YU-IT24
AMERICA
2024

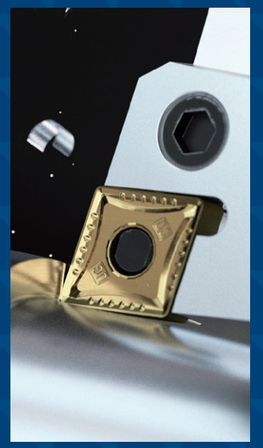
Registered
ISO 9001:2015 / ISO 14001:2015

CUTTING TOOLS

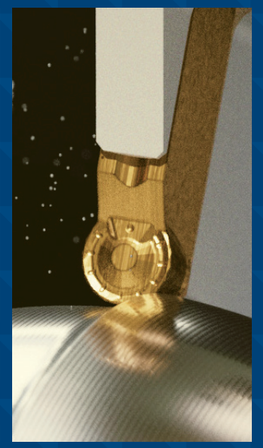
INDEXABLE INSERTS

YG-1 CO., LTD.

INDEXABLE INSERTS



TURNING



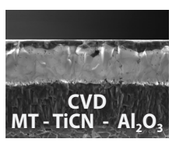
PARTING
GROOVING

MILLING

DRILLING

YG3115 NEW

First choice grade for high cutting speed in Steels

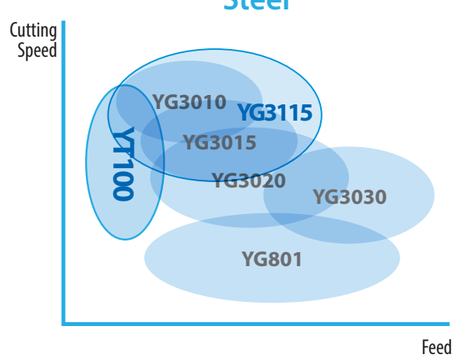


YG3115

P10 - P25

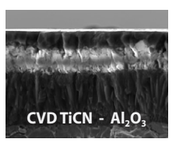
First choice grade for high cutting speed in Steels

- Suitable for mass production due to stable and predictable tool life
- Minimizing built up edge due to new post surface treatment in mild steels, low carbon steel and low carbon alloy steel.
- Best choice for both continuous as well as interrupted cuts



YG2025 NEW

High Cutting Speed for Stainless steels

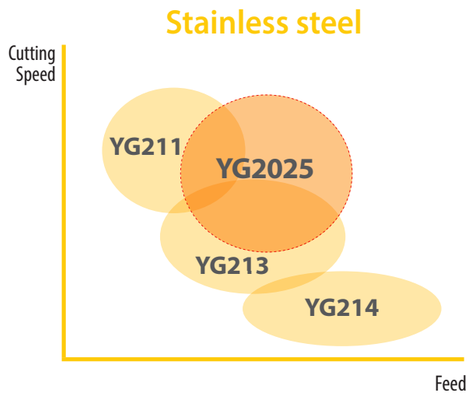


YG2025

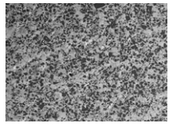
M15 - M35

CVD grade for High Cutting Speed for Stainless steels

- Utilizing a new carbide substrate and new coating
- Excellent combination of wear resistance and chipping resistance
- Minimized built up edge due to post surface treatment



Grades



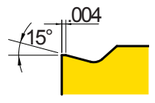
<Micro structure>

YT100 P10 - P20 M10 - M20 K10 - K20

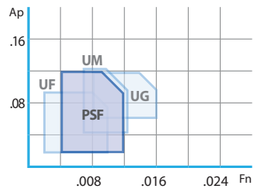
- Enhanced wear resistance & chipping resistance
- Excellent fracture resistance
- Superior surface finish with special edge preparation

Chipbreakers

PSF

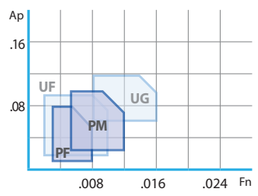


- For negative chip breaker insert
- 3 dimensional chip breakers give low cutting force
- For semi - finishing to semi - medium

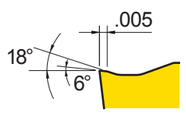


PF

- For positive chip breaker insert
- Excellent chip breaking at small depth of cut and low feed rate
- Good for low carbon contents steel in Finishing

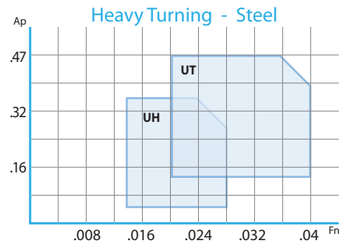


PM

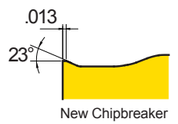


- For positive chip breaker insert
- High positive rake angle
- Good for low carbon contents steel
- For medium

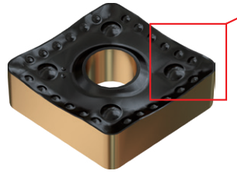
Chipbreakers

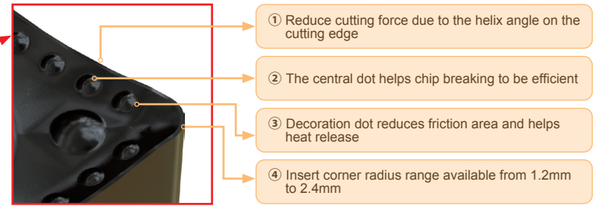


Features

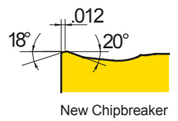


New Chipbreaker
UH
Low cutting force

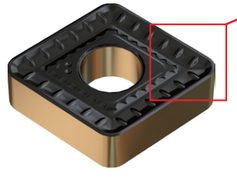


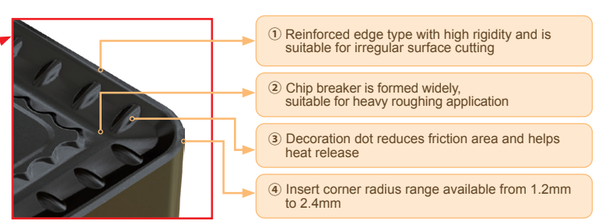


① Reduce cutting force due to the helix angle on the cutting edge
② The central dot helps chip breaking to be efficient
③ Decoration dot reduces friction area and helps heat release
④ Insert corner radius range available from 1.2mm to 2.4mm

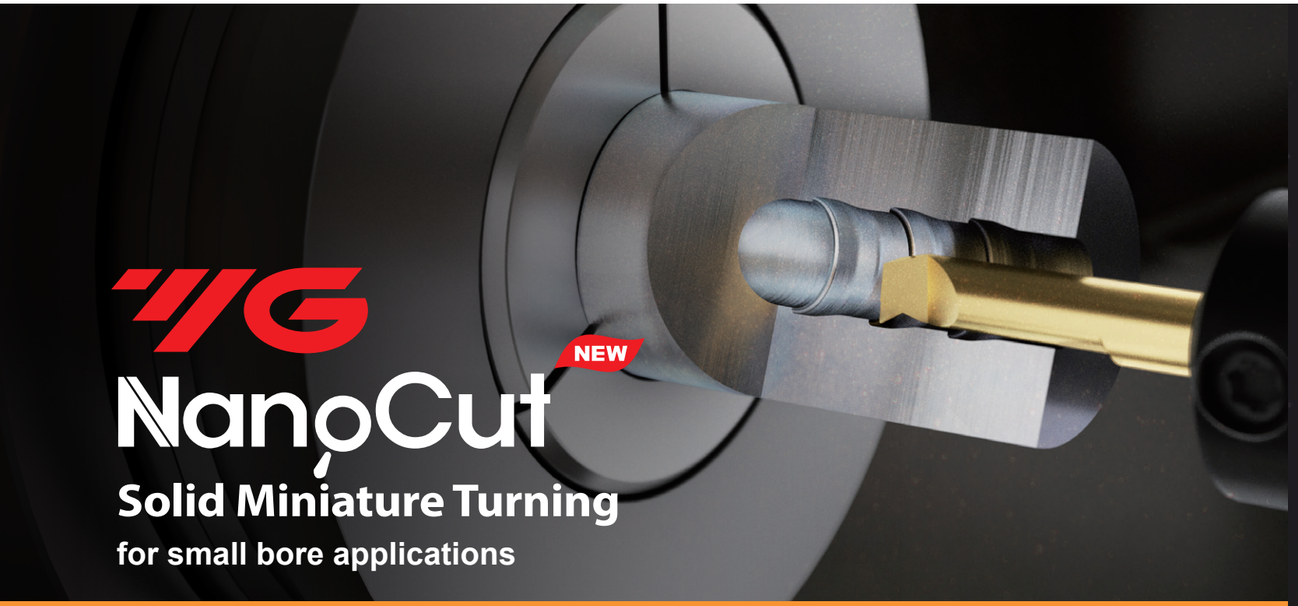


New Chipbreaker
UT
Heavy roughing





① Reinforced edge type with high rigidity and is suitable for irregular surface cutting
② Chip breaker is formed widely, suitable for heavy roughing application
③ Decoration dot reduces friction area and helps heat release
④ Insert corner radius range available from 1.2mm to 2.4mm



Overview

At present, as demand for small parts (camera lens, mobile phone parts) and medical instruments (implants) increases, demand for small - diameter products capable of high - precision processing is increasing.

Application

- Turning of Small Bore Components
- Internal Turning(Boring), Grooving and Threading

Features

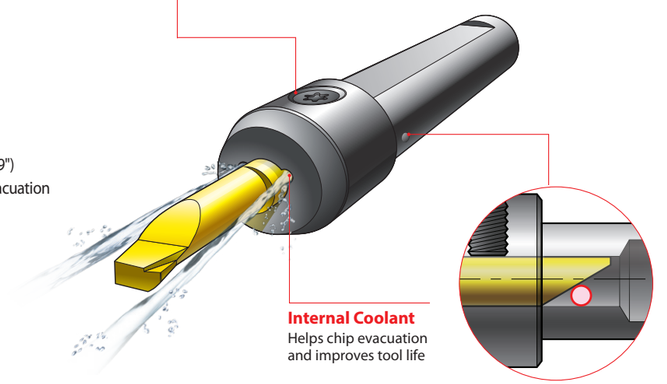
- Minimum Diameter(Boring & Profiling series) : Ø 1 mm (.039")
- Internal Coolant for Longer Tool life and Enhanced Chip Evacuation
- Secure Connection Design: Pin + Slant Positioning
- 9 Geometries for Various Applications

Benefits

- Reduced Machine Down Time
- Lower Machining Cost

Advantages of Nanocut

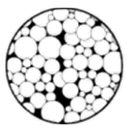
Easy Clamping
Secure and Simple system for fast change and fast locking



Internal Coolant
Helps chip evacuation and improves tool life

Secure Slant Connection
Ensures High repeatability for height and axial position

YG812 - Micro Grain Carbide Grade

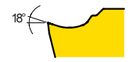
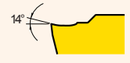


P10 - P20 | M20 - M30
K20 - K30 | S10 - S25

Submicron Grade Carbide Substrate Material for high toughness and wear resistance realizes high precision machining

INDEXABLE INSERTS
Turning
New Product

TURN - GROOVE Chip breakers

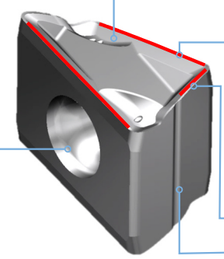
Turning & Grooving	GL		 18°	• For External, Internal turning and grooving • Face grooving and Face turning • For low feed rate
	GM		 14°	• For External, Internal turning and grooving • First choice face grooving and Face turning • For medium feed rate
	RG		 15°	• For External, Internal turning and grooving • Full radius Insert for profiling

TM4

YG MILL LNKU NEW

4 cutting edges High Productivity Tangential Insert

Key Technology



① **High positive rake face**
- Optimal chip curl & minimized burrs

② **High helix cutting edge**
- Low cutting force and Smooth cutting

Curved cutting edge
- Minimized mismatch

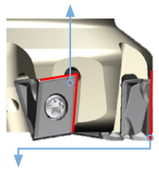
Wide wiper flat cutting edge
- Larger depth of cut

③ **Wide wiper flat cutting edge**
- Excellent surface qualit

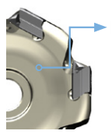
④ **Tangential clamping system**
- Rigid clamping and stable machining

④ **Thicker insert**
- Itra rigidity

Higher clamping stability
with wedge shaped pocket



True 90° shoulder milling



Larger Core Diameter
- Increased rigidity

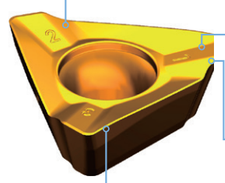
SM3

YG MILL TPKT NEW

True 90 degree Shoulder Milling

- 3 Cutting Edges for Shoulder Milling
- High Positive Helical Cutting edge
- Higher Cost Efficiency than 2 Cutting edges
- Wide selection and Optimal Machining with Various Cutters and Inserts

Features



① **High helix cutting edge**
- Smooth cutting and low cutting force

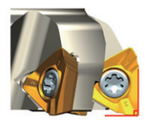
② **High positive rake angle chip breaker**
- Optimized chip curl and minimized burr

③ **Wide wiper edge**
- Excellent surface finish

④ **Curved cutting edge**
- Minimized mismatch

Applications

Key Technology



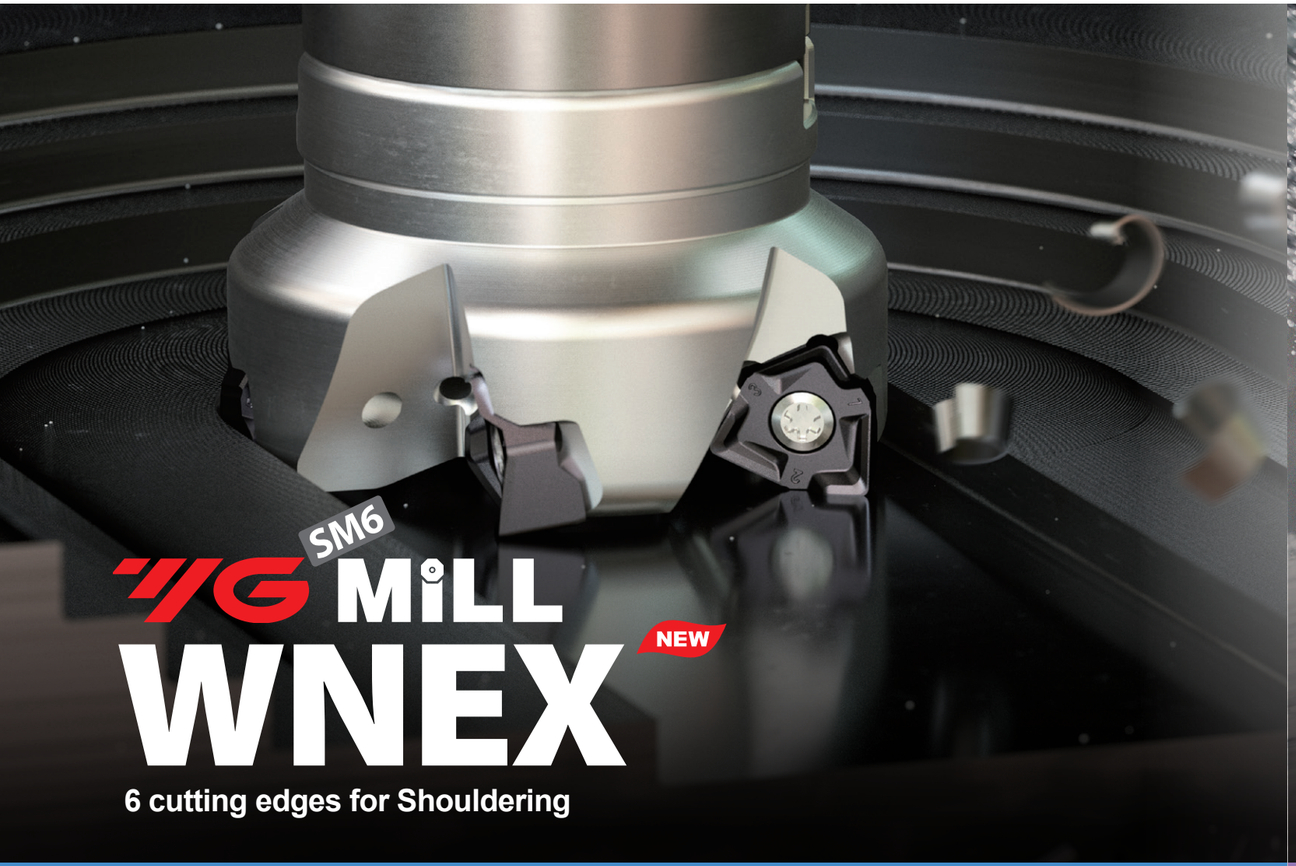
True 90° shoulder milling

Larger core size
- Higher rigidity

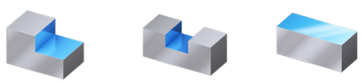
Optimal insert placement
- More inserts for high productivity

