1.2	1.00-5.00	0.20-0.50															
	TNMG220408-GM	0.8	2.00-6.60	0.20-0.50															
	TNMG220412-GM	1.2	2.00-6.60	0.20-0.50															

◆ : Stock ◇ : On Demand

Applicable Tools

			
TTJN R/L (93°)	TTGN R/L (90°)	TTFN R/L (90°)	TTENN (60°)

Grade Selection » A 8

Insert Code System » A 15

General Turning

Negative Inserts

60°TN ◇ ◇

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.525	4.76	3.81

				Workpiece Material		CVD										PVD										Cermet		Cemented	
		P Steel			●	●	●	●											●	●									
		M Stainless							●					●	●	●	●	●											
		K Cast Iron								●				●						●	●								
		N Non-Ferrous																			●	●							
		S Superalloys															●												
		H Hard Metaterials																	●										

ISO		r mm	a _p mm	f mm	P		M	K	PMK		PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10
	TNMG160404-BM	0.4	0.40-5.00	0.10-0.55					◇				◇	◇	◇					
	TNMG160408-BM	0.8	0.40-5.00	0.10-0.55					◇				◇	◇	◇					
	TNMG160412-BM	1.2	0.40-5.00	0.10-0.55					◇				◇	◇	◇					

	TNMG160404-SM	0.4	0.40-2.00	0.10-0.25							◇	◇		◇	◇					
	TNMG160408-SM	0.8	0.40-2.00	0.10-0.25							◇	◇		◇	◇					
	TNMG160412-SM	1.2	0.40-2.00	0.10-0.25							◇	◇		◇	◇					

	TNMG160404-MA	0.4	1.00-4.00	0.10-0.35							◇	◇		◇	◇					
	TNMG160408-MA	0.8	1.00-4.00	0.10-0.35							◇	◇		◇	◇					
	TNMG160412-MA	1.2	1.00-4.00	0.10-0.35							◇	◇		◇	◇					

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.525	4.76	8.81

◆ : Stock ◇ : On Demand

TTENN (60°)

Insert Code System » A 15

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

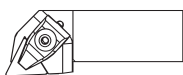
Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.52	4.76	3.81
2204	22	12.7	4.76	5.16

Workpiece Material

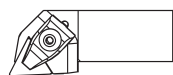
	CVD						PVD						Cermets		Cemented	
P Steel	●	●	●	●			●	●					●	●		
M Stainless					●		●	●	●	●	●					
K Cast Iron						●	●						●	●		
N Non-Ferrous															●	●
S Superalloys											●					
H Hard Metaterials							●					●				

[illegible]

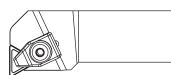
◆ : Stock ◇ : On Demand



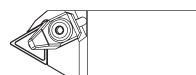
TTJN R/L (93°)



TTGN R/L (90°)



TTFN R/L (90°)



TTENN (60°)

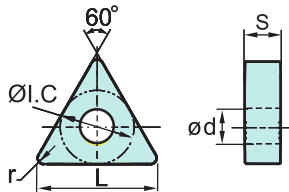
General Turning

Negative Inserts

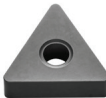
60°TN ◇ ◇

- : Continuous Cutting
- ◐ : Light Interrupted Cutting
- ◑ : Medium Interrupted Cutting
- ⊗ : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.5	9.52	4.76	3.81
2204	22	12.7	4.76	5.16

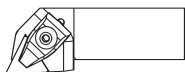
				Workpiece Material	P Steel					
					M Stainless					
					K Cast Iron					
					N Non-Ferrous					
					S Superalloys					
					H Hard Metaterials					

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK	N			
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20
	TNMA160404	0.4	1.00-4.50	0.15-0.55															
	TNMA160408	0.8	1.00-4.50	0.15-0.55															
	TNMA160412	1.2	1.00-4.50	0.15-0.55															

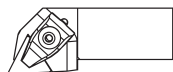
	TNMA220408	0.8	2.00-6.00	0.15-0.55															
	TNMA220412	1.2	2.00-6.00	0.15-0.55															
	TNMA220416	1.6	2.00-6.00	0.15-0.55															

◆ : Stock ◊ : On Demand

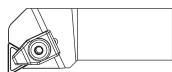
Applicable Tools



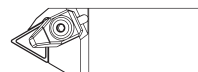
TTJN R/L (93°)



TTGN R/L (90°)



TTFN R/L (90°)



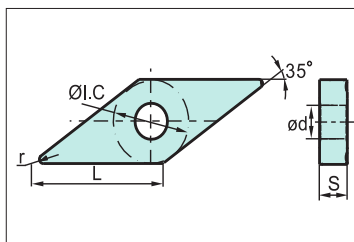
TTENN (60°)

Grade Selection » A 8

Insert Code System » A 15

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.6	9.525	4.76	3.81



		CVD					PVD					Cermets		Cemented			
Workpiece Material	P Steel																
	M Stainless																
	K Cast Iron																
	N Non-Ferrous																
	S Superalloys																
	H Hard Metaterials																

[illegible]

◆ : Stock ◇ : On Demand

TVHN R/L (107.5°) TVJN R/L (93°) TVVNN (72.5°)

Insert Code System » A 15

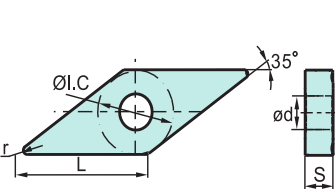
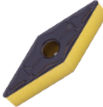
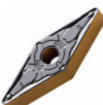
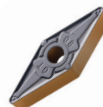
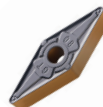
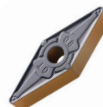
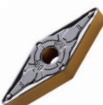
General Turning

Negative Inserts

35°VN

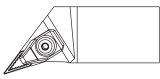
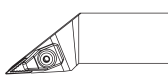
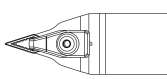
- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.6	9.525	4.76	3.81

				Workpiece Material	P Steel																					
	M Stainless																									
	K Cast Iron																									
	N Non-Ferrous																									
	S Superalloys																									
	H Hard Metarials																									
		P	C1105	C1115	C1125	C1135	M	K	PMK	PMH	M	S	H	PK	N											
			C1105	C1115	C1125	C1135	M	K	PMK	PMH						P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
			C1105	C1115	C1125	C1135	M	K	PMK	PMH						P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
C1105			C1115	C1125	C1135	M	K	PMK	PMH	P7025						P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	VNMG160404-MT	0.4	0.50-3.00	0.20-0.50																						
	VNMG160408-MT	0.8	0.50-3.00	0.20-0.50																						
	VNMG160412-MT	1.2	1.00-4.00	0.20-0.50																						
	VNMG160404-GT	0.4	0.50-3.00	0.20-0.50																						
	VNMG160408-GT	0.8	0.50-3.00	0.20-0.50																						
	VNMG160412-GT	1.2	1.00-4.00	0.20-0.50																						
	VNMG160404-GM	0.4	0.50-3.00	0.20-0.50																						
	VNMG160408-GM	0.8	0.50-3.00	0.20-0.50																						
	VNMG160412-GM	1.2	1.00-4.00	0.20-0.50																						

Stock On Demand

Applicable Tools

		
TVHN R/L (107.5°)	TVJN R/L (93°)	TVVNN (72.5°)

Grade Selection » A 8

Insert Code System » A 15

35°VN ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.6	9.525	4.76	3.81

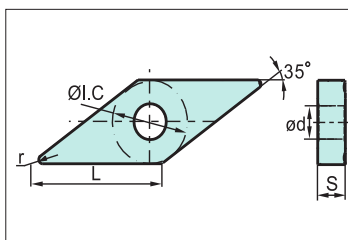
				Workpiece Material																															
				P Steel				M Stainless				K Cast Iron				N Non-Ferrous				S Superalloys				H Hard Meterials											
				●				●				●				●				●				●				●				●			
												●				●				●				●				●							
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Negative Inserts

35°VN ♦ ♦

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1604	16.6	9.525	4.76	8.81

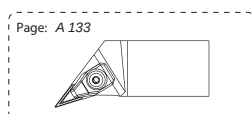


		CVD					PVD					Cermets		Cemented				
Workpiece Material	P Steel																	
	M Stainless																	
	K Cast Iron																	
	N Non-Ferrous																	
	S Superalloys																	
	H Hard Materials																	

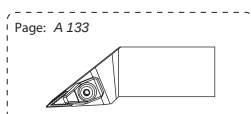
[illegible][illegible][illegible]

◆ : Stock ◇ : On Demand

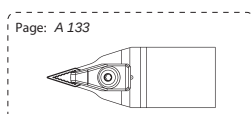
Applicable Tools



TVHN R/L (107.5°)



TVJN R/L (93°)

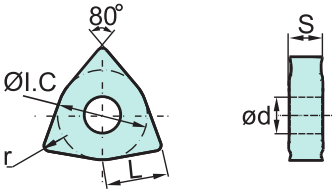


TVVNN (72.5°)

80°WN

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

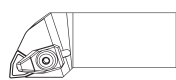
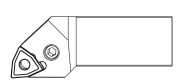
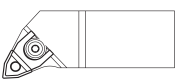
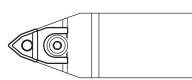
Size	Dimension (mm)			
	L	I.C	S	d
0604	6.6	9.52	4.76	3.81
0804	8.7	12.7	4.76	5.16

				CVD					PVD					Cermet		Cemented			
Workpiece Material				P Steel	M Stainless	K Cast Iron	N Non-Ferrous	S Superalloys	H Hard Metaterials										
																			
																			
																			
																			
																			

ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M				S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510		NHC10	NHC20	NHK10	NHK20
	WNMG060404-GF	0.4	0.25-2.00	0.08-0.18																		
	WNMG060408-GF	0.8	0.25-2.00	0.08-0.18																		
	WNMG080404-GF	0.4	0.25-2.00	0.08-0.18																		
	WNMG080408-GF	0.8	0.25-2.00	0.08-0.18																		
	WNMG080402-BF	0.2	0.25-2.00	0.08-0.20																		
	WNMG080404-BF	0.4	0.25-2.00	0.08-0.20																		
	WNMG080408-BF	0.8	0.25-2.00	0.08-0.20																		