Milling

New Product



Applications

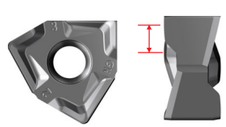


Shouldering | Slotting | Face Milling

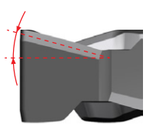
Features

- 6 cutting edges for Shouldering - High Cost - Efficiency
- High Positive Helical Cutting edge
- High Chipping Resistance with Reinforced cutting edge
- Ground Insert – High Precision Tolerance and Excellent Surface finish
- Diameter range : Ø32~ Ø200 (Ø1.5"~ Ø6")
- Ap (max) : 7mm (0.27")

Key Technology



Wider wiper edge length



High Helix cutting edge

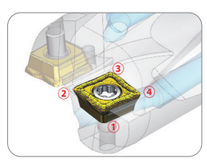
Unique Chip groove

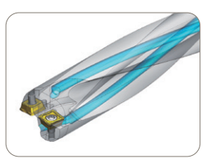
Drilling

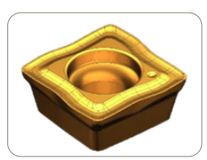
New Product

Features

- Economic square type 4 cutting edge insert
- One kind of insert in outer and inner pocket
- Twisted coolant channel and enlarged chip gullet for better chip evacuation
- Highly durable drill body due to high hardness and optimized material
- New post surface Treatment flute enables to improved chip evacuation in deeper machining

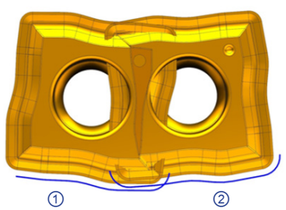






Key Technology

- Unique 1 chip curl per each flute
- True 4 cutting edges are available



Global Cutting Tool Leader **YG-1**

INDEXABLE INSERT

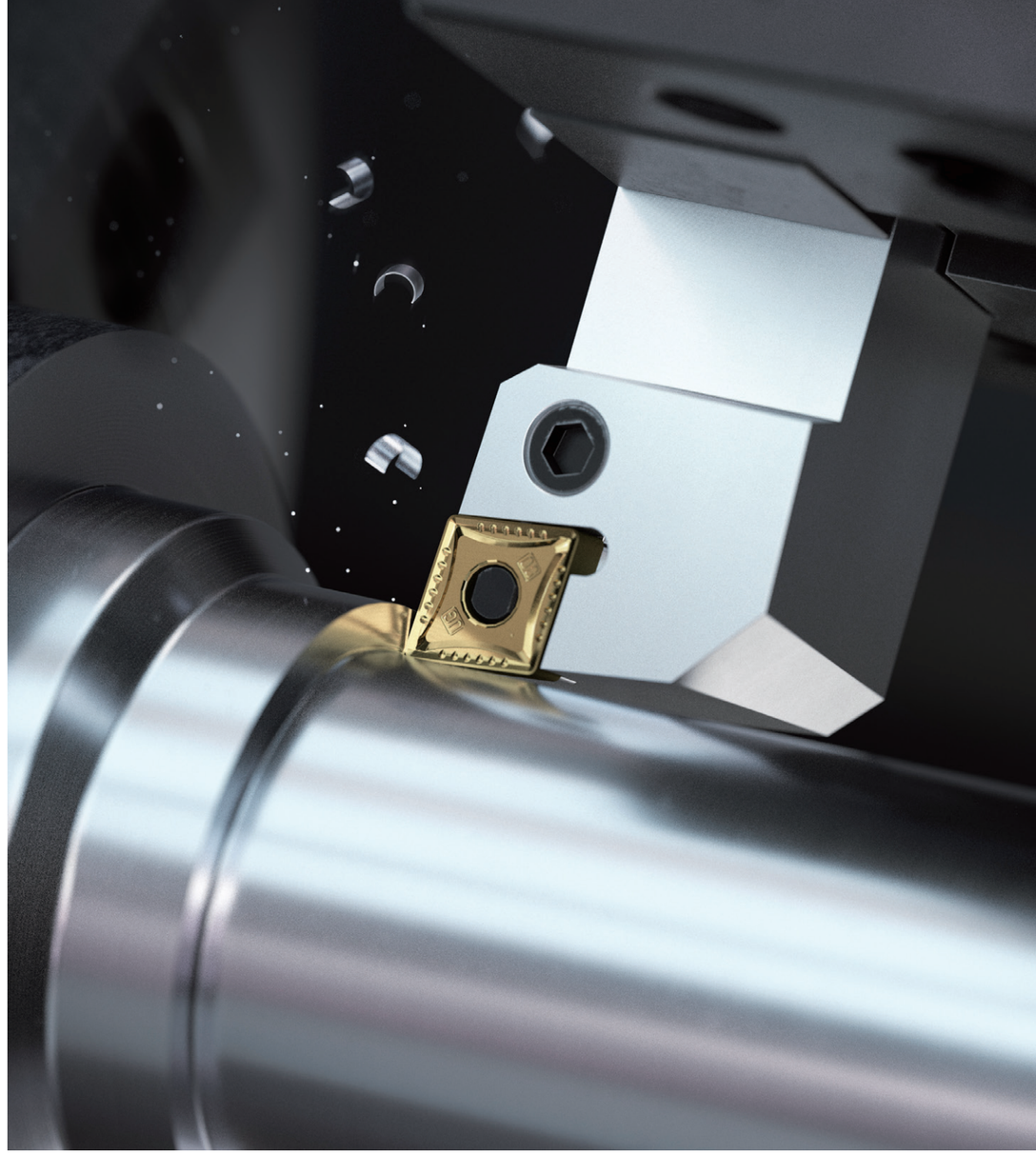
INDEX

Material Groups
Please visit globalyg1.com/mat
for material search

INDEX

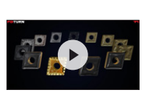
Material Groups
Please visit globalyg1.com/mat
for material search

YG-1 USA - phone: 800-765-8665, E-mail: yg1usa.com
YG-1 HEAD OFFICE - phone: +82-32-526-0909, www.yg1.kr, E-mail: yg1@yg1.kr
YG-1 CO., LTD.



ISO TURNING

Product Overview
Application Guide
Turning Inserts Overview
Turning Inserts
Turning Holders Overview
Turning Holders



Scan this QR code
to see our
Turning Grades
at work.

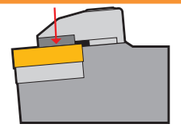
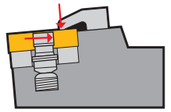
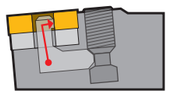
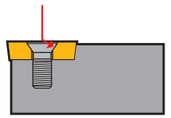
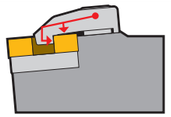
Turning - Name Code System

External Turning Holder Code (Inch)

*Inch

1	2	3	4	5	6	7	8
M	**C**	**L**	**N**	**R**	**12**	**4**	**B**
Clamping System	Insert Shape (1st Letter of Insert)	Tool Style	Insert Clearance (2nd Letter of Insert)	Tool Hand	Shank Width(B) & Height(H)	Insert Size	Length (LF)

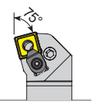
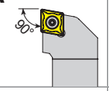
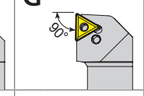
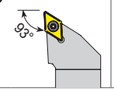
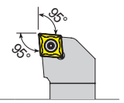
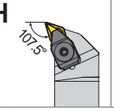
1 - Clamping System

Symbol	System
C	 **Top Clamp** (No Clamping Hole Insert)
M	 **Multi lock** (Straight Clamping Hole Insert)
P	 **Lever Lock** (Straight Clamping Hole Insert)
S	 **Screw Clamp** (Screw Clamping Hole Insert)
D **(T)**	 **Double Clamp** (Straight Clamping Hole Insert)

2, 4 — Insert Compatibility *

* Related to Insert Designation to check compatibility

3 - Tool Style

Approach Angle (KAPR)	Side Direction		End Direction
	Straight Shank	Offset Shank	
45°	D 	S 	
60°		T 	
63°	N 		
72.5°	V 		
75°	B 		K 
90°	A 	G 	F 
93°		J 	U
95°		L (Both Directions) 	
107.5°		H 	

YG TURN INCH

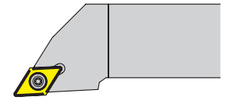
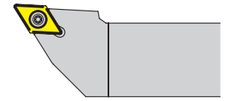
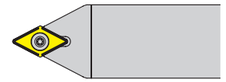
Turning - Name Code System

External Turning Holder Code (Inch)

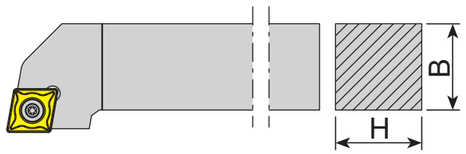
*Inch

1	2	3	4	5	6	7	8
M	**W**	**L**	**N**	**R**	**16**	**3**	**D**
Clamping System	Insert Shape (1st Letter of Insert)	Tool Style	Insert Clearance (2nd Letter of Insert)	Tool Hand	Shank Width(B) & Height(H)	Insert Size	Length (LF)

5 - Hand Direction

Symbol	Hand Direction	
R	Right Hand	
L	Left Hand	
N	Neutral	

6 - Shank Height (H) Shank Width (B)



Number	Hight (H)	Width (B)	Number	Hight (H)	Width (B)
10	.625	.625	**06**	.375	.375
12	.75	.75	**05**	.3125	.3125
16	1.00	1.00	**64**	.75	1.00
20	1.25	1.25	**66**	1.75	1.50
24	1.50	1.50	**85**	1.00	1.25
32	2.00	2.00	**86**	1.00	1.50
08	.50	.50	**91**	1.25	1.50

7 - Insert Size *

Example	is Compatible with…
MCLNR 12 4B	**CNMG432**
MTJNR 16 3B	**TNMG331**

* Related to Insert Designation to check compatibility

8 - Length (LF)

Symbol	Length (Inch)	Symbol	Length (Inch)
A	4.000	**M**	4.000
B	4.500	**N**	4.500
C	5.000	**P**	5.000
D	6.000	**R**	6.000
E	7.000	**S**	7.000
F	8.000	**T**	8.000
G	5.500	**U**	5.500
H	5.625	**V**	3.500
J	5.300	**W**	3.500
K	14.000	**Y**	3.750
L	6.800	**X**	Special

Insert ISO Code System

*Metric : According to ISO 1832

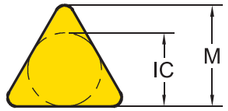
1	2	3	4	5	6	7	8	9
C	N	M	G	12	04	08	-UG	YG3115
Shape	Clearance	Tolerance	Clamping & Chipbreaker	Insert Size	Insert Thickness	Corner Radius	Chipbreaker Geometry	Grade

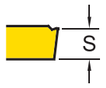
1 - Shape

Symbol	Shape	
H	Hexagonal	
O	Octagonal	
P	Pentagonal	
S	Square	
T	Triangular	
C	Rhombic 80°	
D	Rhombic 55°	
V	Rhombic 35°	
W	Trigon	
L	Rectangular	
K	Parallelogram 55°	
R	Round	

2 - Relief Angle (AN)

Symbol	Relief Angle (AN)	
N	No Relief Angle	
B	Relief 5°	
C	Relief 7°	
P	Relief 11°	
D	Relief 15°	
E	Relief 20°	
F	Relief 25°	
O	Special	





3 - Tolerance Class

Symbol	Inner Circle IC (inch)	Nose Height M (inch)	Thickness S (inch)
C	±.0010	±.0005	±.0010
E	±.001	±.0010	±.001
G	±.001	±.0010	±.005
H	±.0005	± .0005	±.0010
K*	±.002~.006*	±.0005	±.005
M*	±.002~.006*	±.003~.010*	±.005
U*	±.003~.010*	±.005~.015*	±.005

* Tolerance is differs by insert IC size. Please see ISO 1832

4 - Clamping & Chip breaker

Symbol	Clamping	Chipbreaker	Figure
N	No clamping hole	X	
R		One Face	
A	Cylindrical clamping hole	X	
M		One Face	
G		Both Faces	
W	Screw hole	X	
T		One Face	
U		Both Faces	
X	Special		

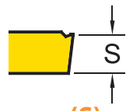
Insert ISO Code System

*Inch

1	2	3	4	5	6	7	8	9
C	N	M	G	4	3	2	-UG	YG3115
Shape	Clearance	Tolerance	Clamping & Chipbreaker	Insert Size	Insert Thickness	Corner Radius	Chipbreaker Geometry	Grade

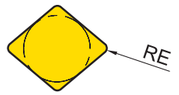
5 - Insert Size

Metric S	Metric T	Metric C	Metric D	Metric V	Metric W	Metric R	Inner Circle IC (inch)	Inch
06	11	06	07	11			1/4	2
07	13	08	09	13	15		5/16	2.5
09	16	09	11	16	06	09 (00)	3/8	3
12	22	12	15	22	08	12 (00)	1/2	4
15	27	16	19	27	10		5/8	5
19	33	19	23	33	13		3/4	6
25		25					1	8
						06 (M0)	.236	
						08 (M0)	.315	
						10 (M0)	.394	
						12 (M0)	.472	
						16 (M0)	.630	



6 - Insert Thickness (S)

Metric	Thickness - S (inch)	Inch
T1	5/64	1.2
02	3/32	1.5
03	1/8	2
T3	5/32	2.5
04	3/16	3
05	7/32	3.5
06	1/4	4
07	5/16	5
09	3/8	6



7 - Corner Radius (RE)

Metric	Corner Radius - RE (inch)	Inch
01	.004	0
02	.008	.5
04	1/64	1
08	1/32	2
12	3/64	3
16	1/16	4
20	5/64	5
24	3/32	6

Grade Naming System

1	2	3	4	5	(6)
YG	**3**	**1**	**1**	**5**	**(G)**
YG Brand	Workpiece Material	Grade Version	Application Range (1st Digit)	Application Range (2nd Digit)	Minor Variation
Carbide CVD (4 Digits)	●	●	●	●	**YG3115**
Carbide PVD (3 Digits)	●	●	●		**YG211**
Carbide Uncoated (2 Digits)	●	●			**YG10**