 : Stock
  : On Demand

Applicable Tools

			
TWLN R/L (95°)	PWLN R/L (95°)	MWLN R/L (95°)	MWDNN (50°)

Grade Selection » A 8

Insert Code System » A 15

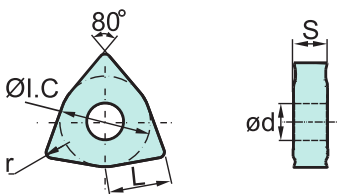
General Turning

Negative Inserts

80°WN

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0804	8.7	12.7	4.76	5.16

				Workpiece Material		CVD										PVD										Cermet		Cemented							
P Steel		M Stainless		K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Metarials																									

Stock On Demand

Applicable Tools

TWLN R/L (95°)	PWLN R/L (95°)	MWLN R/L (95°)	MWDNN (50°)

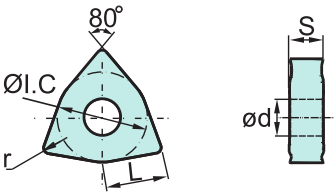
Grade Selection » A 8

Insert Code System » A 15

80°WN ◇ ◇

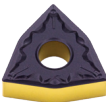
- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0604	6.6	9.52	4.76	3.81
0804	8.7	12.7	4.76	5.16

				Workpiece Material P Steel M Stainless K Cast Iron N Non-Ferrous S Superalloys H Hard Metaterials	CVD					PVD					Cermet		Cemented	
					● ● ● ●	● ●	● ●	● ●										
					●	● ● ● ● ●												
					●	●												

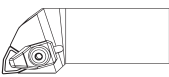
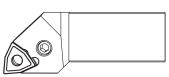
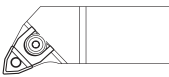
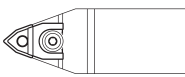
	ISO	r mm	a _p mm	f mm	P						M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115			P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
		WNMG060404-GT	0.4	0.70-3.00	0.20-0.50		◇	◇															
		WNMG060408-GT	0.8	0.70-3.00	0.20-0.50		◇	◇															
		WNMG060412-GT	1.2	0.70-3.00	0.20-0.50	◇	◇	◇															

	WNMG080404-GT	0.4	0.70-3.00	0.20-0.50		◇	◇															
	WNMG080408-GT	0.8	0.70-3.00	0.20-0.50		◇	◇															
	WNMG080412-GT	1.2	1.00-3.00	0.20-0.50		◇	◇	◇														
	WNMG080416-GT	1.6	1.00-3.00	0.20-0.50	◇	◇	◇	◇														

	WNMG080404-AM	0.4	1.00-3.00	0.20-0.50		◇	◇			◇												
	WNMG080408-AM	0.8	1.00-3.00	0.20-0.50		◇	◇			◇												
	WNMG080412-AM	1.2	1.00-3.00	0.20-0.50		◇	◇			◇												

◇ : Stock ◇ : On Demand

Applicable Tools

			
TWLN R/L (95°)	PWLN R/L (95°)	MWLN R/L (95°)	MWDNN (50°)

Grade Selection ▶ A 8

Insert Code System ▶ A 15

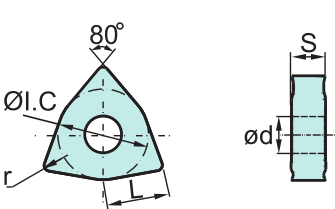
General Turning

Negative Inserts

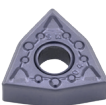
80°WN

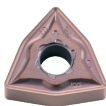
- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0804	8.7	12.7	4.76	5.16

				Workpiece Material		CVD					PVD					Cermet		Cemented		
		P Steel																		
		M Stainless																		
		K Cast Iron																		
		N Non-Ferrous																		
		S Superalloys																		
		H Hard Metaterials																		

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N		
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20
	WNMG080404-BM	0.4	0.40-4.00	0.10-0.55															
	WNMG080408-BM	0.8	0.40-4.00	0.10-0.55															
	WNMG080412-BM	1.2	0.40-4.00	0.10-0.55															

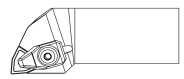
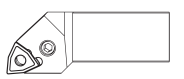
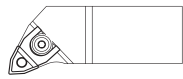
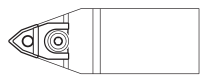
	WNMG080404-MS	0.4	0.70-3.00	0.10-0.35																
	WNMG080408-MS	0.8	0.70-3.00	0.10-0.35																
	WNMG080412-MS	1.2	0.70-3.00	0.10-0.35																

	WNMG080404-SM	0.4	0.70-3.00	0.10-0.35															
	WNMG080408-SM	0.8	0.70-3.00	0.10-0.35															
	WNMG080412-SM	1.2	0.70-3.00	0.10-0.35															

	WNMG080404-DM	0.4	0.70-3.00	0.10-0.35																
	WNMG080408-DM	0.8	0.70-3.00	0.10-0.35																
	WNMG080412-DM	1.2	0.70-3.00	0.10-0.35																

◆ : Stock ◇ : On Demand

Applicable Tools

			
TWLN R/L (95°)	PWLN R/L (95°)	MWLN R/L (95°)	MWDNN (50°)

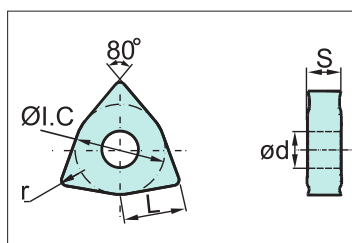
Grade Selection » A 8

Insert Code System » A 15

80°WN ♦ ♦

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0804	8.7	12.7	4.76	5.16

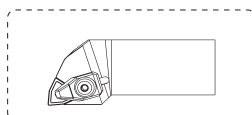


		CVD					PVD					Cermets		Cemented			
Workpiece Material	P Steel																
	M Stainless																
	K Cast Iron																
	N Non-Ferrous																
	S Superalloys																
	H Hard Materials																

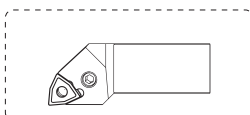
[illegible][illegible][illegible][illegible]

◆ : Stock ◇ : On Demand

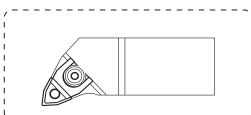
Applicable Tools



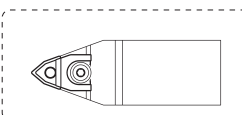
TWLN R/L (95°)



PWLN R/L (95°)



MWLN R/L (95°)



MWDNN (50°)

General Turning

Negative Inserts

80°WN ♦ ♦

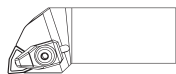
-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0804	8.7	12.7	4.76	5.16

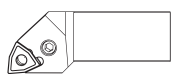
[illegible]

◆ : Stock ◇ : On Demand

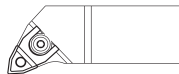
Applicable Tools



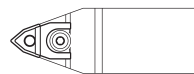
TWLN R/L (95°)



PWLN R/L (95°)



MWLN R/L (95°)



MWDNN (50°)

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0604	6.6	9.52	4.76	3.81
0804	8.7	12.7	4.76	5.16

Workpiece Material

	CVD					PVD					Cermet	Cemented			
P Steel															
M Stainless															
K Cast Iron															
N Non-Ferrous															
S Superalloys															
H Hard Meterials															

[illegible]

◆ : Stock ◇ : On Demand

TWLN R/L (95°)

PWLN R/L (95°)

MWLN R/L (95°)

MWDNN (50°)

General Turning

Negative Inserts

80°WN ♦♦

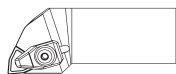
-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0604	6.6	9.52	4.76	3.81
0804	8.7	12.7	4.76	5.16

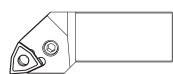
[illegible]

◆ : Stock ◇ : On Demand

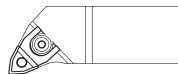
Applicable Tools



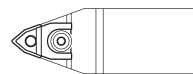
TWLN R/L (95°)



PWLN R/L (95°)



MWLN R/L (95°)

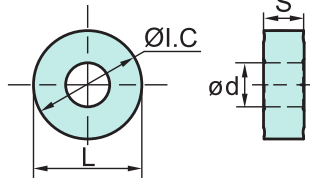


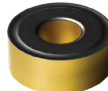
MWDNN (50°)

RN ◇ ◇

- : Continuous Cutting
 ◐ : Light Interrupted Cutting
 ◑ : Medium Interrupted Cutting
 ◒ : Heavy Interrupted Cutting

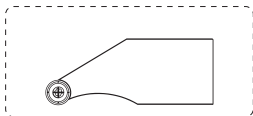
Size	Dimension (mm)			
	L	I.C	S	d
1204	12.7	12.7	4.76	5.16

		Workpiece Material		P Steel	   									 						
				M Stainless							    									
				K Cast Iron													 			
				N Non-Ferrous														 		
				S Superalloys																
		H Hard Meterials																		

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10
	RNMG120400		0.50-6.00	0.10-1.00														

◇ : Stock ◇ : On Demand

Applicable Tools


SRHN R/L

Grade Selection ▶ A 8

Insert Code System ▶ A 15

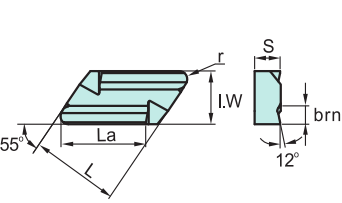
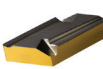
General Turning

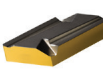
Positive Inserts

55°KN

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

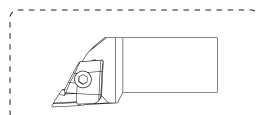
Size	Dimension (mm)		
	L	I.W	S
1604	16.15	9.52	4.76

				Workpiece Material		P Steel		   			 							 		
		M Stainless										    								
		K Cast Iron															 			
		N Non-Ferrous															 			
		S Superalloys																		
		H Hard Metaterials																		

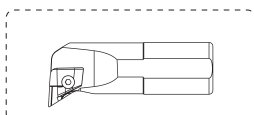
ISO		r mm	ap mm	f mm	P			M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1025	C1125	C1225	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10
	KNUX160405L11	0.5	0.50-6.00	0.10-0.70																
	KNUX160405L12	0.5	0.50-6.00	0.10-0.70																
	KNUX160405R11	0.5	0.50-6.00	0.10-0.70																
	KNUX160405R12	0.5	0.50-6.00	0.10-0.70																