1 - YG Brand

2 - Workpiece Material

Symbol	Workpiece Material	Turning	Milling	Drilling	Parting
1	**K** Cast Iron or **N** Non - Ferrous	●			
2	**M** Stainless Steel	●			
3	**P** Steel	●			
4	**S** Superalloys	●			
5	**K** Cast Iron or **N** Non - Ferrous		●	●	●
6	**M** Stainless Steel or **Universal**		●	●	●
7	**P** Steel		●	●	●
8	**Universal**	●			
0	**Hardened Steel**		●		

3 — Grade Version

4 & 5 — Application Range

Symbol	
05	Stable — Wear Resistant Grade, Stable Application, Continuous Cut, Finishing
10	
15	
20	General — Balanced Grade, High Versatility, General Application
25	
30	
35	
40	Unstable — Tougher Grade, Unstable Application, Interrupted Cut, Chipping Resistance, Roughing
45	

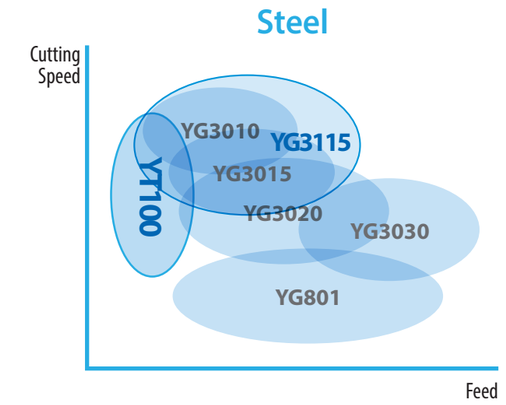
(6) — (Minor Variation)

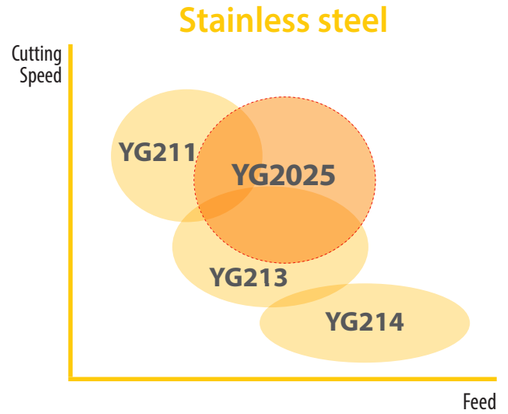
G — Gold Coated Version

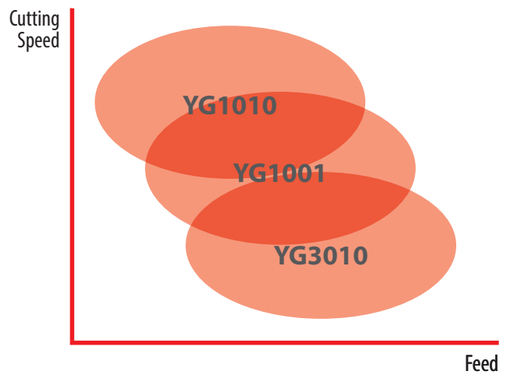
Product Overview

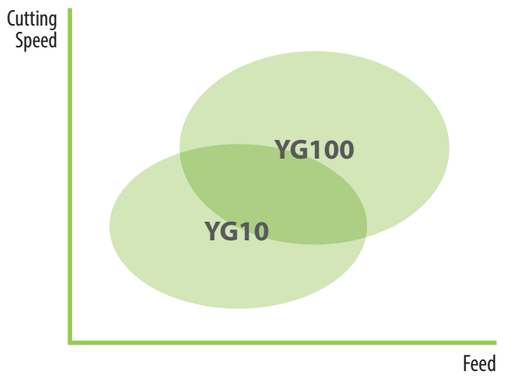
Turning Grades Map

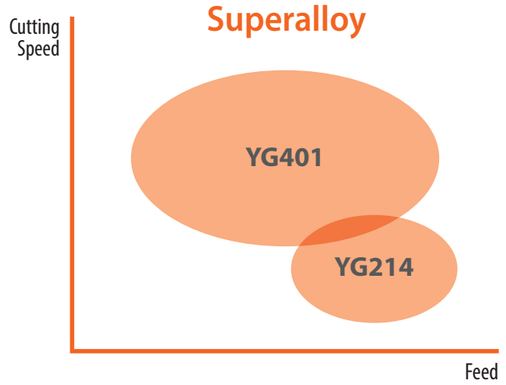
Speed : Vc (ft/min.)
Feed : Fn (inch/rev.)







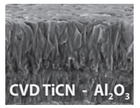




Turning Grades

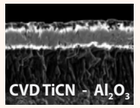
Turning Grades		P Steel				M Stainless steel			K Cast iron			N Non - ferrous		S Superalloys	
		P10	P20	P30	P40	M10	M20	M30	K10	K20	K30	N10	N20	S10	S20
CVD	YG1010								1010						
	YG1001	1001							1001						
	YG3010	3010							3010						
	YG3015		3015												
	YG3115		3115												
	YG3020		3020												
	YG3030			3030											
	YG2025						2025								
PVD	YG801		801												
	YG211					211									
	YG213						213								
	YG214							214							214
	YG401													401	
Cermet	YT100	YT100				YT100			YT100						
DLC	YG100											100			
-	YG10											10			

YG1010
K05 - K15



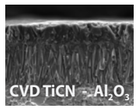
First Choice for Cast Iron
- Effective coating structure enables high speed machining
- Special post treatment for improved chipping resistance

YG1001
P01 - P10
K10 - K25



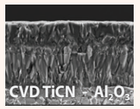
Stable Machining of Cast Iron
- Substrate especially designed for high wear resistance
- Thick Al_2O_3 layer ensures good wear resistance at high cutting speeds including dry machining

YG3010
P05 - P20
K15 - K35



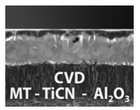
First choice for Finishing Steels, and Ductile Cast iron
- Finishing and light machining of steel under in stable condition
- New Al_2O_3 coating technology and excellent surface smoothness increase wear resistance and chipping resistance

YG3015
P10 - P25



Balanced Productivity for Continuous cut
- High wear resistance and improved toughness ensures high productivity with less trouble

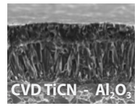
NEW
YG3115
P15 - P25



First choice grade for high cutting speed in Steels
- Suitable for mass production due to stable and predictable tool life
- Minimizing built up edge due to new post surface treatment in mild steels, low carbon steel and low carbon alloy steel.
- Best choice for both continuous as well as interrupted cuts

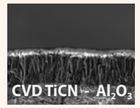
Turning Grades

YG3020
P15 - P30



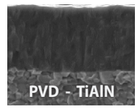
First Choice Grade for General Steel Application
- Substrate especially designed for good toughness
- Excellent surface smoothness increases wear resistance and reliability

YG3030
P20 - P35



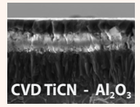
Interrupted Cutting of Steel and Stainless steel
- Substrate for heavy roughing in mild steel and low carbon alloy steel
- New Al_2O_3 technology and optimized surface treatment achieves a good balance between wear resistance and chipping resistance

YG801
P10 - P30



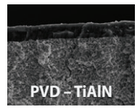
for Carbon Steel with Low Cutting Speed
- Recommended for mild steel and boring application
- Substrate and special PVD coating for excellent wear resistance

NEW
YG2025
M15 - M35



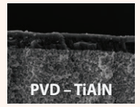
CVD grade for High Cutting Speed for Stainless steel
- Utilizing a new carbide substrate and new coating
- Excellent combination of wear resistance and chipping resistance
- Minimized built up edge due to post surface treatment

YG211
M05 - M25



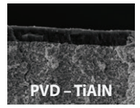
High wear Resistance Grade for Stainless steel
- Finishing Stainless steel

YG213
M20 - M35



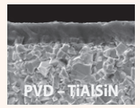
First Choice Grade on Low Cutting Speed of Stainless steel
- First choice on Stainless steel for Low cutting speed
- For Medium to low cutting speed

YG214
M30 - M40
S25 - S30



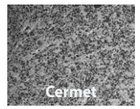
Heavy Interrupted cut for Stainless steel
- For Heavy Interrupted cut on Stainless steel
- Minimize risk of Mechanical fracture or Chipping

YG401
S10 - S20



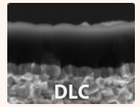
PVD Turning Grade for HRSA
- Highly heat - resistant TiAlSiN structure for excellent wear resistance
- Greatly improved film coating realizes excellent boundary defect resistance
- Top coating layer provides a smooth surface and lubricant effect

NEW
YT100
P10 - P20
M10 - M20
K10 - K20



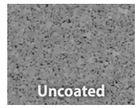
New Generation Cermet Grade
- Enhanced wear resistance & chipping resistance
- Excellent fracture resistance
- Superior surface finish with special edge preparation

YG100
N05 - N25



First Choice Grade for Aluminum with DLC Coating
- Submicron carbide for high wear resistance
- DLC coating minimizes Built Up Edge tendency.
- Improve tool life in sticky non - ferrous alloy

YG10
N05 - N25



Uncoated Grade for General Aluminum
- Substrate consisted of submicron carbide for high wear resistance
- Shining surface to prevent built up edge

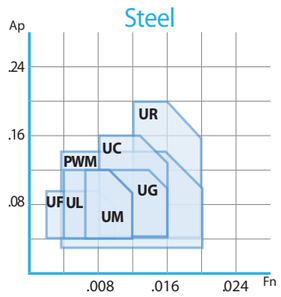
Turning Chip breakers - Negative

P	M	K	N	S			Finishing	Fn .002 ~ .010 / Ap .039 ~ .098
P					UL		Semi Finishing and sticky materials	Fn .004 ~ .012 / Ap .039 ~ .118
P					UM		Medium & Unstable conditions	Fn .006 ~ .012 / Ap .039 ~ .118
P					UG		First Choice for Medium(Stable conditions)	Fn .008 ~ .016 / Ap .039 ~ .118
P					PWM		Wiper - Medium	Fn .004 ~ .020 / Ap .031 ~ .138
P					UH	NEW	Low cutting force	Fn .014 ~ .028 / Ap .079 ~ .354
P					UT	NEW	Heavy roughing	Fn .020 ~ .039 / Ap .157 ~ .472
P		K			UC		Medium Roughing and First choice for Cast iron	Fn .008 ~ .016 / Ap .039 ~ .157
P		K			UR		Roughing and Heavy interrupted cut	Fn .012 ~ .020 / Ap .039 ~ .197
		K			..MA		Cast iron Heavy Roughing	Fn .006 ~ .020 / Ap .039 ~ .197

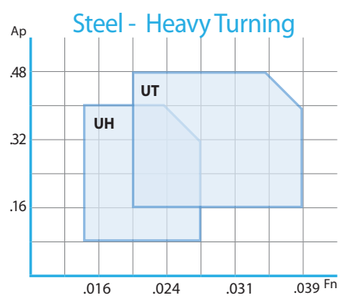
Feed: 0 .004 .008 .012 .016 .020 .024 Fn (inch/rev.)

Depth of Cut: 0 .04 .08 .12 .16 .20 .24 Ap (inch)

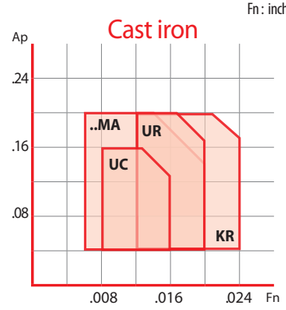
Ap : inch
Fn : inch/rev.



*Insert : CNMG432



*Insert : CNMM646



*Insert : CNMM646

YG TURN INCH

Product Overview

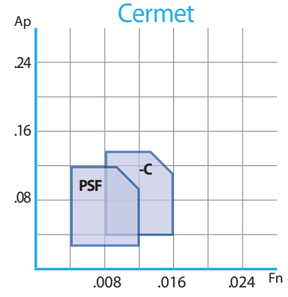
Turning Chip breakers - Negative

P	M	K	N	S			Cast Iron Heavy Roughing	Fn .012 ~ .024 / Ap .039 ~ .197
	M			S	MF		Stainless steel Finishing	Fn .003 ~ .012 / Ap .008 ~ .059
P	M			S	MM		Stainless steel Medium and Low Carbon Steel	Fn .008 ~ .014 / Ap .039 ~ .138
	M			S	MG		Stainless steel General	Fn .008 ~ .016 / Ap .039 ~ .157
	M			S	MR		Stainless steel Roughing	Fn .012 ~ .022 / Ap .079 ~ .217
				S	SF		HRSA Finishing	Fn .004 ~ .010 / Ap .008~.039
				S	SM		HRSA Medium	Fn .006 ~ .012 / Ap .020 ~ .118
				S	SR		Roughing for HRSA	Fn .012 ~ .022 / Ap .079 ~ .217
P	M	K			PSF	NEW	Cermet Finishing	Fn .004 ~ .012 / Ap .024 ~ .118
P	M	K			-C	NEW	Cermet Medium	Fn .008 ~ .016 / Ap .039 ~ .138

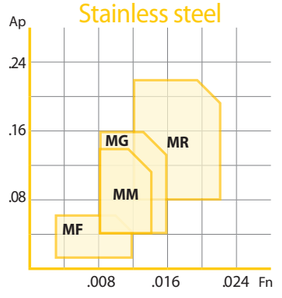
Feed: 0 .004 .008 .012 .016 .020 .024 Fn (inch/rev.)

Depth of Cut: 0 .04 .08 .12 .16 .20 .24 Ap (inch)

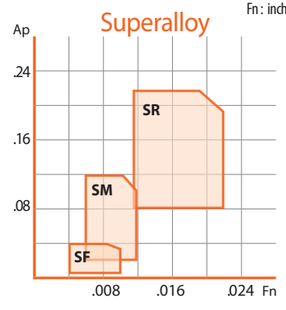
Ap : inch
Fn : inch/rev.



*Insert : CNMG432 / TNGG332



*Insert : CNMG432



*Insert : CNMG432

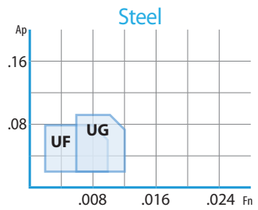
Turning Chip breakers - Positive

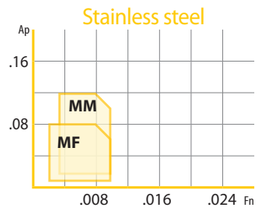
P	M	K	N	S			Aluminum application	Fn .001 ~ .012 / Ap .004 ~ .197
			N		AL			
P	M				UF		Finishing application	Fn .002 ~ .010 / Ap .020 ~ .079
P		K			UG		Medium application	Fn .006 ~ .012 / Ap .020 ~ .098
	M				NEW MF		Stainless steel Finishing	Fn .002 ~ .010 / Ap .004 ~ .079
	M				NEW MM		Stainless steel Medium	Fn .003 ~ .010 / Ap .010 ~ .118
	M				NEW SF		HRSA Finishing	Fn .001 ~ .008 / Ap .004 ~ .098
P	M	K			NEW PF		Cermet Finishing	Fn .002 ~ .010 / Ap .004 ~ .079
P	M	K			NEW PM		Cermet Medium	Fn .003 ~ .010 / Ap .010 ~ .118

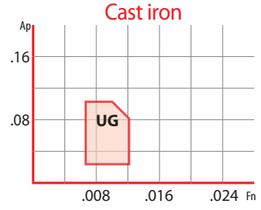
Feed — Fn (inch/rev.)
0 .004 .008 .012 .016 .020 .024

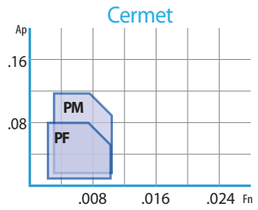
0 .04 .08 .12 .16 .20 .24
Depth of Cut — Ap (inch)

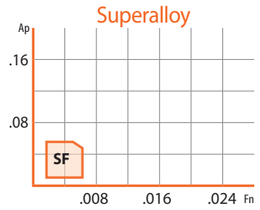
Ap : inch
Fn : inch/rev.

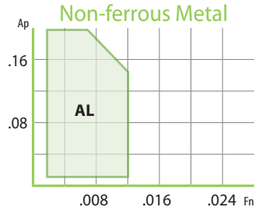












*Insert : CCMT32.52

Turning Inserts Overview

Negative Inserts

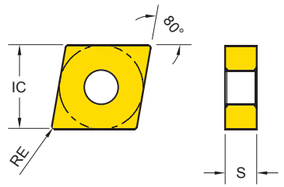
Recommended Cutting Conditions : p.164

Shape		Series	Size & Thickness								Page
C		CNMA			43			54	64			30
		CNMG	32	33	43			54	64		86	
		CNGG			43			54	64		86	
		CNMM			43							
D		DNMA			43	44						35
		DNMG		33	43	44						
		DNGG			43	44						
		DNMM										
		DNUX			43	44						40
K		KNUX					1604 (mm)					41
S		SNMA			43			54	64			42
		SNMG	32		43			54	64			
		SNMM						54	65	85		
T		TNMA		33								47
		TNMG		33			43					
		TNGG		33								49
		TNUX		33								50
V		VNMA		33								51
		VNMG		33								
W		WNMA			43							53
		WNMG		33	43							
		WNGG			43							56

Positive Inserts

Shape		Series	Size & Thickness						Page
C		CCGT	21.5		32.5			43	57
		CCMT	21.5		32.5			43	
D		DCGT	21.5		32.5				59
		DCMT	21.5		32.5				
R		RCMT	602	803		10T3	1204		61
S		SCGT			32.5				63
		SCMT			32.5			43	
T		TCGT	21.5		32.5				64
		TCMT	21.5		32.5				
V		VBGT / VBMT		22		33			66
		VCGT / VCMT		22		33			

CNMA / CNMG (80° Rhombic)

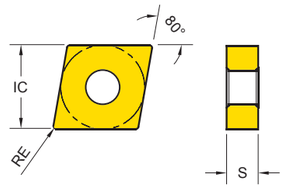


Series	IC	S	Series	IC	S
CN** 32	3/8	1/8	CN** 54	5/8	1/4
CN** 33	3/8	3/16	CN** 64	3/4	1/4
CN** 43	1/2	3/16	CN** 86	1.0	3/8

EDP 2200.. ●: Stock item ○: Order made item

CNMA CNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..MA	CNMA431	.016	.006 ~ .020	.020 ~ .197	● 089400	○ 890	○ 354													
Cast iron	CNMA432	.031	.006 ~ .020	.039 ~ .197	● 148400	○ 100	○ 355													
	CNMA433	.047	.006 ~ .020	.059 ~ .197	● 076600	○ 110	○ 356													
	CNMA434	.063	.006 ~ .020	.079 ~ .197	● 120711	○ 881	○ 314													
	CNMA543	.047	.006 ~ .020	.059 ~ .197	● 088100	○ 120	○ 357													
	CNMA544	.063	.006 ~ .020	.079 ~ .197	● 093704	○ 460	○ 447													
	CNMA643	.047	.006 ~ .020	.059 ~ .354	● 161709	○ 890	○ 990													
	CNMA644	.063	.006 ~ .039	.118 ~ .394	● 101504	○ 480	○ 449													
- UF	CNMG431 - UF	.016	.002 ~ .010	.020 ~ .098			○ 0178		● 237001	● 790	● 180	○ 0003								
Finishing	CNMG432 - UF	.031	.002 ~ .010	.039 ~ .098			○ 018910	○ 27	● 220401	● 900	● 191									
	CNMG433 - UF	.047	.002 ~ .010	.059 ~ .098			○ 1349		● 259813	● 601	● 350									
- UL	CNMG322 - UL	.031	.004 ~ .012	.039 ~ .098			○ 1211		● 258913	● 281	● 212									
Light Machining and Sticky Material	CNMG323 - UL	.047	.004 ~ .012	.059 ~ .098			○ 1274		● 259012	● 701	● 704									
	CNMG332 - UL	.031	.004 ~ .012	.039 ~ .098			○ 1338		● 259113	● 351	● 705									
	CNMG333 - UL	.047	.004 ~ .012	.059 ~ .098			○ 1339		● 259213	● 361	● 706									
	CNMG431 - UL	.016	.004 ~ .012	.020 ~ .118			○ 0358		● 238103	● 590	● 524									
	CNMG432 - UL	.031	.004 ~ .012	.039 ~ .118			○ 0192		● 231501	● 930	● 194									
	CNMG433 - UL	.047	.004 ~ .012	.059 ~ .118			○ 0201		● 239602	● 020	● 203									
- UM	CNMG431 - UM	.016	.006 ~ .012	.020 ~ .118		● 107	○ 40184		● 217401	● 850	● 186									
Medium Machining Unstable condition	CNMG432 - UM	.031	.006 ~ .012	.039 ~ .118	● 089703	● 380	○ 1140	○ 843	● 221801	● 000	● 140									
	CNMG433 - UM	.047	.006 ~ .012	.059 ~ .118		● 107	○ 50525		● 238704	● 860	● 526									

CNMG (80° Rhombic)

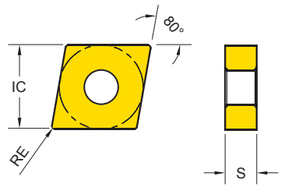


Series	IC	S	Series	IC	S
CN** 32	3/8	1/8	CN** 54	5/8	1/4
CN** 33	3/8	3/16	CN** 64	3/4	1/4
CN** 43	1/2	3/16	CN** 86	1.0	3/8

EDP 2200.. ●: Stock item ○: Order made item

CNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- UG	CNMG431 - UG	.016	.008 ~ .016	.020 ~ .118	● 157810	○ 730	○ 181		● 221901	● 820	● 183									
Medium Machining at stable condition	CNMG432 - UG	.031	.008 ~ .016	.039 ~ .118	● 089603	○ 370	○ 113	○ 1001	● 217800	● 990	● 390	○ 0001								
	CNMG433 - UG	.047	.008 ~ .016	.059 ~ .118	● 157906	○ 850	○ 198		● 219901	● 990	● 200									
	CNMG542 - UG	.031	.008 ~ .016	.039 ~ .197	● 182610	○ 771	○ 078		● 259907	● 480	● 749									
	CNMG543 - UG	.047	.008 ~ .016	.059 ~ .197	● 182707	○ 910	○ 530		● 243005	● 080	● 531									
	CNMG544 - UG	.063	.012 ~ .020	.079 ~ .197	● 182812	○ 290	○ 534		● 260005	● 100	● 535									
	CNMG642 - UG	.031	.008 ~ .024	.039 ~ .236	● 1847		○ 0801		● 260108	● 020	● 803									
	CNMG643 - UG	.047	.008 ~ .024	.059 ~ .236					● 260323	● 062	● 307									
NEW - PWM	CNMG431 - PWM	.016	.004 ~ .020	.020 ~ .138	● 1940				● 259319	● 772	● 046									
Wiper - Medium	CNMG432 - PWM	.031	.004 ~ .020	.031 ~ .138	● 2047				● 259512	● 511	● 319									
	CNMG433 - PWM	.047	.004 ~ .020	.039 ~ .138	● 1697				● 259719	● 501	● 951									
- UC	CNMG431 - UC	.016	.008 ~ .016	.020 ~ .157	● 089500	○ 960	○ 115		● 237201	● 010	● 116									
Cast iron and Medium roughing	CNMG432 - UC	.031	.008 ~ .016	.039 ~ .157	● 148300	○ 620	○ 117		● 217201	● 020	● 118									
	CNMG433 - UC	.047	.008 ~ .016	.059 ~ .157	● 087300	○ 880	○ 119		● 218501	● 030	● 120									
- UR	CNMG432 - UR	.031	.012 ~ .020	.039 ~ .197	● 153610	○ 500	○ 195		● 219601	● 960	● 197									
Roughing	CNMG433 - UR	.047	.012 ~ .020	.059 ~ .197	● 087810	○ 510	○ 204		● 217902	● 050	● 206	○ 0004								
	CNMG434 - UR	.063	.012 ~ .020	.079 ~ .197	● 153010	○ 760	○ 707		● 221306	● 230	● 847									
	CNMG542 - UR	.031	.012 ~ .020	.039 ~ .197	● 166810	○ 791	○ 080		● 242607	● 500	● 751									
	CNMG543 - UR	.047	.012 ~ .020	.059 ~ .197	● 088207	○ 920	○ 532		● 219705	● 090	● 533									
	CNMG544 - UR	.063	.012 ~ .020	.079 ~ .197	● 093806	○ 760	○ 536		● 218705	● 110	● 537									
	CNMG642 - UR	.031	.012 ~ .031	.118 ~ .354	● 1848		○ 0804		● 242708	● 050	● 806									
	CNMG643 - UR	.047	.012 ~ .031	.118 ~ .354	● 182904	○ 500	○ 451		● 235506	● 980	● 699									
	CNMG644 - UR	.063	.012 ~ .031	.118 ~ .354	● 183004	○ 800	○ 481		● 258307	● 340	● 735									
- KR	CNMG432 - KR	.031	.012 ~ .024	.039 ~ .197	● 150307	○ 180	○ 800		● 2594											
Cast Iron Heavy Roughing	CNMG433 - KR	.047	.012 ~ .024	.059 ~ .197	● 087907	○ 191	○ 100		● 2596											
	CNMG543 - KR	.047	.012 ~ .024	.059 ~ .236	● 1504		○ 1092		● 2581											
	CNMG544 - KR	.063	.012 ~ .024	.079 ~ .236	● 1588		○ 1094		● 2582											
	CNMG643 - KR	.047	.012 ~ .039	.118 ~ .354	● 2264				● 2602											

CNMG (80° Rhombic)

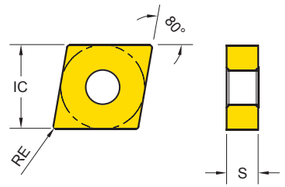


Series	IC	S	Series	IC	S
CN** 32	3/8	1/8	CN** 54	5/8	1/4
CN** 33	3/8	3/16	CN** 64	3/4	1/4
CN** 43	1/2	3/16	CN** 86	1.0	3/8

EDP 2200.. ●: Stock item ○: Order made item

CNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- MF (Stainless steel Finishing)	CNMG431 - MF	.016	.003 ~ .012	.008 ~ .059						○ 1185	○ 1237		● 2451	● 0609	● 0613	● 1708	○ 2271			
	CNMG432 - MF	.031	.003 ~ .012	.008 ~ .059							○ 0652		● 2452	● 0538	● 0539	● 0627	○ 2272			
	CNMG433 - MF	.047	.003 ~ .012	.008 ~ .059							○ 1025		● 2453			● 1139				
- MM (Stainless steel Medium)	CNMG431 - MM	.016	.008 ~ .014	.020 ~ .138										● 0547	● 0548	● 1709	○ 2286			
	CNMG432 - MM	.031	.008 ~ .014	.039 ~ .138						○ 0360	○ 0188			● 0494	● 0495	● 0607	○ 2287			
	CNMG433 - MM	.047	.008 ~ .014	.059 ~ .138							○ 0521			● 0549	● 0550	● 0626	○ 2288			
	CNMG642 - MM	.031	.008 ~ .020	.079 ~ .217										● 1969	● 1970	● 1933				
	CNMG643 - MM	.047	.008 ~ .022	.079 ~ .217										● 1971	● 1972	● 1934				
- MG (Stainless steel General)	CNMG431 - MG	.016	.008 ~ .016	.020 ~ .157									● 2465							
	CNMG432 - MG	.031	.008 ~ .016	.039 ~ .157							○ 1371		● 2468	● 1490	● 1491	● 1090	● 1222			
	CNMG433 - MG	.047	.008 ~ .016	.059 ~ .157									● 2469	● 1493	● 1494	● 0928	● 1221			
	CNMG542 - MG	.031	.008 ~ .018	.039 ~ .157										● 1921	● 1917	● 1919	● 1812			
	CNMG543 - MG	.047	.008 ~ .020	.079 ~ .157										● 1922	● 1918	● 1920	● 1813			
	CNMG544 - MG	.063	.008 ~ .020	.079 ~ .157										● 1929	● 1930	● 1535	● 1540			
	CNMG644 - MG	.063	.008 ~ .020	.079 ~ .197										● 1931	● 1932	● 1534	● 1541			
- MR (Stainless steel Roughing)	CNMG432 - MR	.031	.012 ~ .022	.079 ~ .217								○ 0594		● 0540	● 0541	● 0608				
	CNMG433 - MR	.047	.012 ~ .022	.079 ~ .217							○ 0839	○ 0840	● 2480	● 0610	● 0614	● 0628				
	CNMG434 - MR	.063	.012 ~ .022	.079 ~ .217										● 1893	● 1894	● 1895				

CNGG / CNMG (80° Rhombic)



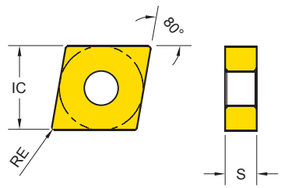
Series	IC	S	Series	IC	S
CN** 32	3/8	1/8	CN** 54	5/8	1/4
CN** 33	3/8	3/16	CN** 64	3/4	1/4
CN** 43	1/2	3/16	CN** 86	1.0	3/8

EDP 2200.. ●: Stock item ○: Order made item

CNGG CNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- SF (HRSA Finishing)	CNGG430 - SF	.004	.004 ~ .010	.004 ~ .039													● 1882			
	CNGG430.5 - SF	.008	.004 ~ .010	.004 ~ .039													● 2097			
	CNGG431 - SF	.016	.004 ~ .010	.008 ~ .039													● 1291			
	CNGG432 - SF	.031	.004 ~ .010	.008 ~ .039													● 0943			
- SM (HRSA Medium)	CNMG432 - SM	.031	.006 ~ .012	.020 ~ .118										○ 1088	○ 1089	○ 1395	● 1189			
	CNMG433 - SM	.047	.006 ~ .012	.020 ~ .118										○ 1373	○ 1394	○ 2305	● 1292			
- SR (HRSA Roughing)	CNMG432 - SR	.031	.012 ~ .022	.079 ~ .217													● 0945			
	CNMG433 - SR	.047	.012 ~ .022	.079 ~ .217													● 1279			
	CNMG434 - SR	.063	.012 ~ .022	.079 ~ .217													● 1912			
NEW - PSF (Cermet Finishing)	CNMG431 - PSF	.016	.003 ~ .012	.016 ~ .118													● 2531			
	CNMG432 - PSF	.031	.004 ~ .0.14	.024 ~ .118													● 2532			

Turning Inserts - Negative

CNMG / CNMM - Heavy Turning (80° Rhombic)



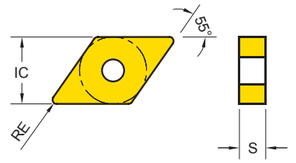
Series	IC	S	Series	IC	S
CN** 32	3/8	1/8	CN** 54	5/8	1/4
CN** 33	3/8	3/16	CN** 64	3/4	1/4
CN** 43	1/2	3/16	CN** 86	1.0	3/8