 : Stock  : On Demand

Applicable Tools



CKJN R/L (93°)



CKUN R/L (90°)

Grade Selection » A 8

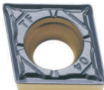
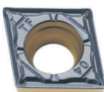
Insert Code System » A 15

80°CC ♦ ♦

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

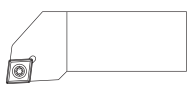
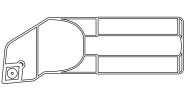
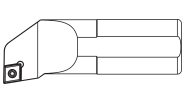
Size	Dimension (mm)			
	L	I.C	S	d
0602	6.4	6.35	2.38	2.8
09T3	9.7	9.52	3.97	4.4

				CVD					PVD					Cermet		Cemented	
				P	M	K	N	S	H	P	M	S	H	PK	N		
				Steel	Stainless	Cast Iron	Non-Ferrous	Superalloys	Hard Materials	Steel	Stainless	Cast Iron	Non-Ferrous	Superalloys	Hard Materials		
				●	●	●	●			●	●			●	●		
										●	●	●	●				
										●				●	●		
																●	●
												●					
										●							
										●							

ISO		r mm	a _p mm	f mm	P					M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115		P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	CCMT060204-TF	0.4	0.20-1.50	0.05-0.25		♦	♦							♦	♦							
	CCMT060208-TF	0.8	0.40-1.50	0.05-0.25		♦	♦							♦	♦							
	CCMT09T304-TF	0.4	0.20-1.50	0.05-0.25		♦	♦							♦	♦							
	CCMT09T308-TF	0.8	0.40-1.50	0.05-0.25		♦	♦							♦	♦							

♦ : Stock ♦ : On Demand

Applicable Tools

				
SCLC R/L (95°)	SCAC R/L (90°)	SCMCN (50°)	SCLC R/L (95°)	SCFC R/L (90°)

Grade Selection » A 8

Insert Code System » A 15

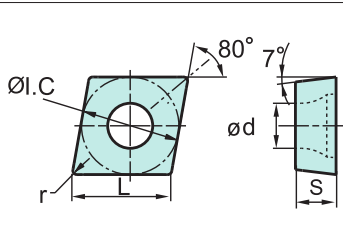
General Turning

Positive Inserts

80°CC

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0602	6.4	6.35	2.38	2.8
09T3	9.7	9.52	3.97	4.4
1204	12.9	12.7	4.76	5.56

				Workpiece Material		CVD				PVD				Cermet		Cemented	
P Steel		M Stainless				K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Metaterials					

◆ : Stock ◇ : On Demand

Applicable Tools

SCLC R/L (95°)	SCAC R/L (90°)	SCMCN (50°)	SCLC R/L (95°)	SCFC R/L (90°)

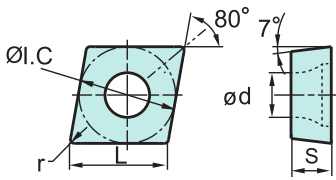
Grade Selection » A 8

Insert Code System » A 15

80°CC ◇ ◇

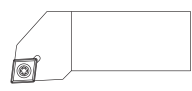
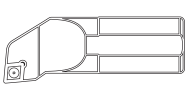
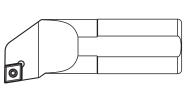
- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0602	6.4	6.35	2.38	2.8
09T3	9.7	9.52	3.97	4.4

				Workpiece Material		CVD										PVD										Cermet		Cemented	
P Steel		M Stainless				K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Metaterials																	

◆ : Stock ◇ : On Demand

Applicable Tools

				
SCLC R/L (95°)	SCAC R/L (90°)	SCMCN (50°)	SCLC R/L (95°)	SCFC R/L (90°)

Grade Selection » A 8

Insert Code System » A 15

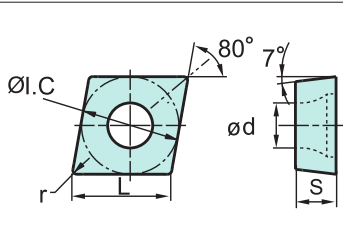
General Turning

Positive Inserts

80°CC

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

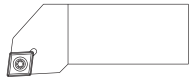
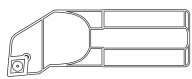
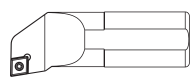
Size	Dimension (mm)			
	L	I.C	S	d
0602	6.4	6.35	2.38	2.8
09T3	9.7	9.52	3.97	4.4
1204	12.9	12.7	4.76	5.56

				Workpiece Material		CVD					PVD					Cermet		Cemented		
P Steel		M Stainless		K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Metaterials										
● ● ● ●												● ● ● ● ●					● ●			
						●				● ● ● ● ●										
						●		●							● ●					
																	● ●			
										●										
															●					

ISO		r mm	ap mm	f mm	P		M	K	PMK		PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10
	CCMT060204-TM	0.4	0.20-1.50	0.05-0.25		◆	◆			◆			◆	◆	◆					
	CCMT060208-TM	0.8	0.40-1.50	0.05-0.25		◆	◆			◆			◆	◆	◆					
	CCMT09T304-TM	0.4	0.20-1.50	0.05-0.25		◆	◆			◆			◆	◆	◆					
	CCMT09T308-TM	0.8	0.20-1.50	0.10-0.30		◆	◆			◆			◆	◆	◆					
	CCMT120404-TM	0.4	0.20-1.50	0.05-0.25		◆	◆			◆			◆	◆	◆					
	CCMT120408-TM	0.8	0.40-1.50	0.10-0.30		◆	◆			◆			◆	◆	◆					
	CCMT120412-TM	1.2	0.80-2.50	0.10-0.35		◆	◆			◆			◆	◆	◆					

◆ : Stock ◇ : On Demand

Applicable Tools

				
SCLC R/L (95°)	SCAC R/L (90°)	SCMCN (50°)	SCLC R/L (95°)	SCFC R/L (90°)

Grade Selection » A 8

Insert Code System » A 15

General Turning

Positive Inserts

55°DC ◇ ◇

- : Continuous Cutting
- ◐ : Light Interrupted Cutting
- ◑ : Medium Interrupted Cutting
- ◒ : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0702	7.8	6.35	2.38	2.8
11T3	11.6	9.52	3.97	4.4

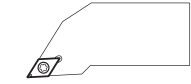
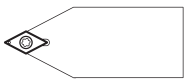
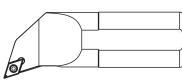
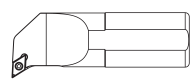
					Workpiece Material	P Steel	●	●	●	●							●	●		
M Stainless						●			●	●	●	●	●							
K Cast Iron							●		●						●	●				
N Non-Ferrous																	●	●		
S Superalloys															●					
H Hard Materials											●		●							

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N				
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	DCMT070204-TF	0.4	0.20-1.50	0.05-0.25	◇	◇	◇						◇	◇							
	DCMT070208-TF	0.8	0.40-1.50	0.05-0.25	◇	◇	◇						◇	◇							

	DCMT11T304-TF	0.4	0.20-1.50	0.05-0.25	◇	◇	◇						◇	◇							
	DCMT11T308-TF	0.8	0.40-1.50	0.05-0.25	◇	◇	◇						◇	◇							

◇ : Stock ◇ : On Demand

Applicable Tools

				
SDJC R/L (93°)	SDNCN (62.5°)	SDHC R/L (107.5°)	SDQC R/L (107.5°)	SDUC R/L (93°)

Grade Selection » A 8

Insert Code System » A 15

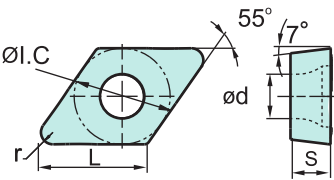
General Turning

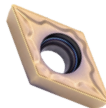
Positive Inserts

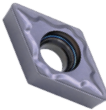
55°DC

: Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0702	7.8	6.35	2.38	2.8
11T3	11.6	9.52	3.97	4.4

				Workpiece Material		CVD										PVD										Cermet		Cemented	
				P Steel		●●●●										●●													
				M Stainless						●		●●●●●																	
				K Cast Iron						●		●								●●									
				N Non-Ferrous																						●●			
				S Superalloys																									
				H Hard Meterials																						●			

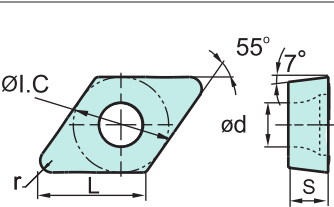
ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M		S	H	PK		N				
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	DCMT070204-JW	0.4	0.40-1.50	0.05-0.25		●	●			●	●	●			●						
	DCMT070208-JW	0.8	0.40-1.50	0.05-0.30		●	●			●	●	●			●						

	DCMT11T304-JW	0.4	0.40-3.00	0.05-0.25		●	●			●	●	●			●						
	DCMT11T308-JW	0.8	0.80-3.00	0.05-0.30		●	●			●	●	●			●						

55°DC ◇ ◇

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0702	7.8	6.35	2.38	2.8
11T3	11.6	9.52	3.97	4.4

				Workpiece Material		CVD										PVD										Cermet		Cemented	
		P Steel			●	●	●	●										●	●										
		M Stainless							●				●	●	●	●	●												
		K Cast Iron											●						●	●									
		N Non-Ferrous																			●	●							
		S Superalloys																											
		H Hard Metarials																											

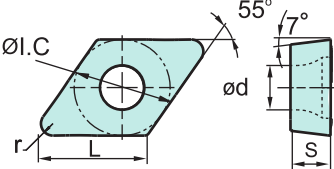
General Turning

Positive Inserts

55°DC

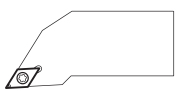
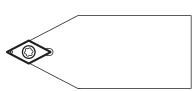
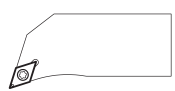
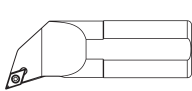
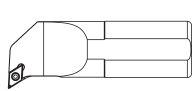
- : Continuous Cutting
- : Light Interrupted Cutting
- : Medium Interrupted Cutting
- : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
0702	7.8	6.35	2.38	2.8
11T3	11.6	9.52	3.97	4.4