EDP 2200.. ●: Stock item ○: Order made item

CNMG CNMM	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
NEW - UH  Low cutting force	CNMM432 - UH	.031	.012 ~ .020	.059 ~ .197						● 2320	● 2321									
	CNMM543 - UH	.047	.014 ~ .024	.079 ~ .217						● 2316	● 2317									
	CNMM544 - UH	.063	.014 ~ .024	.098 ~ .217						● 2318	● 2319									
	CNMM643 - UH	.047	.014 ~ .028	.059 ~ .354	● 2107		● 2108			● 2113	● 2114									
	CNMM644 - UH	.063	.014 ~ .028	.079 ~ .354	● 2115		● 2116			● 2117	● 2118									
	CNMM646 - UH	.094	.014 ~ .028	.118 ~ .354	● 2109		● 2110			● 2111	● 2112									
	CNMM866 - UH	.094	.016 ~ .031	.118 ~ .394	● 2119		● 2120			● 2121	● 2122									
- UR  Roughing	CNMM644 - UR	.063	.012 ~ .031	.118 ~ .354						● 0925	● 0926									
	CNMG866 - UR	.094	.016 ~ .039	.197 ~ .472						● 2604	● 1687	● 1464								
NEW - UT  Heavy Roughing	CNMM432 - UT	.031	.016 ~ .028	.059 ~ .236						● 2322	● 2323									
	CNMM543 - UT	.047	.018 ~ .028	.079 ~ .236						● 2335	● 2336									
	CNMM544 - UT	.063	.018 ~ .028	.098 ~ .236						● 2324	● 2325									
	CNMM643 - UT	.047	.020 ~ .039	.118 ~ .472	● 2139		● 2140			● 2141	● 2142									
	CNMM644 - UT	.063	.020 ~ .039	.157 ~ .472	● 2143		● 2144			● 2145	● 2146									
	CNMM646 - UT	.094	.020 ~ .039	.236 ~ .472	● 2147		● 2148			● 2149	● 2150									
	CNMM866 - UT	.094	.022 ~ .047	.236 ~ .512	● 2151		● 2152			● 2021	● 2022									

Turning Inserts - Negative

DNMA / DNMG (55° Rhombic)

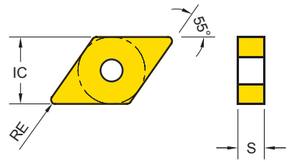


Series	IC	S
DN.. 33	3/8	3/16
DN.. 43	1/2	3/16
DN.. 44	1/2	1/4

EDP 2200.. ●: Stock item ○: Order made item

DNMA DNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..MA  Cast iron	DNMA431	.016	.004 ~ .020	.020 ~ .197	● 1558	○ 1505	○ 1506													
	DNMA432	.031	.006 ~ .020	.039 ~ .197	● 1559	○ 0573	○ 0574													
	DNMA433	.047	.006 ~ .020	.059 ~ .197	● 1421	○ 0575	○ 0576													
	DNMA441	.016	.004 ~ .020	.020 ~ .197	● 1581	○ 1445	○ 1447													
	DNMA442	.031	.006 ~ .020	.039 ~ .197	● 1557	○ 0091	○ 1129													
	DNMA443	.047	.006 ~ .020	.059 ~ .197	● 1422	○ 0092	○ 1130													
- UF  Finishing	DNMG431 - UF	.016	.002 ~ .010	.020 ~ .098			○ 0363		● 2220	● 0364	● 0365	○ 0016								
	DNMG432 - UF	.031	.002 ~ .010	.039 ~ .098		○ 0856	○ 1030		● 2221	● 0774	● 0857									
	DNMG433 - UF	.047	.002 ~ .010	.059 ~ .098		○ 1450			● 2584	● 1368	● 1383									
	DNMG441 - UF	.016	.002 ~ .010	.020 ~ .098		○ 0225			● 2398	● 0226	● 0227	○ 0018								
	DNMG442 - UF	.031	.002 ~ .010	.039 ~ .098		○ 0231			● 2419	● 0232	● 0233									
	DNMG443 - UF	.047	.002 ~ .010	.059 ~ .098		○ 1385			● 2610	● 1369	● 1386									
- UL  Light Machining and Sticky Material	DNMG331 - UL	.016	.004 ~ .012	.020 ~ .098		○ 1239			● 2606	● 1240	● 1241									
	DNMG332 - UL	.031	.004 ~ .012	.039 ~ .098		○ 1242			● 2607	● 1243	● 1244									
	DNMG431 - UL	.016	.004 ~ .012	.020 ~ .118		○ 0686			● 2444	● 0687	● 0708									
	DNMG432 - UL	.031	.004 ~ .012	.039 ~ .118		○ 0489	○ 1028		● 2337	● 0504	● 0505									
	DNMG433 - UL	.047	.004 ~ .012	.059 ~ .118		○ 0709	○ 1029		● 2314	● 1081	● 1109									
	DNMG441 - UL	.016	.004 ~ .012	.020 ~ .118		○ 0369			● 2404	● 0370	● 1110									
	DNMG442 - UL	.031	.004 ~ .012	.039 ~ .118		○ 0237			● 2214	● 0238	● 0239									
	DNMG443 - UL	.047	.004 ~ .012	.059 ~ .118		○ 0246			● 2611	● 0247	● 0248									

DNMG (55° Rhombic)

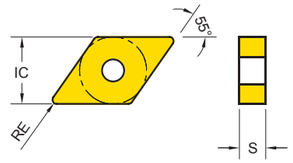


Series	IC	S
DN.. 33	3/8	3/16
DN.. 43	1/2	3/16
DN.. 44	1/2	1/4

EDP 2200.. ●: Stock item ○: Order made item

DNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- UM	DNMG431 - UM	.016	.006 ~ .012	.020 ~ .118	○ 1672		○ 1702		● 2608	● 1703	● 1707									
Medium Machining Unstable condition	DNMG432 - UM	.031	.006 ~ .012	.039 ~ .118		○ 1106	○ 0688		● 2360	● 0689	● 0701									
	DNMG433 - UM	.047	.006 ~ .012	.059 ~ .118		○ 0604	○ 0512		● 2203	● 0488	● 0705									
	DNMG441 - UM	.016	.006 ~ .012	.020 ~ .118		○ 1408	○ 1436		● 2609	● 1409	● 1425									
	DNMG442 - UM	.031	.006 ~ .012	.039 ~ .118		○ 1128	○ 0240		● 2201	● 0241	● 0242									
	DNMG443 - UM	.047	.006 ~ .012	.059 ~ .118		○ 1149	○ 1132		● 2612	● 0695	● 0706									
- UG	DNMG431 - UG	.016	.008 ~ .016	.020 ~ .118	● 1618		○ 1131		● 2443	● 0772	● 1137									
Medium Machining at stable condition	DNMG432 - UG	.031	.008 ~ .016	.039 ~ .118	● 1608	○ 0452	○ 0366		● 2368	● 0367	● 0368	○ 0017								
	DNMG433 - UG	.047	.008 ~ .016	.059 ~ .118	● 1514	○ 0703	○ 1107		● 2442	● 0487	● 0704									
	DNMG441 - UG	.016	.008 ~ .016	.020 ~ .118	● 1619		○ 0228		● 2375	● 0229	● 0230									
	DNMG442 - UG	.031	.008 ~ .016	.039 ~ .118	● 1609	○ 0453	○ 0234		● 2212	● 0235	● 0236	○ 0019								
	DNMG443 - UG	.047	.008 ~ .016	.059 ~ .118	● 1511	○ 0454	○ 0243		● 2356	● 0244	● 0245									
- UC	DNMG432 - UC	.031	.008 ~ .016	.039 ~ .157	● 1611	○ 0577	○ 0578	○ 1273	● 2388	● 1193	● 0700									
Cast iron and Medium roughing	DNMG433 - UC	.047	.008 ~ .016	.059 ~ .157	● 1512	○ 0579	○ 0580		● 2373	● 1168	● 0702									
	DNMG442 - UC	.031	.008 ~ .016	.039 ~ .157	● 0898	○ 0090	○ 0121	○ 1272	● 2376	● 0104	● 0122									
	DNMG443 - UC	.047	.008 ~ .016	.059 ~ .157	● 1509	○ 0980	○ 0123		● 2410	● 0105	● 0124									
- UR	DNMG432 - UR	.031	.012 ~ .020	.039 ~ .197	● 1621	○ 1095	○ 0585		● 2446	● 1096	● 1097									
Roughing	DNMG433 - UR	.047	.012 ~ .020	.059 ~ .197	● 1513	○ 1127	○ 0581		● 2400	● 1134	● 1101									
	DNMG442 - UR	.031	.012 ~ .020	.039 ~ .197	● 1622	○ 0691	○ 0692		● 2447	● 0693	● 0854									
	DNMG443 - UR	.047	.012 ~ .020	.059 ~ .197	● 1510	○ 1258	○ 0371		● 2416	● 0372	● 0373	○ 0020								

DNMG (55° Rhombic)



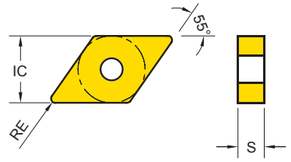
Series	IC	S
DN.. 33	3/8	3/16
DN.. 43	1/2	3/16
DN.. 44	1/2	1/4

EDP 2200.. ●: Stock item ○: Order made item

DNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- MF	DNMG431 - MF	.016	.003 ~ .012	.008 ~ .059									● 2454	● 0848	● 0771	● 1815	○ 2273			
Stainless steel Finishing	DNMG432 - MF	.031	.003 ~ .012	.008 ~ .059						○ 0807			● 2456	● 0849	● 0773	● 1816	○ 2274			
	DNMG441 - MF	.016	.003 ~ .012	.008 ~ .059									● 2455	● 0811	● 0850	● 1819	○ 1945			
	DNMG442 - MF	.031	.003 ~ .012	.008 ~ .059					○ 1202	○ 0813			● 2457	● 0812	● 0859	● 1820	○ 2275			
- MM	DNMG431 - MM	.016	.008 ~ .014	.020 ~ .138						○ 0527			● 0551	● 0552	● 1710	● 2289				
Stainless steel Medium	DNMG432 - MM	.031	.008 ~ .014	.039 ~ .138						○ 0506			● 0513	● 0514	● 1788	○ 2290				
	DNMG433 - MM	.047	.008 ~ .014	.059 ~ .138						○ 0529			● 0561	● 0562	● 1711	○ 2291				
	DNMG441 - MM	.016	.008 ~ .014	.020 ~ .138						○ 0528			● 0553	● 0554	● 1712	○ 2292				
	DNMG442 - MM	.031	.008 ~ .014	.039 ~ .138						○ 0507			● 0515	● 0516	● 0690	○ 2293				
	DNMG443 - MM	.047	.008 ~ .014	.059 ~ .138						○ 0496			● 0563	● 0564	● 0694	○ 2294				
- MG	DNMG431 - MG	.016	.008 ~ .016	.020 ~ .157									● 2466							
Stainless steel General	DNMG432 - MG	.031	.008 ~ .016	.039 ~ .157									● 2470	● 1561	● 1562	● 1563	● 1560			
	DNMG433 - MG	.047	.008 ~ .016	.059 ~ .157									● 2483							
	DNMG441 - MG	.016	.008 ~ .016	.020 ~ .157									● 2467							
	DNMG442 - MG	.031	.008 ~ .016	.039 ~ .157									● 2471	● 1565	● 1566	● 1567	● 1564			
	DNMG443 - MG	.047	.008 ~ .016	.059 ~ .157									● 2484							
- MR	DNMG432 - MR	.031	.012 ~ .022	.079 ~ .217						○ 1036			● 2492	● 0914	● 0808	● 0809				
Stainless steel Roughing	DNMG433 - MR	.047	.012 ~ .022	.079 ~ .217									● 0929	● 0930	● 0810					
	DNMG442 - MR	.031	.012 ~ .022	.079 ~ .217						○ 1037			● 2481	● 0860	● 0814	● 0815				
	DNMG443 - MR	.047	.012 ~ .022	.079 ~ .217									● 0861	● 0862	● 0816					

Turning Inserts - Negative

DNGG / DNMG (55° Rhombic)



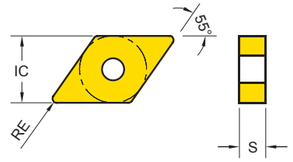
Series	IC	S
DN.. 33	3/8	3/16
DN.. 43	1/2	3/16
DN.. 44	1/2	1/4

EDP 2200.. ●: Stock item ○: Order made item

DNGG DNMG	Designation	RE	Fn (In/rev.)	Ap (In)	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
					K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
- SF  HRSA Finishing	DNGG431 - SF	.016	.004 ~ .010	.008 ~ .039													● 1295			
	DNGG432 - SF	.031	.004 ~ .010	.008 ~ .039													● 1293			
	DNGG441 - SF	.016	.004 ~ .010	.008 ~ .039													● 1296			
	DNGG442 - SF	.031	.004 ~ .010	.008 ~ .039													● 1294			
- SM  HRSA Medium	DNMG432 - SM	.031	.006 ~ .012	.020 ~ .118										○ 1417	○ 1412	○ 1817	● 1300			
	DNMG433 - SM	.047	.006 ~ .012	.020 ~ .118										○ 1419	○ 1413	○ 1818	● 1303			
	DNMG442 - SM	.031	.006 ~ .012	.020 ~ .118										○ 1418	○ 1414	○ 1821	● 1301			
	DNMG443 - SM	.047	.006 ~ .012	.020 ~ .118										○ 1420	○ 1415	○ 1822	● 1302			
- SR  HRSA Roughing	DNMG432 - SR	.031	.012 ~ .022	.079 ~ .217													● 1298			
	DNMG433 - SR	.047	.012 ~ .022	.079 ~ .217													● 1297			
	DNMG442 - SR	.031	.012 ~ .022	.079 ~ .217													● 1280			
	DNMG443 - SR	.047	.012 ~ .022	.079 ~ .217													● 1299			
NEW - PSF  Cermet Finishing	DNMG431 - PSF	.016	.003 ~ .012	.016 ~ .118														● 2533		
	DNMG432 - PSF	.031	.004 ~ .012	.024 ~ .118														● 2534		

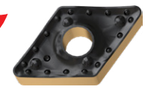
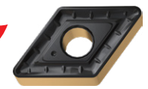
Turning Inserts - Negative

DNMM - Heavy Turning (55° Rhombic)



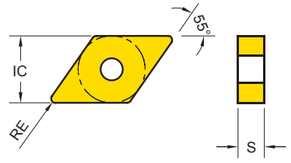
Series	IC	S
DN.. 33	3/8	3/16
DN.. 43	1/2	3/16
DN.. 44	1/2	1/4

EDP 2200.. ●: Stock item ○: Order made item

DNMM	Designation	RE	Fn (In/rev.)	Ap (In)	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
					K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
NEW - UH  Low cutting force	DNMM443 - UH	.047	.012 ~ .020	.079 ~ .276						● 2327	● 2328									
NEW - UT  Heavy Roughing	DNMM443 - UT	.047	.016 ~ .028	.079 ~ .315						● 2329	● 2330									

Turning Inserts - Negative

DNUX (4 Corners 55° Rhombic)



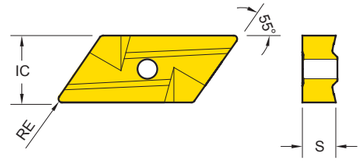
Series	LE	IC	S
DNUX.. 43	.512	1/2	3/16
DNUX.. 44	.512	1/2	1/4

EDP 2200.. ●: Stock item ○: Order made item

DNUX	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
NEW ..UX  Left Hand Shown	DNUX431L	.016	.004 ~ .014	.028 ~ .157			○ 1874		● 2613	● 1872	● 1875									
	DNUX432L	.031	.004 ~ .014	.039 ~ .157			○ 1876		● 2615	● 1877	● 1878									
	DNUX441L	.016	.004 ~ .014	.028 ~ .157			○ 1873		● 2617	● 1869	● 1870									
	DNUX442L	.031	.004 ~ .014	.039 ~ .157			○ 1879		● 2619	● 1871	● 1880									
NEW ..UX  Right Hand Shown	DNUX431R	.016	.004 ~ .014	.028 ~ .157			○ 1628		● 2614	● 1555	● 1629									
	DNUX432R	.031	.004 ~ .014	.039 ~ .157			○ 1630		● 2616	● 1631	● 1632									
	DNUX441R	.016	.004 ~ .014	.028 ~ .157			○ 1625		● 2618	● 1322	● 1323				● 1327	● 1321	● 2052			
	DNUX442R	.031	.004 ~ .014	.039 ~ .157			○ 1633		● 2620	● 1546	● 1634			● 1948	● 1547		● 1574			

Turning Inserts - Negative

KNUX (2 Corners 55° Rhombic)

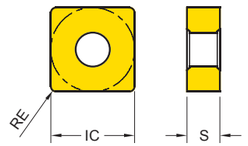


Series	LE	S
KN** 1604	.591	3/16

EDP 2200.. ●: Stock item ○: Order made item

KNUX	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..UX  Left Hand Shown	KNUX160405L	.020	.004 ~ .016	.020 ~ .236			○ 0249		● 2621	● 0250	● 0251	○ 0079								
	KNUX160410L	.039	.012 ~ .024	.039 ~ .236			○ 1785		● 2622	● 1786	● 1315									
..UX  Right Hand Shown	KNUX160405R	.020	.004 ~ .016	.020 ~ .236			○ 0252		● 2408	● 0253	● 0254	○ 0080								
	KNUX160410R	.039	.012 ~ .024	.039 ~ .236			○ 1358		● 2623	● 1155	● 1156									

SNMA / SNMG (90° Square)

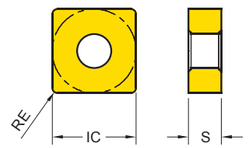


Series	IC	S
SN** 32	3/8	1/8
SN** 43	1/2	3/16
SN** 54	5/8	1/4
SN** 64	3/4	1/4
SN** 85	1	5/16
SN** 86	1	3/8

EDP 2200.. ●: Stock item ○: Order made item

SNMA SNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..MA	SNMA432	.031	.006 ~ .020	.039 ~ .197	● 07670	○ 00271	○ 01166													
Cast iron	SNMA433	.047	.006 ~ .020	.059 ~ .197	● 07680	○ 02811	○ 03320													
	SNMA434	.047	.006 ~ .020	.071 ~ .197	● 2023															
	SNMA543	.047	.006 ~ .020	.059 ~ .197	● 14230	○ 07291	○ 01150													
	SNMA644	.063	.006 ~ .020	.079 ~ .354	● 13441	○ 11841	○ 12610													
- UF	SNMG322 - UF	.031	.002 ~ .008	.039 ~ .079					● 26300	● 09990										
Finishing	SNMG431 - UF	.016	.002 ~ .010	.020 ~ .098			○ 14580		● 26310	● 14590	● 14540	○ 02900								
	SNMG432 - UF	.031	.002 ~ .010	.039 ~ .098			○ 14300		● 26330	● 14330	● 14370									
- UL	SNMG431 - UL	.016	.004 ~ .012	.020 ~ .118			○ 11670		● 26320	● 74710	● 11940									
Light Machining and Sticky Material	SNMG432 - UL	.031	.004 ~ .012	.039 ~ .118			○ 03890		● 26340	● 39000	● 03910									
- UM	SNMG432 - UM	.031	.006 ~ .012	.039 ~ .118		○ 09830	○ 07390		● 26350	● 78400	● 07400									
Medium Machining Unstable condition																				

SNMG (90° Square)

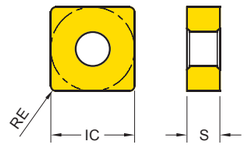


Series	IC	S
SN** 32	3/8	1/8
SN** 43	1/2	3/16
SN** 54	5/8	1/4
SN** 64	3/4	1/4
SN** 85	1	5/16
SN** 86	1	3/8

EDP 2200.. ●: Stock item ○: Order made item

SNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- UG	SNMG432 - UG	.031	.008 ~ .016	.039 ~ .118	● 16101	○ 19001	○ 41430		● 23610	● 14201	● 43003	○ 00300								
Medium Machining at stable condition	SNMG433 - UG	.047	.008 ~ .016	.059 ~ .118	● 16401	○ 16402	○ 58241		● 24110	● 25902	● 60260									
	SNMG434 - UG	.063	.008 ~ .016	.079 ~ .118	● 16461	○ 16507	○ 44078	○ 92638	● 11691	● 11950										
- UC	SNMG432 - UC	.031	.008 ~ .016	.039 ~ .157	● 14880	○ 07301	○ 25124		● 24050	● 10601	● 26126									
Cast iron and Medium roughing	SNMG433 - UC	.047	.008 ~ .016	.059 ~ .157	● 09000	○ 07401	○ 27127		● 24290	● 10701	● 28128									
- UR	SNMG432 - UR	.031	.012 ~ .020	.039 ~ .197	● 16231	○ 16303	○ 92401		● 03930	● 39400										
Roughing	SNMG433 - UR	.047	.012 ~ .020	.059 ~ .197	● 16241	○ 05202	○ 61258		● 50260	● 20300	● 31○									
	SNMG434 - UR	.063	.012 ~ .020	.079 ~ .197	● 18370	○ 98809	○ 74097	○ 52639	● 09710	● 09770										
	SNMG643 - UR	.047	.012 ~ .031	.118 ~ .354					● 26401	● 01810	● 10260									
	SNMG644 - UR	.063	.012 ~ .031	.118 ~ .354	● 18380				● 26411	● 58310	● 15840									
- KR	SNMG433 - KR	.047	.012 ~ .024	.059 ~ .197	● 10641	○ 06310	○ 65260		● 26360											
Cast Iron Heavy Roughing	SNMG434 - KR	.063	.012 ~ .024	.079 ~ .197	● 12080	○ 73009	○ 50096	○ 52637												

SNMG (90° Square)

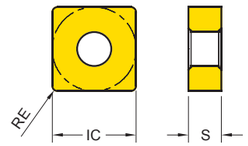


Series	IC	S
SN** 32	3/8	1/8
SN** 43	1/2	3/16
SN** 54	5/8	1/4
SN** 64	3/4	1/4
SN** 85	1	5/16
SN** 86	1	3/8

EDP 2200.. ●: Stock item ○: Order made item

SNMG		Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15 M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- MF	Stainless steel Finishing	SNMG431 - MF	.016	.003 ~ .012	.008 ~ .059										● 0978	● 0979	● 0981	○ 2276			
		SNMG432 - MF	.031	.003 ~ .012	.008 ~ .059							○ 0818		● 2459	● 0653	● 0654	● 0817	○ 2277			
		SNMG433 - MF	.047	.003 ~ .012	.008 ~ .059							○ 0821		● 2460	● 0655	● 0656	● 0820	○ 2278			
- MM	Stainless steel Medium	SNMG432 - MM	.031	.008 ~ .014	.039 ~ .138										● 0555	● 0556	● 1014	○ 2295			
		SNMG433 - MM	.047	.008 ~ .014	.059 ~ .138										● 0565	● 0566	● 1789	○ 2296			
- MG	Stainless steel General	SNMG431 - MG	.016	.008 ~ .016	.020 ~ .157									● 2485							
		SNMG432 - MG	.031	.008 ~ .016	.039 ~ .157									● 2475	● 1804	● 1805	● 1806	● 1695			
		SNMG433 - MG	.047	.008 ~ .016	.059 ~ .157									● 2486							
- MR	Stainless steel Roughing	SNMG432 - MR	.031	.012 ~ .022	.079 ~ .217							○ 1059		● 2495	● 0657	● 0658	● 0819				
		SNMG433 - MR	.047	.012 ~ .022	.079 ~ .217							○ 0823		● 2496	● 0659	● 0660	● 0822				
		SNMG434 - MR	.063	.012 ~ .022	.079 ~ .217									● 2497							

SNMG (90° Square)



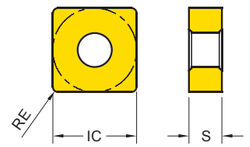
Series	IC	S
SN** 32	3/8	1/8
SN** 43	1/2	3/16
SN** 54	5/8	1/4
SN** 64	3/4	1/4
SN** 85	1	5/16
SN** 86	1	3/8

EDP 2200.. ●: Stock item ○: Order made item

SNMG		Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- SM	HRSA Medium	SNMG321 - SM	.016	.006 ~ .012	.020 ~ .118										○ 2434			● 2435			
		SNMG432 - SM	.031	.006 ~ .012	.020 ~ .118										○ 1801	○ 1802	○ 1803	● 1696			
- SR	HRSA Roughing	SNMG432 - SR	.031	.012 ~ .022	.079 ~ .217													● 1305			
		SNMG433 - SR	.047	.012 ~ .022	.079 ~ .217													● 1304			

Turning Inserts - Negative

SNMG / SNMM - Heavy Turning (90° Square)

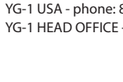


Series	IC	S
SN** 32	3/8	1/8
SN** 43	1/2	3/16
SN** 54	5/8	1/4
SN** 64	3/4	1/4
SN** 85	1	5/16
SN** 86	1	3/8

EDP 2200.. ●: Stock item ○: Order made item

SNMG SNMM	Designation	RE	Fn (In/rev.)	Ap (In)	K10 YG1010	P05 K20 YG1001	P10 K30 YG3010	P15 YG3015	P10 YG3115	P20 YG3020	P30 YG3030	P20 YG801	M25 YG2025	M15 YG211	M30 YG213	M40 S30 YG214	S10 YG401	P15 M15 K15 YT100	N20 YG100	N20 YG10
NEW - UH	SNMM543 - UH	.047	.014 ~ .024	.079 ~ .217						● 2331	● 2332									
	SNMM643 - UH	.047	.014 ~ .028	.059 ~ .354	● 2123		● 2124			● 2125	● 2126									
	SNMM644 - UH	.063	.014 ~ .028	.079 ~ .354	● 2127		● 2128			● 2129	● 2130									
	SNMM646 - UH	.094	.014 ~ .028	.118 ~ .354	● 2131		● 2132			● 2133	● 2134									
	SNMM866 - UH	.094	.016 ~ .031	.118 ~ .394	● 2135		● 2136			● 2137	● 2138									
- UR	SNMG866 - UR	.094	.016 ~ .039	.197 ~ .472						● 1370	● 1366									
NEW - UT	SNMM543 - UT	.047	.018 ~ .028	.079 ~ .236						● 2333	● 2334									
	SNMM643 - UT	.047	.020 ~ .039	.118 ~ .472	● 2153		● 2154			● 2155	● 2156									
	SNMM644 - UT	.063	.020 ~ .039	.157 ~ .472	● 2157		● 2158			● 2159	● 2160									
	SNMM646 - UT	.094	.020 ~ .039	.236 ~ .472	● 2161		● 2018			● 2162	● 2163									
	SNMM856 - UT	.094	.022 ~ .047	.236 ~ .512			● 1255			● 0841	● 0842									
	SNMM866 - UT	.094	.022 ~ .047	.236 ~ .512	● 2164		● 1626			● 1627	● 1213									

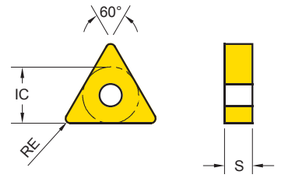
Low cutting force


Roughing


Heavy Roughing

Turning Inserts - Negative

TNMA / TNMG (60° Triangle)



Series	IC	S
TN** 33	3/8	3/16
TN** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

TNMA TNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10 YG1010	P05 K20 YG1001	P10 K30 YG3010	P15 YG3015	P10 YG3115	P20 YG3020	P30 YG3030	P20 YG801	M25 YG2025	M15 YG211	M30 YG213	M40 S30 YG214	S10 YG401	P15 M15 K15 YT100	N20 YG100	N20 YG10
..MA	TNMA331	.016	.006 ~ .020	.020 ~ .197	● 1582	○ 1446	○ 1448													
	TNMA332	.031	.006 ~ .020	.039 ~ .197	● 1486	○ 0035	○ 1191													
	TNMA333	.047	.006 ~ .020	.059 ~ .197	● 1485	○ 0036	○ 1192													
- UF	TNMG331 - UF	.016	.002 ~ .010	.020 ~ .098			○ 0270		● 2363	● 0271	● 0272	○ 0039								
	TNMG332 - UF	.031	.002 ~ .010	.039 ~ .098			○ 0276		● 2217	● 0277	● 0278									
	TNMG333 - UF	.047	.002 ~ .010	.059 ~ .098			○ 0721		● 2645	● 0588	● 1197									
	TNMG431 - UF	.016	.004 ~ .014	.020 ~ .157			○ 0407		● 2409	● 1203	● 1205	○ 0042								
- UL	TNMG331 - UL	.016	.004 ~ .012	.020 ~ .118			○ 1605		● 2643	● 1606	● 1607									
	TNMG332 - UL	.031	.004 ~ .012	.039 ~ .118			○ 0279	○ 0752	● 2374	● 0280	● 0281									
	TNMG333 - UL	.047	.004 ~ .012	.059 ~ .118			○ 0884	○ 0868	● 2586	● 0621	● 1198									
- UM	TNMG331 - UM	.016	.006 ~ .012	.020 ~ .118	○ 1669	○ 0949	○ 0948	○ 0844	● 2644	● 0952	● 0954									
	TNMG332 - UM	.031	.006 ~ .012	.039 ~ .118	○ 1141	○ 1053	○ 0282	○ 0758	● 2195	● 0283	● 0284									
	TNMG333 - UM	.047	.006 ~ .012	.059 ~ .118	○ 1143	○ 0596	○ 0597	○ 0760	● 2587	● 0586	● 0710									
- UG	TNMG331 - UG	.016	.008 ~ .016	.020 ~ .118	● 1620	○ 0458	○ 0273		● 2171	● 0274	● 0275									
	TNMG332 - UG	.031	.008 ~ .016	.039 ~ .118	● 1140	○ 0459	○ 0144	○ 0757	● 2182	● 0145	● 0146	○ 0037								
	TNMG333 - UG	.047	.008 ~ .016	.059 ~ .118	● 1142	○ 0605	○ 0606	○ 0759	● 2200	● 0587	● 0939									
	TNMG432 - UG	.031	.010 ~ .024	.039 ~ .236	● 1641	○ 1061	○ 0285		● 2394	● 0286	● 0287	○ 0040								
	TNMG433 - UG	.047	.010 ~ .024	.059 ~ .236	● 1642	○ 1526	○ 1527		● 2694	● 1528	● 1529									
	TNMG434 - UG	.063	.010 ~ .024	.079 ~ .236	● 1647	○ 1209	○ 0851	○ 0863	● 2695	● 0852	● 1263									
- UC	TNMG331 - UC	.016	.008 ~ .016	.020 ~ .157	● 1316	○ 0399	○ 0400		● 2423	● 0401	● 0402									
	TNMG332 - UC	.031	.008 ~ .016	.039 ~ .157	● 0901	○ 0075	○ 0129		● 2382	● 0108	● 0130									
	TNMG333 - UC	.047	.008 ~ .016	.059 ~ .157	● 0902	○ 0076	○ 0131		● 2413	● 0109	● 0132									
	TNMG434 - UC	.063	.008 ~ .016	.079 ~ .157					● 1507											
- UR	TNMG332 - UR	.031	.012 ~ .020	.039 ~ .197	● 0880	○ 0680	○ 0669		● 2395	● 0670	● 1054									
	TNMG333 - UR	.047	.012 ~ .020	.059 ~ .197	● 1657	○ 0602	○ 0404	○ 0888	● 2406	● 0405	● 0406	○ 0038								
	TNMG433 - UR	.047	.012 ~ .026	.059 ~ .276	● 1639	○ 0408	○ 0409		● 2403	● 0410	● 0411	○ 0041								
	TNMG434 - UR	.063	.012 ~ .026	.079 ~ .276	● 1658	○ 0460	○ 0461		● 2696	● 0696	● 0711									