				Workpiece Material		CVD										PVD										Cermet		Cemented	
				P Steel																									

◆ : Stock ◆ : On Demand

Applicable Tools

				
SDJC R/L (93°)	SDNCN (62.5°)	SDHC R/L (107.5°)	SDQC R/L (107.5°)	SDUC R/L (93°)

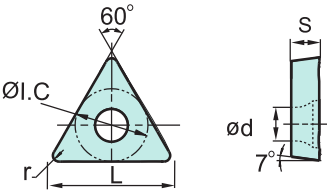
Grade Selection » A 8

Insert Code System » A 15

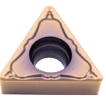
60°TC

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1102	11	6.35	2.38	2.8
16T3	16.5	9.52	3.97	4.4

		Workpiece Material																			
		P	Steel	   				 								 					
		M	Stainless									    									
		K	Cast Iron													 					
		N	Non-Ferrous																	 	
		S	Superalloys																		
		H	Hard Metaterials																		

ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	TCMT110204-JW	0.4	0.40-2.00	0.10-0.30																	
	TCMT110208-JW	0.8	0.60-2.00	0.10-0.30																	
	TCMT16T304-JW	0.4	0.40-3.30	0.10-0.30																	
	TCMT16T308-JW	0.8	0.60-3.30	0.10-0.30																	

	TCMT16T304-GF	0.4	0.20-1.50	0.05-0.25																	
	TCMT16T308-GF	0.8	0.40-1.50	0.05-0.25																	

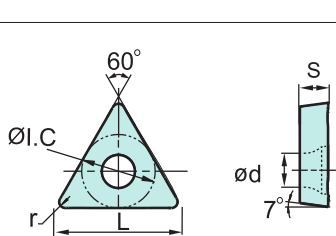
General Turning

Positive Inserts

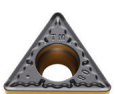
60°TC ♦ ♦

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1102	11	6.35	2.38	2.8
16T3	16.5	9.52	3.97	4.4

				Workpiece Material	P Steel	   	 							 				
					M Stainless					   								
					K Cast Iron										 			
					N Non-Ferrous										 			
					S Superalloys													
					H Hard Metaterials													

ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M			S	H	PK		N		
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	TCMT110204-TF	0.4	0.20-1.50	0.05-0.25																		
	TCMT110208-TF	0.8	0.40-1.50	0.05-0.25																		
	TCMT16T304-TF	0.4	0.20-1.50	0.05-0.25																		
	TCMT16T308-TF	0.8	0.40-1.50	0.05-0.25																		

	TCMT110204-TM	0.4	0.20-1.50	0.05-0.25																		
	TCMT110208-TM	0.8	0.40-1.50	0.05-0.25																		
	TCMT16T304-TM	0.4	0.20-1.50	0.05-0.25																		
	TCMT16T308-TM	0.8	0.40-1.50	0.05-0.25																		
	TCMT16T312-TM	1.2	0.60-1.50	0.05-0.25																		

◆ : Stock ◇ : On Demand

Applicable Tools



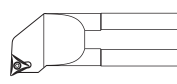
STJC R/L (93°)



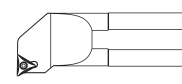
STGC R/L (90°)



STFC R/L (90°)



STUC R/L (93°)



STFC R/L (90°)

Grade Selection » A 8

Insert Code System » A 15

90°SC ♦ ♦

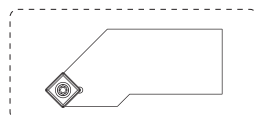
-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
09T3	9.52	9.52	3.97	4.4
1204	12.7	12.7	4.76	5.56

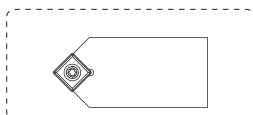
[illegible]

◆ : Stock ◇ : On Demand

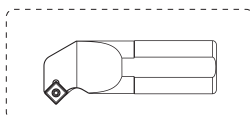
Applicable Tools



SSSC R/L (45°)



SSDCN (45°)



SSSC R/L (45°)

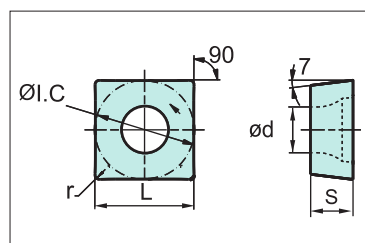
General Turning

Positive Inserts

90°SC ♦ ♦

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
09T3	9.52	9.52	3.97	4.4
1204	12.7	12.7	4.76	5.56

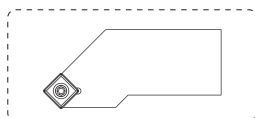


		CVD					PVD					Cermets		Cemented		
Workpiece Material	P Steel															
	M Stainless															
	K Cast Iron															
	N Non-Ferrous															
	S Superalloys															
	H Hard Metals															

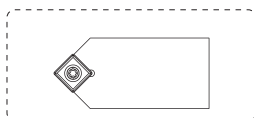
[illegible][illegible]

◆ : Stock ◇ : On Demand

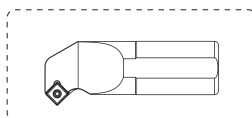
Applicable Tools



SSSC R/L (45°)



SSDCN (45°)



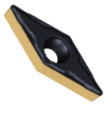
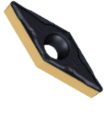
SSSC R/L (45°)

35°VB

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

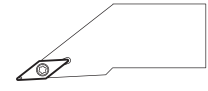
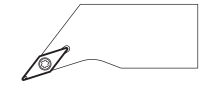
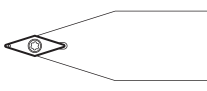
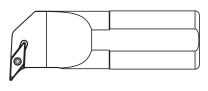
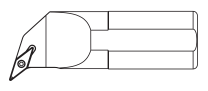
Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4

				CVD				PVD				Cermet	Cemented
Workpiece Material				P	M	K	N	S	H				
P Steel													
M Stainless													
K Cast Iron													
N Non-Ferrous													
S Superalloys													
H Hard Materials													

ISO				r mm	a _p mm	f mm	P						M		K		PMK PMH					M		S	H	PK		N	
							C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20						
	VBMT110304-TF	0.4	0.20-1.50	0.05-0.25																									
	VBMT110308-TF	0.8	0.40-1.50	0.05-0.25																									
	VBMT160404-TF	0.4	0.20-1.50	0.05-0.25																									
	VBMT160408-TF	0.8	0.40-1.50	0.05-0.25																									

 : Stock
  : On Demand

Applicable Tools

				
SVJB R/L (93°)	SVHB R/L (107.5°)	SVBN (72.5°)	SVUB R/L (93°)	SVQB R/L (107.5°)

Grade Selection » A 8

Insert Code System » A 15

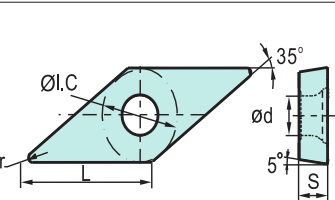
General Turning

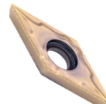
Positive Inserts

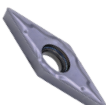
35°VB

- Continuous Cutting
- Light Interrupted Cutting
- Medium Interrupted Cutting
- Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4

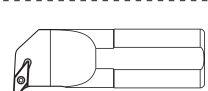
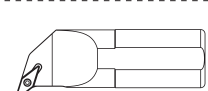
				Workpiece Material		CVD										PVD										Cermet		Cemented							
P Steel		M Stainless		K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Metarials																									
● ● ● ●												● ● ● ● ●										● ● ● ● ●										● ●			
						●						● ● ● ● ●																							
						●						●																				● ●			
																																		● ●	
																						●													
																																●			

		ISO		r mm	a _p mm	f mm	P						M		K	PMK		PMH		M			S	H	PK		N	
		C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20										
		VBMT110304-JW	0.4	0.20-1.50	0.05-0.25			◆				◆	◆		◇	◆		◇										
		VBMT110308-JW	0.8	0.40-1.50	0.05-0.25			◆				◆	◆		◇	◆		◇										

		ISO		r mm	a _p mm	f mm			◆		◆	◆	◆		◇	◆		◇								
		VBMT160404-JW	0.4	0.20-1.50	0.05-0.25				◆		◆	◆	◆		◇	◆		◇								
		VBMT160408-JW	0.8	0.40-1.50	0.05-0.25			◆		◆				◇	◆		◇									

◆ : Stock ◇ : On Demand

Applicable Tools

				
SVJB R/L (93°)	SVHB R/L (107.5°)	SVVBN (72.5°)	SVUB R/L (93°)	SVQB R/L (107.5°)

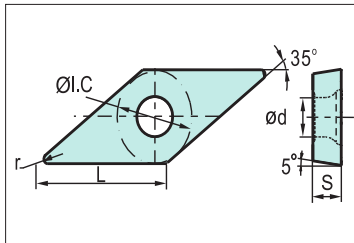
Grade Selection » A 8

Insert Code System » A 15

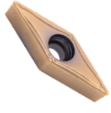
35°VB ◇ ◇

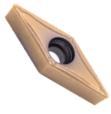
- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4



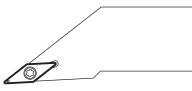
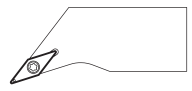
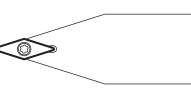
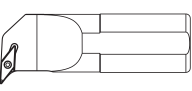
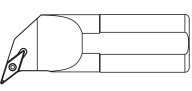
Workpiece Material	CVD					PVD					Cermet		Cemented		
	P	M	K	N	S	H	P	M	K	N	S	H	PK	N	
Steel	●	●	●	●			●	●					●	●	
Stainless					●		●	●	●	●	●				
Cast Iron						●	●						●	●	
Non-Ferrous														●	●
Superalloys											●				
Hard Materials							●					●			

ISO		r mm	a _p mm	f mm	P						M	K	PMK	PMH	M		S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	VBMT110304-GF	0.4	0.20-1.50	0.05-0.25			◆					◆	◆		◆			◇				
	VBMT110308-GF	0.8	0.40-1.50	0.05-0.25			◆					◆	◆		◆			◇				