Cast iron


Finishing

Light Machining and Sticky Material

Medium Machining Unstable condition

Medium Machining at stable condition

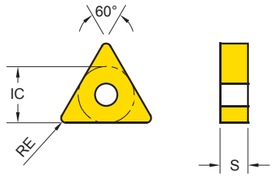
Cast iron and Medium roughing

Roughing

Turning Inserts - Negative

TNMG (60˚ Triangle)

Series	IC	S
TN** 33	3/8	3/16
TN** 43	1/2	3/16



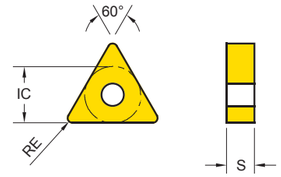
EDP 2200.. ●: Stock item ○: Order made item

TNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- MF  Stainless steel Finishing	TNMG331 - MF	.016	.003 ~ .012	.008 ~ .059										● 0824	● 0775	● 1457	○ 1343			
	TNMG332 - MF	.031	.003 ~ .012	.008 ~ .059						○ 0963			● 2458	● 0589	● 0776	● 0825	○ 1285			
- MM  Stainless steel Medium	TNMG331 - MM	.016	.008 ~ .014	.020 ~ .138										● 0567	● 0568	● 1790	○ 2297			
	TNMG332 - MM	.031	.008 ~ .014	.039 ~ .138										● 0569	● 0570	● 0913	○ 1281			
	TNMG333 - MM	.047	.008 ~ .014	.059 ~ .138										● 0611	● 0603	● 1791	○ 1288			
- MG  Stainless steel General	TNMG331 - MG	.016	.008 ~ .016	.020 ~ .157									● 2472	● 1455	● 1456	● 1219	● 1515			
	TNMG332 - MG	.031	.008 ~ .016	.039 ~ .157									● 2473	● 1568	● 1569	● 1713	● 1660			
	TNMG333 - MG	.047	.008 ~ .020	.079 ~ .157									● 2474	● 2104	● 2105	● 2103	● 2054			
- MR  Stainless steel Roughing	TNMG332 - MR	.031	.012 ~ .022	.079 ~ .217							○ 0727		● 2493	● 0826	● 0985	● 0726				
	TNMG333 - MR	.047	.012 ~ .022	.079 ~ .217							○ 1062		● 2494	● 0995	● 0827	● 0828				

Turning Inserts - Negative

TNGG / TNMG (60˚ Triangle)

Series	IC	S
TN** 33	3/8	3/16
TN** 43	1/2	3/16

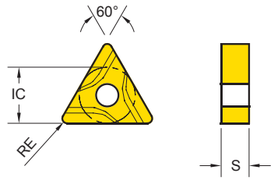


EDP 2200.. ●: Stock item ○: Order made item

TNGG TNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- SF  Stainless steel Finishing	TNMG332 - SF	.031	.004 ~ .010	.008 ~ .039													● 1427			
- SM  Stainless steel Medium	TNMG332 - SM	.031	.006 ~ .012	.020 ~ .118										○ 1575	○ 1576	○ 1577	● 1228			
	TNMG333 - SM	.047	.006 ~ .012	.020 ~ .118										○ 1635	○ 1636	○ 1858	● 1508			
- SR  HRSA Roughing	TNMG332 - SR	.031	.012 ~ .022	.079 ~ .217													● 1307			
	TNMG333 - SR	.047	.012 ~ .022	.079 ~ .217													● 1306			
NEW - PSF  Cermet Finishing	TNMG331 - PSF	.016	.003 ~ .012	.016 ~ .098													● 2535			
	TNMG332 - PSF	.031	.004 ~ .014	.024 ~ .098													● 2536			
NEW - C  Cermet Medium Left Hand Shown	TNGG330.5L - C	.008	.008 ~ .016	.012 ~ .138													○ 2524			
	TNGG331L - C	.016	.008 ~ .016	.020 ~ .138													○ 2526			
	TNGG332L - C	.031	.008 ~ .016	.039 ~ .138													○ 2528			
NEW - C  Cermet Medium Right Hand Shown	TNGG330.5R - C	.008	.008 ~ .016	.012 ~ .138													○ 2525			
	TNGG331R - C	.016	.008 ~ .016	.020 ~ .138													○ 2527			
	TNGG332R - C	.031	.008 ~ .016	.039 ~ .138													○ 2529			

Turning Inserts - Negative

TNUX (60° Triangle)



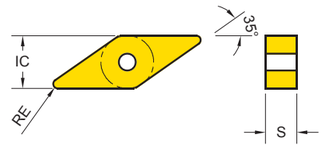
Series	LE	IC	S
TNUX 33	.370	3/8	3/16

EDP 2200.. ●: Stock item ○: Order made item

TNUX	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..UX  Left Hand Shown	TNUX331L	.016	.004 ~ .012	.020 ~ .157			○ 0412		● 2425	● 0413	● 1264	○ 0043								
	TNUX332L	.031	.004 ~ .016	.039 ~ .197			○ 0414		● 2198	● 0415	● 0675	○ 0045		○ 0731						
..UX  Right Hand Shown	TNUX331R	.016	.004 ~ .012	.020 ~ .157			○ 0288		● 2390	● 0289	● 0290	● 0044								
	TNUX332R	.031	.004 ~ .016	.039 ~ .197			○ 0291		● 2354	● 0292	● 0293	● 0046								

Turning Inserts - Negative

VNMA / VNMG (35° Rhombic)

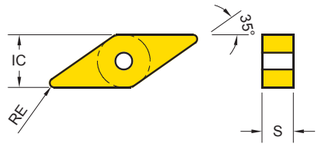


Series	IC	S
VN** 33	3/8	3/16

EDP 2200.. ●: Stock item ○: Order made item

VNMA VNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..MA  Cast iron	VNMA332	.031	.006 ~ .016	.039 ~ .197	● 1573	○ 0162	○ 1275													
- UF  Finishing	VNMG331 - UF	.016	.002 ~ .010	.020 ~ .098			○ 0306		● 2205	● 0307	● 0308	○ 0049								
	VNMG332 - UF	.031	.002 ~ .010	.039 ~ .098			○ 0309		● 2207	● 0310	● 0311									
- UL  Light Machining and Sticky Material	VNMG331 - UL	.016	.004 ~ .012	.020 ~ .118			○ 0886		● 2412	● 0912	● 0723									
	VNMG332 - UL	.031	.004 ~ .012	.039 ~ .118			○ 0428	○ 0790	● 2202	● 0429	● 0853									
	VNMG333 - UL	.047	.004 ~ .012	.059 ~ .118					● 2431											
- UM  Medium Machining Unstable condition	VNMG332 - UM	.031	.006 ~ .012	.039 ~ .118			○ 1357	○ 1359		● 2424	● 1361	● 1362								
	VNMG333 - UM	.047	.006 ~ .012	.059 ~ .118			○ 1230	○ 0736	○ 0870	● 2701	● 0737	● 1214								
- UG  Medium Machining at stable condition	VNMG331 - UG	.016	.008 ~ .016	.020 ~ .118	● 1648	○ 1331	○ 0993		● 2420	● 0940	● 0994									
	VNMG332 - UG	.031	.008 ~ .016	.039 ~ .118	● 1000	○ 0462	○ 0312		● 2176	● 0313	● 0314	○ 0050								
	VNMG333 - UG	.047	.008 ~ .016	.059 ~ .118	● 1659	○ 1345	○ 0931		● 2407	● 0927	● 0917									
- UC  Cast iron and Medium roughing	VNMG331 - UC	.016	.008 ~ .016	.020 ~ .138	● 1612	○ 0885	○ 0423		● 2366	● 1276	● 1277									
	VNMG332 - UC	.031	.008 ~ .016	.039 ~ .138	● 0980	○ 0094	○ 0424		● 2210	● 0425	● 0426									
	VNMG333 - UC	.047	.008 ~ .016	.059 ~ .138	● 1587	○ 1381	○ 1392		● 2700	● 1382	● 1384									
- UR  Roughing	VNMG333 - UR	.047	.012 ~ .018	.059 ~ .157	● 1638	○ 1231	○ 0430	○ 0871	● 2380	● 0431	● 0432	○ 0051								

VNMG (35° Rhombic)

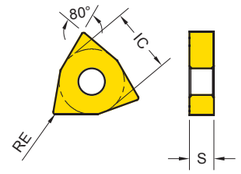


Series	IC	S
VN** 33	3/8	3/16

EDP 2200.. ●: Stock item ○: Order made item

VNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15 M30	M40 S30	S10	P15 M15 K15	N20	N20	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- MF	VNMG331 - MF	.016	.003 ~ .012	.008 ~ .059																								0782	1019	2267	2019			
Stainless steel Finishing	VNMG332 - MF	.031	.003 ~ .012	.008 ~ .059							○ 0830		● 2464	● 0829	● 0947	● 2283	○ 2099																		
- MM	VNMG331 - MM	.016	.008 ~ .014	.020 ~ .138																								● 0661	● 0662	● 1792	○ 2298			
Stainless steel Medium	VNMG332 - MM	.031	.008 ~ .014	.039 ~ .138																								● 0663	● 0664	● 1793	○ 2299			
- MG	VNMG331 - MG	.016	.008 ~ .016	.020 ~ .157									● 2489																					
Stainless steel Genera	VNMG332 - MG	.031	.008 ~ .016	.039 ~ .157									● 2490																					
	VNMG333 - MG	.047	.008 ~ .016	.059 ~ .157									● 2491																					
- MR	VNMG332 - MR	.031	.012 ~ .022	.079 ~ .217							○ 0832		● 2500	● 1020	● 0831	● 2304																		
Stainless stee Roughing																																		
- SR	VNMG332 - SR	.031	.012 ~ .022	.079 ~ .217													● 1449																	
HRSA Medium																																		
NEW - PSF	VNMG331 - PSF	.016	.003 ~ .012	.012 ~ .079													● 2537																	
Cermet Finishing	VNMG332 - PSF	.031	.004 ~ .014	.020 ~ .079													● 2538																	

WNMA / WNMG (80° Trigon)

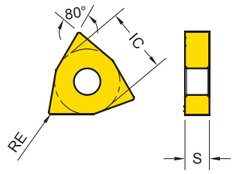


Series	IC	S
WN** 33	3/8	3/16
WN** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

WNMA WNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
..MA	WNMA431	.016	.006 ~ .020	.020 ~ .197																	● 0903	○ 0052	○ 1262												
Cast iron	WNMA432	.031	.006 ~ .020	.039 ~ .197																	● 0904	○ 0053	○ 0433												
	WNMA433	.047	.006 ~ .020	.059 ~ .197																	● 0905	○ 0054	○ 0434												
- UF	WNMG331 - UF	.016	.002 ~ .008	.020 ~ .079																			○ 0435		● 2415	● 0436	● 0437	○ 0058							
Finishing	WNMG431 - UF	.016	.002 ~ .010	.020 ~ .098																			○ 0315		● 2389	● 0316	● 0317	○ 0055							
	WNMG432 - UF	.031	.002 ~ .010	.039 ~ .098																			○ 0321		● 2173	● 0322	● 0323								
	WNMG433 - UF	.047	.002 ~ .010	.059 ~ .098																			○ 1424		● 2708	● 1410	● 1411								
- UL	WNMG332 - UL	.031	.004 ~ .012	.039 ~ .098																			○ 0439		● 2588	● 0440	● 0441								
Light Machining and Sticky Material	WNMG431 - UL	.016	.004 ~ .012	.020 ~ .118																			○ 1431		● 2703	● 1434	● 1438								
	WNMG432 - UL	.031	.004 ~ .012	.039 ~ .118																			○ 0324		● 2177	● 0325	● 0326								
	WNMG433 - UL	.047	.004 ~ .012	.059 ~ .118																					● 2448	● 1435									
- UM	WNMG331 - UM	.016	.006 ~ .012	.020 ~ .098																	○ 2106	○ 1259	○ 0741		● 2418	● 0785	● 0742								
Medium Machining Unstable condition	WNMG332 - UM	.031	.006 ~ .012	.039 ~ .098																	○ 1554	○ 1260	○ 0600		● 2402	● 0601	● 1271								
	WNMG431 - UM	.016	.006 ~ .012	.020 ~ .118																		○ 1313	○ 0786		● 2704	● 0787	● 0788								
	WNMG432 - UM	.031	.006 ~ .012	.039 ~ .118																		○ 0470	○ 0327	○ 0761	● 2170	● 0328	● 0329								
	WNMG433 - UM	.047	.006 ~ .012	.059 ~ .118																		○ 1210	○ 0649	○ 0762	● 2417	● 0598	● 0712								
	WNMG434 - UM	.063	.006 ~ .012	.079 ~ .118																		○ 1234	○ 0593	○ 0763	● 2574	● 0584	● 0713								

WNMG (80° Trigon)



Series	IC	S
WN** 33	3/8	3/16
WN** 43	1/2	3/16

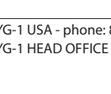
EDP 2200.. ●: Stock item ○: Order made item

WNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- UG	WNMG332 - UG	.031	.008 ~ .016	.039 ~ .098	● 1649	○ 0697	○ 1047		● 2428	● 0438	● 0874	○ 0059								
	WNMG431 - UG	.016	.008 ~ .016	.020 ~ .118	● 1580	○ 1232	○ 0318		● 2392	● 0319	● 0320									
	WNMG432 - UG	.031	.008 ~ .016	.039 ~ .118	● 0908	○ 0463	○ 0147	○ 0582	● 2194	● 0148	● 0149	○ 0056								
	WNMG433 - UG	.047	.008 ~ .016	.059 ~ .118	● 0910	○ 0466	○ 0503	○ 0648	● 2167	● 0490	● 0941									
	WNMG434 - UG	.063	.008 ~ .016	.079 ~ .118	● 1643	○ 1233	○ 1056	○ 0764	● 2575	● 0583	● 1238									
- PWM	WNMG432 - PWM	.031	.004 ~ .020	.031 ~ .138					● 2706											
- UC	WNMG332 - UC	.031	.008 ~ .016	.039 ~ .118	● 1444	○ 0095	○ 0875		● 2421	● 0876	● 0724									
	WNMG431 - UC	.016	.008 ~ .016	.020 ~ .157	● 0906	○ 0097	○ 0133		● 2367	● 0110	● 0134									
	WNMG432 - UC	.031	.008 ~ .016	.039 ~ .157	● 0907	○ 0077	○ 0135	○ 0733	● 2186	● 0111	● 0136									
	WNMG433 - UC	.047	.008 ~ .016	.059 ~ .157	● 0909	○ 0078	○ 0137	○ 0630	● 2168	● 0112	● 0138									
	WNMG434 - UC	.063	.008 ~ .016	.079 ~ .157	● 1187	○ 1055	○ 1235		● 2709	● 1236	● 0743									
- UR	WNMG333 - UR	.047	.012 ~ .020	.059 ~ .157	● 1317	○ 1066	○ 1057		● 2702	● 1058	● 1060									
	WNMG432 - UR	.031	.012 ~ .020	.039 ~ .197	● 1613	○ 0464	○ 0465		● 2353	● 0471	● 0472									
	WNMG433 - UR	.047	.012 ~ .020	.059 ~ .197	● 1614	○ 0467	○ 0442	○ 0631	● 2184	● 0443	● 0444	○ 0057								
	WNMG434 - UR	.063	.012 ~ .020	.079 ~ .197	● 1637	○ 0468	○ 0469	○ 0889	● 2359	● 0725	● 0714									
- KR	WNMG432 - KR	.031	.012 ~ .024	.039 ~ .197	● 0932	○ 0720	○ 1038		● 2705											
	WNMG433 - KR	.047	.012 ~ .024	.059 ~ .197	● 0933	○ 0522	○ 0542		● 2707											