	VBMT160404-GF	0.4	0.40-1.50	0.05-0.25		◆	◆					◆	◆		◆			◆				
	VBMT160408-GF	0.8	0.80-1.50	0.05-0.25		◆	◆					◆	◆		◆			◆				

◇ : Stock ◇ : On Demand

Applicable Tools

				
SVJB R/L (93°)	SVHB R/L (107.5°)	SVVBN (72.5°)	SVUB R/L (93°)	SVQB R/L (107.5°)

Grade Selection » A 8

Insert Code System » A 15

General Turning

Positive Inserts

35°VB

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4

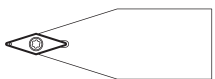
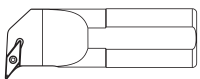
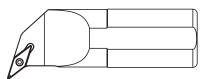
				Workpiece Material		CVD										PVD										Cermet				Cemented	
				P Steel	●●●●										●●●●●										●●						
				M Stainless	●										●●●●●																
				K Cast Iron	●										●										●●						
N Non-Ferrous																														●●	
S Superalloys																															
H Hard Meterials																										●					

ISO		r mm	a _p mm	f mm	P					M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20	
	VBMT110304-TM	0.4	0.20-1.50	0.05-0.25		◆	◆									◆	◆		◆			
	VBMT110308-TM	0.8	0.20-1.50	0.05-0.25		◆	◆										◆	◆		◆		

	VBMT160404-TM	0.4	0.20-2.50	0.05-0.25		◆	◆			◆					◆	◆			◆		
	VBMT160408-TM	0.8	0.40-2.50	0.05-0.25		◆	◆			◆						◆	◆		◆		
	VBMT160412-TM	1.2	0.80-2.50	0.05-0.25		◆	◆			◆							◆	◆		◆	

◆ : Stock ◇ : On Demand

Applicable Tools

				
SVJB R/L (93°)	SVHB R/L (107.5°)	SVVBN (72.5°)	SVUB R/L (93°)	SVQB R/L (107.5°)

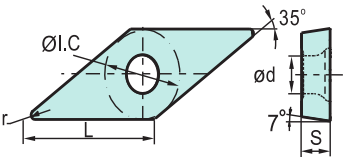
Grade Selection » A 8

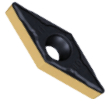
Insert Code System » A 15

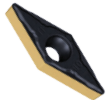
35°VC

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4

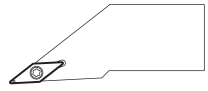
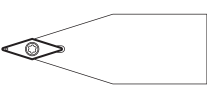
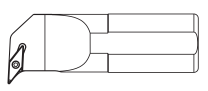
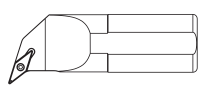
				Workpiece Material		Material Legend										Material Legend									
		P Steel	C1105 C1115 C1125 C1135		M	K	PMK	PMH	M				S	H	PK	N									
		M Stainless																							
		K Cast Iron																							
		N Non-Ferrous																							
		S Superalloys																							
		H Hard Metaterials																							

ISO		r mm	a _p mm	f mm	P		M	K	PMK	PMH	M				S	H	PK		N		
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	VCMT110304-TF	0.4	0.20-1.50	0.05-0.25		◆	◆														
	VCMT110308-TF	0.8	0.40-1.50	0.05-0.25		◆	◆														

	VCMT160404-TF	0.4	0.20-1.50	0.05-0.25		◆	◆													
	VCMT160408-TF	0.8	0.40-1.50	0.05-0.25		◆	◆													

 : Stock
  : On Demand

Applicable Tools

				
SVJC R/L (93°)	SVHC R/L (107.5°)	SVVCN (72.5°)	SVUC R/L (93°)	SVQC R/L (107.5°)

Grade Selection » A 8

Insert Code System » A 15

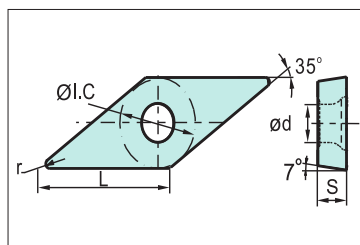
General Turning

Positive Inserts

35°VC ♦ ♦

-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4



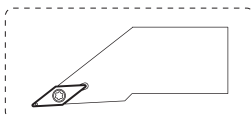
		CVD					PVD					Cermets		Cemented			
Workpiece Material	P Steel																
	M Stainless																
	K Cast Iron																
	N Non-Ferrous																
	S Superalloys																
	H Hard Metals																

ISO		r mm	a _p mm	f mm	P				M	K	PMK	PMH	M			S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115	P7025	P8325	P2125	P2225	P2824	P8105	P5510	NHC10	NHC20	NHK10	NHK20
	VCMT110304-JW	0.4	0.20-1.50	0.05-0.25						◇	◇	◇			◇						
	VCMT110308-JW	0.8	0.40-1.50	0.05-0.25						◇	◇	◇			◇						

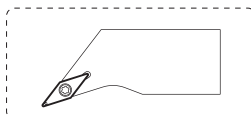
	VCMT160404-JW	0.4	0.40-1.50	0.05-0.25						◇	◇	◇			◇				
	VCMT160408-JW	0.8	0.80-2.00	0.05-0.25						◇	◇	◇			◇				

◆ : Stock ◇ : On Demand

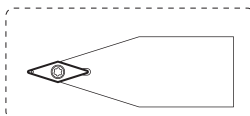
Applicable Tools



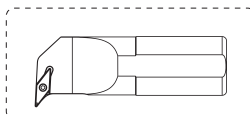
SVJC R/L (93°)



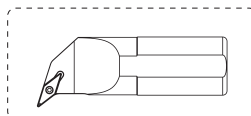
SVHC R/L (107.5°)



SVVCN (72.5°)



SVUC R/L (93°)



SVQC R/L (107.5°)

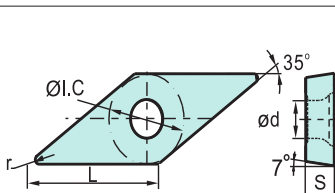
Grade Selection » A 8

Insert Code System » A 15

35°VC

-  : Continuous Cutting
 : Light Interrupted Cutting
 : Medium Interrupted Cutting
 : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16.5	9.52	4.76	4.4

				Workpiece Material		CVD										PVD										Cermet		Cemented							
P Steel		M Stainless		K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Metaterials																									
Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
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Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
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Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
Steel		Stainless		Cast Iron		Non-Ferrous		Superalloys		Hard Metaterials																									
Steel		Stainless		Cast Iron		Non																													

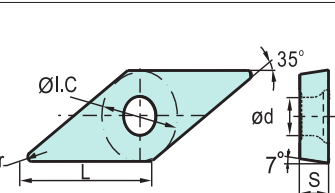
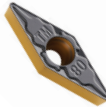
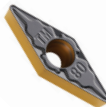
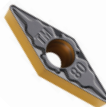
General Turning

Positive Inserts

35°VC ◇ ◇

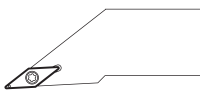
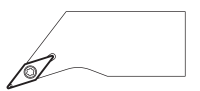
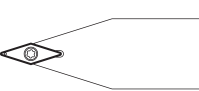
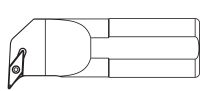
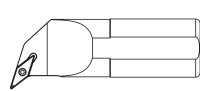
- : Continuous Cutting
- ◐ : Light Interrupted Cutting
- ◑ : Medium Interrupted Cutting
- ⊕ : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1103	11	6.35	3.18	2.8
1604	16	9.52	4.76	4.4

				Workpiece Material		CVD										PVD										Cermet		Cemented									
				P Steel		M Stainless		K Cast Iron		N Non-Ferrous		S Superalloys		H Hard Meterials																							
				ISO		r mm		a _p mm		f mm		P		M		K		PMK		PMH		M		S		H		PK		N							
				C1105		C1115		C1125		C1135		C2120		C3115		P7025		P8325		P2125		P2225		P2824		P8105		P5510		NHC10		NHC20		NHK10		NHK20	
				VCMT110304-TM		0.4		0.20-1.50		0.05-0.25																											
				VCMT110308-TM		0.8		0.20-1.50		0.05-0.25																											
				VCMT160404-TM		0.4		0.20-2.00		0.05-0.25																											
				VCMT160408-TM		0.8		0.40-2.00		0.05-0.25																											
				VCMT160412-TM		1.2		0.80-2.00		0.05-0.25																											

◆ : Stock ◇ : On Demand

Applicable Tools

				
SVJC R/L (93°)	SVHC R/L (107.5°)	SVVCN (72.5°)	SVUC R/L (93°)	SVQC R/L (107.5°)

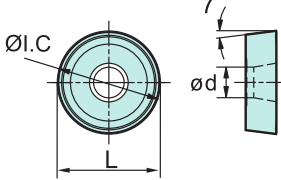
Grade Selection » A 8

Insert Code System » A 15

RC ♦ ♦

- : Continuous Cutting
 ● : Light Interrupted Cutting
 ● : Medium Interrupted Cutting
 ● : Heavy Interrupted Cutting

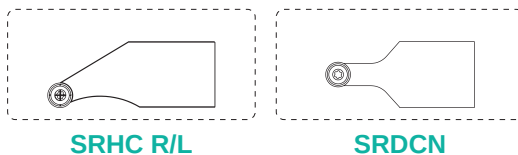
Size	Dimension (mm)			
	L	I.C	S	d
1003	10	10	3.18	3.6
1204	12	12	4.76	4.4
1606	16	16	6.35	5.5
2006	20	20	6.35	6.5
2509	25	25	7.94	7.2
3209	32	32	9.52	9.5

	Workpiece Material	CVD					PVD					Cermet	Cemented
		P Steel	●	●	●	●	●	●	●	●	●	●	●
		M Stainless				●	●	●	●	●	●		
		K Cast Iron				●	●					●	●
		N Non-Ferrous										●	●
		S Superalloys							●				
		H Hard Materials					●			●			

ISO		r mm	a _p mm	f mm	P					M	K	PMK	PMH	M					S	H	PK		N	
					C1105	C1115	C1125	C1135	C2120	C3115		P7025	P8325	P2125	P2225	P2824	P8105	P5510			NHC10	NHC20	NHK10	NHK20
	RCMX1003MO		0.50-5.00	0.10-0.40		♦	♦																	
	RCMX1204MO		1.00-6.00	0.10-0.50		♦	♦																	
	RCMX1606MO		1.00-7.00	0.10-0.80		♦	♦																	
	RCMX2006MO		1.00-9.00	0.20-1.00		♦	♦																	
	RCMX2509MO		2.00-10.0	0.30-1.20		♦	♦																	
	RCMX3209MO		2.00-13.0	0.30-1.40		♦	♦																	

♦ : Stock ♦ : On Demand

Applicable Tools



Grade Selection ▶ A 8

Insert Code System ▶ A 15

General Turning

Positive Inserts

RC ♦ ♦

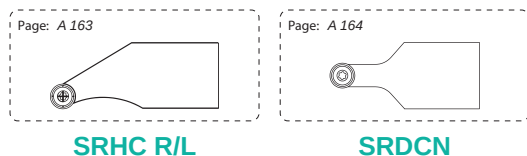
-  : Continuous Cutting
-  : Light Interrupted Cutting
-  : Medium Interrupted Cutting
-  : Heavy Interrupted Cutting

Size	Dimension (mm)			
	L	I.C	S	d
1606	16	16	6.35	5.5
2006	20	20	6.35	6.5
2507	25	25	7.94	7.2

[illegible]

◆ : Stock ◇ : On Demand

Applicable Tools



Machined workpiece materials						Inserts Grade														
ISO	Classification of materials			Hardness of Brinell (HB)	Tensile strength (N/mm ²)	C1105		C1115		C1125		C1135		P7025 - P8325						
						Feed Rate / (mm/r)														
						0.1	0.4	0.6	0.1	0.4	0.6	0.1	0.4	0.6	0.1	0.4	0.6	0.1	0.4	0.6
						Cutting Speed / (m/min)														
P	Non-alloyed steel	C≤0.25%	Annealing	125	428	420	360	270	400	320	240	380	260	210	250	170	40	250	170	40
		0.25<C≤0.55%	Annealing	190	639	370	270	210	350	260	200	280	200	150	200	135	10	200	135	10
		0.25<C≤0.55%	Quenching and tempering	210	708	280	220	70	270	210	160	200	60	135	50	125	90	50	125	90
		C>0.55%	Annealing	190	639	270	220	160	270	210	150	240	160	125	70	10	90	70	10	90
		C>0.55%	Quenching and tempering	300	1013	210	180	150	210	170	150	160	120	110	25	75	65	25	75	65
		Short chip steel	Annealing	220	745	400	310	250	380	280	210	360	220	75	220	45	15	220	45	15
	Low-alloyed steel	Annealing		175	591	350	260	220	320	220	80	240	75	35	200	65	50	200	65	50
		Quenching and tempering		300	1013	220	70	50	110	60	40	40		85	35	90	70	35	90	70
		Quenching and tempering		380	1282	60	20		200	50	20		70	55	90	65	45	90	65	45
		Quenching and tempering		430	430	90	70		20											
	High alloy steel and high alloy tool steel	Annealing		200	675	330	230	50	300	220	50	210	45	85	80	50	85	180	50	85
		Quenching and tempering		300	1013	230	140	10	220	120	10	30	85	65	10	85	65	10	85	65
		Quenching and tempering		400	1361	80	70		130	20										

Machined workpiece materials					Inserts Grade														
ISO	Classification of materials		Hardness of Brinell (HB)	Tensile strength (N/mm²)	P2125		P2225			P2824			C2120			C3115			
					Feed Rate / (mm/r)														
					0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.4	0.6	0.1	0.3	0.5	0.1	0.3	0.5
					Cutting Speed / (m/min)														
M	Stainless steel	Ferrite/martensite, annealing	200	675	120	80	50	180	120	80	240	190	50	240	190	50			
		Martensite, quenching and tempering	330	1114	140	100	70	160	100	70	150	85		150	85				
	Stainless steel	Austenite, quenching	200	675	160	120	100	180	160	120	240	190	50	240	190	50			
		Austenite, precipitation hardening stainless steel (PH stainless steel)	300	1013	120	100	70	140	120	80	150	85		150	85				
		Austenite- ferrite, duplex stainless steel	230	778	140	110	80	160	120	90	170	145	100	170	145	100			
K	Malleable cast iron	Ferrite	200	400													300		
		Pearlite	260	700													270		
	Grey cast iron	Low tensile strength	180	200													450	170	190
		High tensile strength/austenite	245	350													245	90	125
	Ductile iron	Ferrite	155	400													260	145	145
		Pearlite	265	700													190		125
	Compacted graphite iron GGV (CGI)		230	400															

General Turning

General Turning Cutting Data

Machined workpiece materials						Inserts Grade															
ISO	Classification of materials			Hardness of Brinell (HB)	Tensile strength (N/mm ²)	NHK10		NHK20			P2225			P8105			C2120				
						Feed Rate / (mm/r)															
						0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.4	0.6	0.1	0.3	0.5	
						Cutting Speed / (m/min)															
N	Wrought aluminum alloy	Non-aging		30	—																
		Ageable and aged		100	340	750	600	300	700	550	250										
	Foundry aluminum alloy	≤ 12% silicon, non-aging		75	260	800	450	300	750	400	250										
		≤ 12% silicon, ageable and aged		90	310	500	300	200	450	250	150										
		> 12% silicon, non-aging		130	450																
	Magnesium alloy			70	250																
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340																
		Brass, bronze, red brass		90	310	600	400	270													
		Copper alloy, short chip		110	380	400	300	250													
		Ampco alloy of high strength		300	1010	280	200	130													
S	Iron-based alloy	Iron-based	Annealing	200	680							90	60		100	75		90	65		
			Aged	280	940							70	50		90	65		80	55		
		Nickel-based or cobalt-based	Annealing	250	840								70	50		90	65		80	55	
			Aged	350	1180								60	40		75	50		70	45	
			Annealing	320	1080								50	30		65	35		60	30	
	Cobalt-based alloy	Pure titanium		200	680										210	190	150	200	180	140	
		α and β phase alloys, aged		375	1260								70	45		100	60	50	90	55	45
		β phase alloy		410	1400								40	35		65	40	35	55	35	30
	Nickel-based alloy	1177		300	1010																
	Titanium alloy	1262		300	1010								60								

Cutting Parameters for S-Type Internal Turning

Workpiece material	Hardness	Machining form	L/D≤3		L/D=4		L/D=5		L/D=6	
			Feed (mm/rev)	Cutting depth (mm)	Feed (mm/rev)	Cutting depth (mm)	Feed (mm/rev)	Cutting depth (mm)	Feed (mm/rev)	Cutting depth (mm)
P	Carbon steel, alloy steel 45#、42CrMo	Finishing	0.05-0.1-0.15	<0.2	0.05-0.1-0.15	<0.2				
		semi-finishing	0.15-0.25-0.35	<3.0	0.1-0.15-0.2	<1.5				
M	Stainless steel 1Cr18Ni9Ti 0Cr18Ni9	Finishing	0.05-0.1-0.15	<0.2	0.05-0.1-0.15	<0.2				
		semi-finishing	0.15-0.2-0.25	<2.0	0.1-0.15-0.2	<1.0				
N	Aluminum alloy	Finishing	0.05-0.1-0.15	<0.2	0.05-0.1-0.15	<0.2	0.05-0.1-0.15	-0.15	0.05-0.1-0.15	<0.1
		semi-finishing	0.05-0.1-0.15	<2.0	0.05-0.1-0.15	<1.5	0.05-0.1-0.15	-1.0	0.05-0.1-0.15	<1.0

General Turning

General Turning Cutting Data PCD&CBN

ISO	Workpiece Material	Cutting Process	Inserts Grade		Cutting Parameters	
			1.Choice	2.Choice	Vc(m/min)	f(mm/rev)
P	Low-carbon Steels	Finishing	C1105	C1115	200 - 350	0.10 - 0.40
		Medium	C1125	C1135	140 - 200	0.20 - 0.50
		Roughing	P7025	P8325	80 - 180	0.30 - 0.60
	High-carbon Steels Alloy Steels	Finishing	C1105	C1115	150 - 300	0.10 - 0.40
		Medium	C1125	C1135	100 - 180	0.20 - 0.50
		Roughing	P7025	P8325	80 - 180	0.30 - 0.60
	Tool Steels	Finishing	C1105	C1115	100 - 200	0.10 - 0.40
		Medium	C1125	C1135	80 - 160	0.20 - 0.50
		Roughing	P7025	P8325	60 - 140	0.30 - 0.60
M	Stainless Steels	Finishing	P2225	P2125	100 - 180	0.05 - 0.25
		Medium	P2824	P2225	80 - 160	0.10 - 0.40
		Roughing	P8325	P7025	50 - 120	0.20 - 0.60
K	Cast Irons	Continuous	C3115	C1115	200 - 500	0.10 - 0.40
		Interrupted	C3115	P8325	150 - 350	0.10 - 0.50
		Heavy Interrupted	C3140	P7025	100 - 250	0.20 - 0.60
N	Aluminium Alloys 75-130 HB	Continuous	NHK10	NHK20	200 - 500	0.10 - 0.50
			PCD685	PCD684	500 - 2500	0.05 - 0.15
S	High-Temperature Super Alloys 350-400 HB	Continuous	P8105	P2225	40 - 80	0.05 - 0.20
H	Hardened Steel 40-50 HRC	Continuous	P5510	P5525	60 - 100	0.05 - 0.20
	Hardened Steel 55-68 HRC	Continuous	CBN955	CBN954	70 - 200	0.05 - 0.30

General Turning

Internal Turning Cutting Data

ISO	Raw Material	Hardness	Processing	Recommended Grade	Corner (RE)	Lower Limit - Recommended Value - Upper Limit		
						Speed Vc (m/min)	Cutting Depth Ap (mm)	Feed f (mm/rev)
P	Low carbon steel Low carbon alloy Steel	≤ 300HB	Precision finishing	C1115	0.4 0.8	250-300-350 120-170-220	0.05-0.3-0.5 0.05-0.3-0.5	0.03- 0.1- 0.15 0.03- 0.1- 0.15
			Finishing	C1115	0.4 0.8	200-250-300 150-200-250	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Finishing - semi-finishing	C1125	0.4 0.8	150-200-250 100-150-200	0.5-1.0-2.0 0.5-1.0-1.5	0.1- 0.15-0.25 0.1- 0.15- 0.2
			Semi-finishing	C1125	0.4 0.8	100-150-200 80- 120- 150	1.0-1.5-2.5 1.0-1.5-2.0	0.1- 0.15- 0.3 0.1- 0.15- 0.2
	Medium carbon steel Medium carbon alloy	≤ 300HB	Precision finishing	C1115	0.4 0.8	150-200-250 120-140-170	0.05-0.3-0.5 0.05-0.3-0.5	0.03- 0.1- 0.15 0.03- 0.1- 0.15
			Finishing	C1115	0.4 0.8	150-200-250 120-180-200	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Finishing - semi-finishing	C1125	0.4 0.8	120-180-220 100-150-200	0.5-1.0-2.0 0.5-1.0-1.5	0.1- 0.15-0.25 0.1- 0.15- 0.2
			Semi-finishing	C1125	0.4 0.8	100-150-200 80- 120- 150	1.0-1.5-2.5 1.0-1.5-2.0	0.1- 0.15- 0.3 0.1- 0.15- 0.2
	High carbon Alloy steel	≤ 280HB	Precision finishing	C1115	0.4 0.8	120-150-180 110-130-160	0.05-0.3-0.5 0.05-0.3-0.5	0.03- 0.1- 0.15 0.03- 0.1- 0.15
			Finishing	C1115	0.4 0.8	120-150-180 100-120-150	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Finishing - semi-finishing	C1125	0.4 0.8	120-150-180 100-120-150	0.5-1.0-2.0 0.5-1.0-1.5	0.1- 0.15-0.25 0.1- 0.15- 0.2
			Semi-finishing	C1125	0.4 0.8	100-120-150 80- 100- 120	1.0-1.5-2.5 1.0-1.5-2.0	0.1- 0.15- 0.3 0.1- 0.15- 0.2
M	Stainless steel (austenite)	≤ 220HB	Finishing	P2225	0.4 0.8	120-150-180 100-120-150	0.2-0.5-0.8 0.2-0.5-0.8	0.05-0.08- 0.1 0.05-0.08- 0.1
			Semi-finishing	P2225	0.4 0.8	120-150-180 100-120-150	0.5-1.0-1.5 0.5-1.0-1.5	0.05- 0.1- 0.2 0.05- 0.1- 0.2
	Stainless steel (precipitation and hardening)	≤ 300HB	Finishing	P2225	0.4 0.8	80- 100- 120 60- 80- 100	0.2-0.7-1.0 0.2-0.7-1.0	0.05- 0.1- 0.15 0.05- 0.1- 0.15
			Semi-finishing	P2225	0.4 0.8	80- 100- 120 60- 80- 100	0.5-1.0-1.5 0.5-1.0-1.5	0.05- 0.1- 0.2 0.05- 0.1- 0.2
K	Grey cast iron	≤ 250HB	High speed finishing	C3115	0.4 0.8	400-500-600 200-250-350	0.05-0.2-0.5 0.2-0.5-1.0	0.05- 0.1- 0.15 0.05- 0.1- 0.15
			Finishing (with high luster)	C3115	0.4 0.8	200-250-300 120-180-230	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Finishing	C3115	0.4 0.8	150-180-200 100-150-180	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Semi-finishing	C3115	0.4 0.8	100-150-200 80- 120- 150	0.5-1.0-2.0 0.5-1.0-2.0	0.1- 0.15- 0.2 0.05- 0.1- 0.15
	Ductile iron	≤ 270HB	High speed finishing	C3115	0.4 0.8	200-300-400 150-200-250	0.05-0.2-0.5 0.2-0.5-1.0	0.03-0.05- 0.1 0.05- 0.1- 0.15
			Finishing (with high luster)	C3115	0.4 0.8	150-200-250 120-150-200	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Finishing	C3115	0.4 0.8	120-150-180 100-120-150	0.2-0.5-1.0 0.2-0.5-1.0	0.05- 0.1- 0.2 0.05- 0.1- 0.2
			Semi-finishing	C3115	0.4 0.8	100-120-150 80- 100- 120	0.5-1.0-2.0 0.5-1.0-2.0	0.05- 0.1- 0.2 0.05- 0.1- 0.15
N	Non-ferrous metal Copper - copper alloy Aluminum/ aluminum alloy (Si < 10%), etc.	≤ 100HB	High speed finishing (Iridescence surface luster)	NHK10	0.4 0.8	200-400-1000	0.05-0.1-0.3	0.05-0.1-0.15
			Finishing	NHK20	0.4 0.8	100-200-400 100-200-400	0.05-0.5-1.0 0.05-0.5-1.0	0.03- 0.1- 0.2 0.03- 0.1- 0.2
S	Titanium alloy	≤ 400HB	Precision finishing (Iridescence surface luster)	P8105	0.4 0.8	100-120-150 70- 100- 120	0.05-0.1-0.3 0.05-0.1-0.3	0.03-0.07- 0.1 0.03-0.07- 0.1
			Finishing	P8105	0.4 0.8	30- 50- 70 30- 50- 70	0.05-0.5-1.0 0.05-0.5-1.0	0.03- 0.1- 0.2 0.03- 0.1- 0.2
	Heat-resistant alloy	≤ 350HB	Finishing	P8105	0.4 0.8	10- 30- 50 10- 30- 50	0.05-0.5-1.0 0.05-0.5-1.0	0.03- 0.1- 0.2 0.03- 0.1- 0.2
			Finishing	P8105	0.4 0.8	40- 60- 80 40- 60- 80	0.1-0.3-0.5 0.1-0.3-0.5	0.03-0.05- 0.1 0.03-0.05- 0.1
H	Quenched steel High hardness material	40-50 HRC	Finishing	P5510	0.4 0.8	60- 80- 100 30- 50- 70	0.05-0.3-0.5 0.05-0.3-0.5	0.05-0.08- 0.1 0.05-0.08- 0.1
		45-68 HRC	Finishing	P5510	0.4 0.8	100-140-180 90- 120- 160	0.1-0.2-0.3 0.1-0.2-0.3	0.02-0.07- 0.1 0.02-0.07- 0.1
			Semi-finishing	P5510	0.4 0.8	60-80-100	0.3-0.7-1.0	0.03-0.1-0.15

General Turning

Comparison Table of Chipbreaker

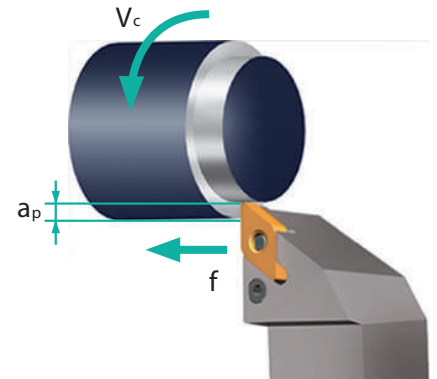
ISO	Application	CARNATIT	SANDVIK	KENAMETAL	ISCAR	MITSUBISHI	HITACHI	TUNGALOY	KYOCERA	SUMITOMO	TAGUTEC	ZCC.CT
P	Finishing (Negative)	GF	LC XF MF	PMFN CT	---- NF	SA SY SH	BE CE B BH	NM TS TSF	PP XQ CQ HQ	LU FE SU	FG FC	DF PF SF
	Medium Semi-finish (Negative)	GQ GT GM TM AM	XM QM PMC PM SM KM HM	P MG MN MP1	GN RF LF	MA MV MH MP	AH AE AY	TM TQ DM AM	HS PS PQ GS PT PG	GU(UG) GE UX	ML MP MC PC MT	DM PM
	Tough machining (Negative)	GR	PR XMR KR	RP RN	M3P NR ----	RP GH MAS MT	RE AR ----	TH S CH	HT GT PH ----	MU ME MX	RT ----	DR LR
	Heavy Machining (Negative)	AR	QR HR SR ---- MR	RM MR RH ---- ----	NM TNM ---- R3P	HZ HX HL HH HXD HR HV HCS	TE UE ---- H HX HE	THS TRS 65 ---- TUS	PX ---- ---- ---- ----	HG HP HU HW HF	RX RH HT HD HY HZ	HDR HPR
	Finishing (Positive)	TF GF	MM XM VM	MF	SM 14	LM SV	JQ	PS	MQ	GU	FC PC	HF
	Semi-finish (Positive)	TM MM JW	UM PM MX PR	MF MP	----	MV MP	JE	PM	HQ XQ GK	MU	MT PC	HM
M	Finishing (Negative)	BF	MF	FP FS LF	----	LM SH	SE MP	SS	MQ GU	SU EF	EA SF	EF
	Semi-finish (Negative)	BM DM MA	MM MMC SMR	MP	M3M PP	MM	DE	SM	----	GU	ET	EM
	Tough machining (Negative)	BR DM	---- MR MRR	UP ----	---- MR	ES 1M 2M HL RM GH HM	---- ----	S SH	---- TK	HM EM MU	VF SU	ER
	Finishing (Positive)	TF	MM XM VM	FP FF	SM 14	LM FM	MP	SS	CF MQ CK	FC	FC PC	FF
	Semi-finish (Positive)	TM MM JW GF	MM	MP	----	MW	----	PM	HQ GK	MU	----	EM
K	Semi-finish (Negative)	All Round	KF	UN	GN	LK MA MK	V VA	CM CF	C	UZ	MT	All round
	Tough machining (Negative)	Flat	KM KR KRR	----	----	GK RK GH	Y RE	Ch 33	ZS GC	GZ(UX)	RT	----
N	Non-ferrous metal machining	AK	----	MS	----	----		P	AH	AX	----	no
S	Finishing (Negative)	----	SF SGF	----	----	LS FJ	----	HRF	----	EF	----	NF NGF
	Semi-finish (Negative)	SM DM TM	SM SMC	----	----	MS MJ	VI	HMM SA HRM	----	EG、EX	----	NM
H	Finishing	----	----	----	----	----		HP*	----	FV*	----	no
	Semi-finish	DM	----	----	----	----		----	----	GH	----	no

General Turning

Technical Information Turning

Three Effects of Cutting Condition for Turning

Short machining time, long tool life and high machining accuracy is expected from modern tools. Based on the machine performance, material shape and hardness of the components the right choice of tool and cutting conditions are the premise for a successful machining process. Cutting speed, feed rate and depth of cut are what we call the "Three effects of cutting".



1-) Cutting Speed (V_c)

Cutting speed is defined as the rate (or speed) that the material moves past the cutting edge of the tool. The unit for V_c is meter per minute [m/min].

Cutting speed influence: Cutting speed is one of the three important effects of turning and has influence on tool life. Increasing the cutting speed also increases the cutting temperature and that decreases the tool life. Depending on the hardness and type of material the cutting speed varies. Therefore to choose a suitable grade for the cutting speed is necessary. In general situation, when cutting speed is increased by 20 % the tool life will be reduced $\frac{1}{2}$; when the cutting speed is increased by 50 % the tool life decreases $\frac{1}{5}$. Lower cutting speed results in vibration which will shorten tool life.

2-) Feed Rate (f)

In turning application feed rate is the distance the tool holder moves per work piece revolution. That has influence to the surface quality. The unit for feed rate is millimetre per revolution [mm/rev].

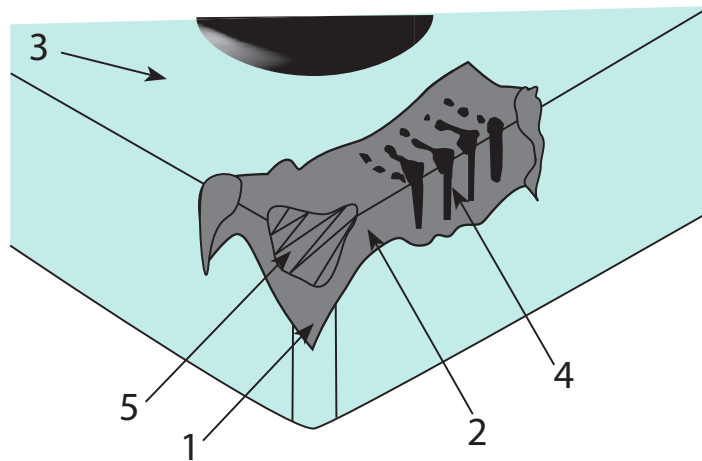
Feed rate influence: Decreasing the feed rate will increase flank wear and tool life will be shortened. Increasing the feed rate increases the cutting temperature and also flank wear. On the other hand the efficiency will be improved.

3-) Depth of Cut (a_p)

The depth of cut refers to the half different value between the diameter of the unmachined and machined work piece. The unit is millimetre [mm].

Depth of cut influence: Changing depth of cut has no big influence to the tool life. Machining hardened layer with small depth of cut results in friction and short tool life. Machining uncut surface or cast iron material, choose maximum depth of cut according to the machine power so that the cutting edge and corner radius is out of the hardened layer. That helps to prevent chipping and abnormal wear.

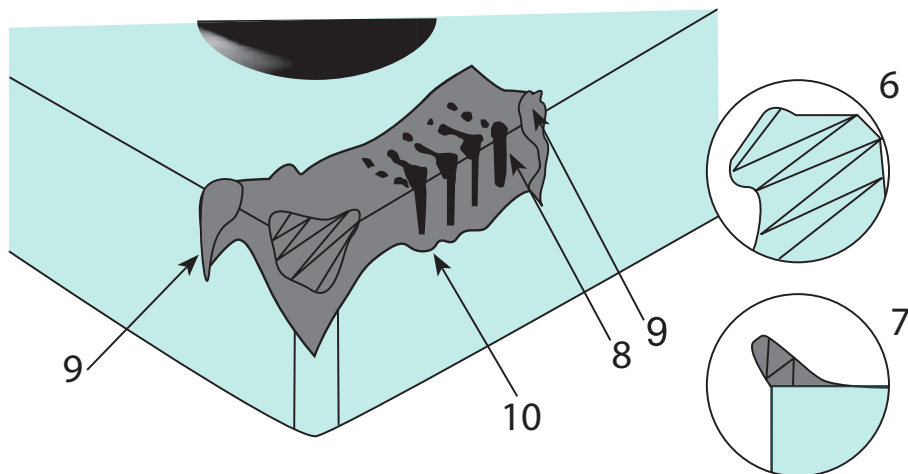
Fig.	Type of Wear	Type of Wear	Reason	Countermeasure
1 - 2	Flank wear	◆ Bad surface quality and dimensional stability ◆ Increase of cutting force	◆ Grade not wear-resistant enough ◆ Cutting speed too high ◆ Clearance angle too small ◆ Feed rate too low	◆ Grade with higher wear-resistance ◆ Reduce cutting speed ◆ Increase clearance angle ◆ Reduce feed rate
3	Crater wear	◆ Bad surface quality and chip control	◆ Grade not wear-resistant enough ◆ Cutting speed too high ◆ Feed rate too low	◆ Grade with higher wear-resistance ◆ Reduce cutting speed ◆ Reduce feed rate
4	Chipping	◆ Unstable tool life ◆ Sudden breakage of cutting edge	◆ Grade too hard ◆ Feed rate too high ◆ Cutting edge not stable enough ◆ Stability of the holder or tension insufficient	◆ Grade with higher toughness ◆ Reduce feed rate ◆ Change honing of cutting edge ◆ Use a more stable tool holder
5	Breakage	◆ Increase of cutting force ◆ Bad surface quality and dimensional stability	◆ Grade too hard ◆ Feed rate too high ◆ Cutting edge not stable enough ◆ Stability of the holder or tension insufficient	◆ Grade with higher toughness ◆ Reduce feed rate ◆ Change honing of cutting edge ◆ Use a more stable tool holder



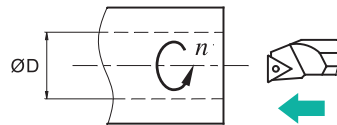
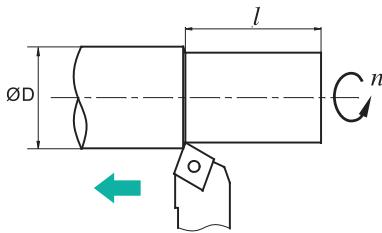
General Turning

Trouble Shooting Turning

Fig.	Type of Wear	Type of Wear	Reason	Countermeasure
6	Plastic deformation	◆ Bad dimensional stability ◆ Damage to cutting edge	◆ Grade not wear-resistant enough ◆ Cutting speed too high ◆ Cutting depth and/or feed rate too high ◆ Temperature on the cutting edge too high	◆ Grade with higher toughness ◆ Reduce cutting speed ◆ Reduce cutting depth and feed rate ◆ Grade with higher heat-resistance
7	Welding	◆ Increase of cutting force ◆ Bad surface quality	◆ Grade not wear-resistant enough ◆ Cutting speed too high ◆ Feed rate too low	◆ Increase cutting speed ◆ Increase rake angle ◆ Use a more suitable grade
8	Thermal cracks	◆ Breakage due to thermal interaction, often caused when cutting is interrupted (milling)	◆ Temperature fluctuation when machining ◆ Grade too hard	◆ Dry machining ◆ Grade with higher toughness
9	Notch wear	◆ Burr formation ◆ Increase of cutting force	◆ Damage through chips (jagged edges) ◆ Feed rate and cutting speed too high	◆ Grade with higher wear-resistance ◆ Increase rake angle to get a sharper cutting edge ◆ Reduce cutting speed
10	Flaking (coating)	◆ Often appears when machining hardened materials or caused by vibration	◆ Cutting edge adhesion and chipping ◆ Bad chip removal	◆ Increase rake angle to get a sharper cutting edge ◆ Chip breaker with bigger chip space



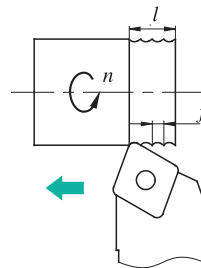
$$\text{Cutting Speed } V_c = \frac{\pi \times D \times n}{1000} \text{ [m/min]}$$



V_c : Cutting speed [m/min]
 n : Revolution [1/min]
 f : Feed rate [mm]

g n i n i h c a m l a n r e t x g n i n i h c a m l a n r e t n l

$$\text{Feed Rate } f = \frac{l}{n} \text{ [mm/rev]}$$

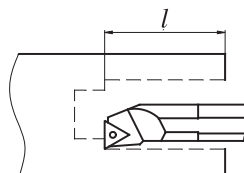
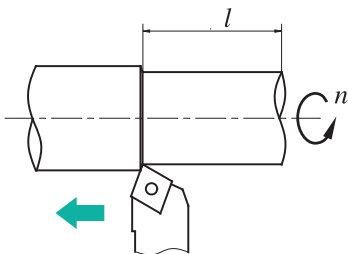


f : Feed rate [mm]
 l : Cutting length [mm/min]
 n : Revolution [1/min]

Example: $n = 600$ 1/min, $l = 120$ mm/min
 Result: [insert values in formula f]

$$f = \frac{l}{n} = \frac{120}{600} = 0,2 \text{ mm}$$

$$\text{Cutting Time } T_c = \frac{l}{f \times n} \text{ [min]}$$



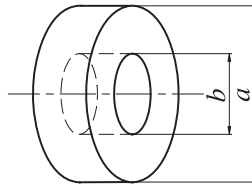
T_c : Cutting time [min]
 l : Cutting length [mm/min]
 f : Feed rate [mm]
 n : Revolution [1/min]

g n i n i h c a m l a n r e t x g n i n i h c a m l a n r e t n l

General Turning

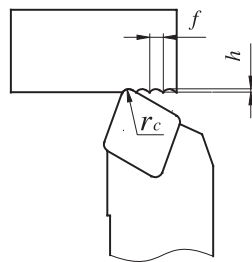
Technical Information Turning Formulas

Cutting Time $T_c = \frac{\pi \times (a^2 - b^2)}{4000 \times V_c \times f}$ [min]



T_c : Cutting time [min]
 V_c : Cutting speed [m/min]
 f : Feed rate [mm]

Theoretical Surface Roughness $R = \frac{f^2}{8r_c} \times 1000$ [μm]



R : Surface roughness [μm]
 f : Feed rate [mm]
 r_c : Radius of insert [mm]

Example: $f = 0,2 \text{ mm}$,
 $r_c = 0,4 \text{ mm}$



METALWORKING TOOL INDUSTRY