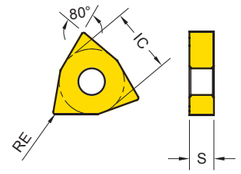

Cast iron and Medium roughing


Roughing


Cast Iron Heavy Roughing


Wiper - Medium

WNMG (80° Trigon)



Series	IC	S
WN** 33	3/8	3/16
WN** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

WNMG	Designation	RE	Fn (In/rev.)	Ap (In)	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- MF	WNMG331 - MF	.016	.003 ~ .012	.016 ~ .079			○ 0833				○ 0996		● 2461	● 1215	● 1217	● 2284	○ 2279			
	WNMG332 - MF	.031	.003 ~ .012	.031 ~ .079									● 1216	● 1218	● 2285	○ 2280				
	WNMG431 - MF	.016	.003 ~ .012	.016 ~ .098							○ 0834		● 2462	● 0667	● 0668	● 0970	○ 2281			
	WNMG432 - MF	.031	.003 ~ .012	.031 ~ .098							○ 1098		● 2463	● 0617	● 0618	● 2268	○ 2282			
- MM	WNMG431 - MM	.016	.008 ~ .014	.020 ~ .138										● 0571	● 0572	● 2300	○ 2301			
	WNMG432 - MM	.031	.008 ~ .014	.039 ~ .138							○ 0491			● 0497	● 0498	● 0633	○ 2302			
	WNMG433 - MM	.047	.008 ~ .014	.059 ~ .138										● 0612	● 0615	● 1926	○ 2303			
- MG	WNMG331 - MG	.016	.008 ~ .016	.020 ~ .118									● 2487							
	WNMG332 - MG	.031	.008 ~ .016	.039 ~ .118									● 2476							
	WNMG333 - MG	.047	.008 ~ .016	.059 ~ .118									● 2477							
	WNMG431 - MG	.016	.008 ~ .016	.020 ~ .157									● 2488							
	WNMG432 - MG	.031	.008 ~ .016	.039 ~ .157									● 2478	● 1496	● 1497	● 1160	● 1498			
	WNMG433 - MG	.047	.008 ~ .016	.059 ~ .157									● 2479	● 1499	● 1500	● 1161	● 1501			
- MR	WNMG333 - MR	.047	.012 ~ .022	.047 ~ .157							○ 1154		● 2498	● 0616	● 1787	● 1896				
	WNMG432 - MR	.031	.012 ~ .022	.079 ~ .217							○ 1099		● 2499	● 0619	● 0620	● 0835				
	WNMG433 - MR	.047	.012 ~ .022	.079 ~ .217							○ 0837		● 2482	● 0665	● 0666	● 0836				


Stainless steel Finishing

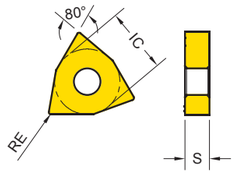

Stainless steel Medium


Stainless steel General


Stainless steel Roughing

Turning Inserts - Negative

WNGG / WNMG (80° Trigon)



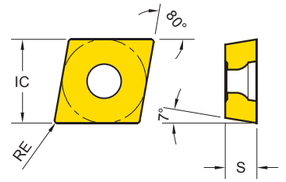
Series	IC	S
WN** 33	3/8	3/16
WN** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

WNGG WNMG	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- SF	WNGG432 - SF	.031	.004 ~ .010	.008 ~ .039													● 1308			
HRSA Finishing																				
- SM	WNMG432 - SM	.031	.006 ~ .012	.020 ~ .118										○ 1199	○ 1206	○ 1859	● 1311			
	WNMG433 - SM	.047	.006 ~ .012	.020 ~ .118										○ 1374	○ 1416	○ 1860	● 1312			
HRSA Medium																				
- SR	WNMG333 - SR	.047	.012 ~ .022	.079 ~ .157													● 1439			
	WNMG432 - SR	.031	.012 ~ .022	.079 ~ .217													● 1310			
	WNMG433 - SR	.047	.012 ~ .022	.079 ~ .217													● 1309			
HRSA Roughing																				
NEW - PSF	WNMG431 - PSF	.016	.003 ~ .012	.016 ~ .098														● 2539		
	WNMG432 - PSF	.031	.004 ~ .014	.024 ~ .098														● 2540		
Cermet Finishing																				

Turning Inserts - Positive

CCGT / CCMT (80° Rhombic)



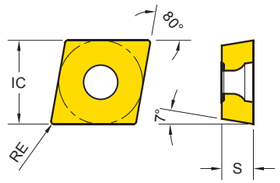
Series	IC	S
CC** 21.5	1/4	3/32
CC** 32.5	3/8	5/32
CC** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

CCGT CCMT	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- AL	CCGT21.50.5 - AL	.008	.000 ~ .005	.002 ~ .118																● 1398
	CCGT21.51 - AL	.016	.001 ~ .006	.004 ~ .118															● 1278	● 1320
	CCGT32.50.5 - AL	.008	.001 ~ .008	.002 ~ .118															● 03400	● 0339
	CCGT32.51 - AL	.016	.001 ~ .012	.004 ~ .197															● 03300	● 0081
	CCGT32.52 - AL	.031	.001 ~ .020	.004 ~ .197															● 0331	● 0082
	CCGT430.5 - AL	.008	.001 ~ .012	.002 ~ .157															● 04740	● 0473
	CCGT431 - AL	.016	.001 ~ .020	.004 ~ .197															● 04760	● 0475
	CCGT432 - AL	.031	.002 ~ .031	.004 ~ .217															● 04780	● 0477
Aluminum																				
- UF	CCMT21.51 - UF	.016	.002 ~ .008	.020 ~ .079			○ 0163	○ 0866	● 2365	● 0164	● 0165									
	CCMT32.51 - UF	.016	.002 ~ .010	.020 ~ .079			○ 0169		● 2371	● 0170	● 0171									
	CCMT32.52 - UF	.031	.002 ~ .010	.039 ~ .079			○ 0964		● 2578	● 0951	● 0953									
	CCMT431 - UF	.016	.004 ~ .010	.039 ~ .197					● 2579	● 1347	● 1337									
Finishing																				
- UG	CCMT21.51 - UG	.016	.004 ~ .010	.020 ~ .079	● 1377		○ 0166		● 2357	● 0167	● 0168	○ 0006				○ 1900				
	CCMT21.52 - UG	.031	.004 ~ .010	.031 ~ .079	● 1825		○ 0479		● 2378	● 0683	● 0684	○ 0009				○ 1901				
	CCMT32.51 - UG	.016	.006 ~ .012	.020 ~ .098	● 1844		○ 0172		● 2206	● 0173	● 0174	○ 0007				○ 1586				
	CCMT32.52 - UG	.031	.006 ~ .012	.031 ~ .098	● 1553	○ 0445	○ 0150		● 2180	● 0151	● 0152	○ 0008	○ 1908			○ 1902				
	CCMT431 - UG	.016	.006 ~ .014	.020 ~ .118	● 1845		○ 0175		● 2399	● 0176	● 0177									
	CCMT432 - UG	.031	.006 ~ .014	.031 ~ .118	● 1462		○ 0153	○ 0867	● 2183	● 0154	● 0155	○ 0005				○ 1125				
	CCMT433 - UG	.047	.006 ~ .014	.047 ~ .118	● 1846		○ 0483		● 2580	● 0915	● 1135					○ 1126				
General																				

Turning Inserts - Positive

CCGT / CCMT (80° Rhombic)



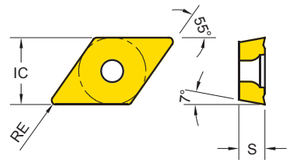
Series	IC	S
CC** 21.5	1/4	3/32
CC** 32.5	3/8	5/32
CC** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

CCGT CCMT		Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
		CCGT21.50 - SF	.004	.001 ~ .006	.004 ~ .059												● 2341	● 2065			● 1399
		CCGT21.50.5 - SF	.008	.001 ~ .006	.004 ~ .059												● 2080	● 2066			● 1400
NEW - SF	HRSA Finishing	CCGT21.51 - SF	.016	.001 ~ .008	.004 ~ .094												● 2086	● 2067		● 2101	● 2100
		CCGT32.50 - SF	.004	.001 ~ .006	.004 ~ .098												● 2339	● 2071		● 03420	● 0341
		CCGT32.50.5 - SF	.008	.001 ~ .006	.004 ~ .098												● 2340	● 2072		● 03320	● 0083
		CCGT32.51 - SF	.016	.001 ~ .008	.004 ~ .098												● 2093	● 2073		● 03330	● 0084
		CCGT32.52 - SF	.031	.001 ~ .010	.004 ~ .098												● 2096	● 2074			
		CCMT21.52 - MF	.031	.002 ~ .008	.003 ~ .079										● 2352	● 2439	● 2440	● 2351			
NEW - MF	Stainless steel Finishing	CCMT32.50.5 - MF	.008	.002 ~ .006	.003 ~ .079									● 2501	● 2002	● 2003	● 2004	● 2028			
		CCMT32.51 - MF	.016	.002 ~ .010	.004 ~ .079									● 2502	● 1589	● 1590	● 1947	● 2029			
		CCMT32.52 - MF	.031	.003 ~ .012	.006 ~ .079									● 2503	● 1957	● 1958	● 1959	● 1943			
		CCMT32.51 - MM	.016	.003 ~ .010	.010 ~ .118									● 2514	● 1591	● 1592	● 1946	● 2039			
NEW - MM	Stainless steel Medium	CCMT32.52 - MM	.031	.004 ~ .012	.020 ~ .118									● 2515	● 1887	● 1888	● 1956	● 1944			
		CCMT32.50.5 - PF	.008	.002 ~ .006	.003 ~ .079														● 2541		
NEW - PF	Cermet Finishing	CCMT32.51 - PF	.016	.002 ~ .010	.004 ~ .079														● 2542		
		CCMT32.52 - PF	.031	.003 ~ .012	.006 ~ .079														● 2543		
		CCMT32.51 - PM	.016	.003 ~ .010	.010 ~ .118														● 2554		
NEW - PM	Cermet Medium	CCMT32.52 - PM	.031	.004 ~ .012	.020 ~ .118														● 2555		

Turning Inserts - Positive

DCGT / DCMT (55° Rhombic)



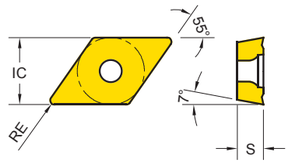
Series	IC	S
DC** 21.5	1/4	3/32
DC** 32.5	3/8	5/32

EDP 2200.. ●: Stock item ○: Order made item

DCGT DCMT		Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
		DCGT21.50.5 - AL	.008	.000 ~ .008	.002 ~ .118																● 1399
		DCGT21.51 - AL	.016	.001 ~ .012	.004 ~ .157																● 1400
- AL	Aluminum	DCGT32.50 - AL	.004	.000 ~ .012	.002 ~ .157															● 2101	● 2100
		DCGT32.50.5 - AL	.008	.001 ~ .012	.002 ~ .157															● 03420	● 0341
		DCGT32.51 - AL	.016	.001 ~ .020	.004 ~ .197															● 03320	● 0083
		DCGT32.52 - AL	.031	.001 ~ .020	.004 ~ .197															● 03330	● 0084
		DCMT21.51 - UF	.016	.002 ~ .008	.020 ~ .079			○ 0207		● 2397	● 0208	● 0209			○ 1909		○ 1903				
		DCMT32.51 - UF	.016	.002 ~ .010	.020 ~ .079			○ 0213		● 2208	● 0214	● 0215			○ 1044	○ 1043	○ 1910				
- UF	Finishing	DCMT32.52 - UF	.031	.002 ~ .010	.039 ~ .079		● 2053	○ 0219		● 1897	● 0220	● 0221									
		DCMT21.51 - UG	.016	.004 ~ .010	.020 ~ .079		● 1849	○ 0210		● 2391	● 0211	● 0212	○ 0013								
		DCMT21.52 - UG	.031	.004 ~ .010	.031 ~ .079		● 1850	○ 0484		● 2386	● 0717	● 1136									
- UG	General	DCMT32.51 - UG	.016	.006 ~ .012	.020 ~ .098		● 1831	○ 0677	○ 0216	● 2209	● 0217	● 0218	○ 0014		○ 1520	○ 1522	○ 1521				
		DCMT32.52 - UG	.031	.006 ~ .012	.031 ~ .098		● 1832	○ 0678	○ 0222	● 2215	● 0223	● 0224	○ 0015								
		DCMT32.53 - UG	.047	.006 ~ .014	.059 ~ .118					● 2605	● 2056										

Turning Inserts - Positive

DCGT / DCMT (55° Rhombic)



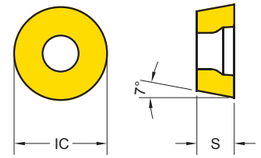
Series	IC	S
DC** 21.5	1/4	3/32
DC** 32.5	3/8	5/32

EDP 2200.. ●: Stock item ○: Order made item

DCGT DCMT	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
NEW - SF HRSA Finishing	DCGT21.50 - SF	.004	.001 ~ .006	.004 ~ .059												● 2342	● 2068			
	DCGT21.50.5 - SF	.008	.001 ~ .006	.004 ~ .059												● 2343	● 2069			
	DCGT21.51 - SF	.016	.001 ~ .008	.004 ~ .059											○ 2338	● 2344	● 2070			
	DCGT32.50 - SF	.004	.000 ~ .002	.004 ~ .098												● 2345	● 2075			
	DCGT32.50.5 - SF	.008	.001 ~ .006	.004 ~ .098										○ 0559	○ 0560	● 1478	● 1474			
	DCGT32.51 - SF	.016	.001 ~ .008	.004 ~ .098										○ 1460	○ 1473	● 1479	● 1463			
	DCGT32.52 - SF	.031	.001 ~ .008	.004 ~ .098												● 2346	● 2076			
NEW - MF  Stainless steel Finishing	DCMT21.51 - MF	.016	.002 ~ .007	.003 ~ .059									● 2504	● 1978	● 1979	● 1980	● 2030			
	DCMT32.50.5 - MF	.008	.002 ~ .006	.003 ~ .079									● 2505	● 2005	● 2006	● 2007	● 2031			
	DCMT32.51 - MF	.016	.002 ~ .010	.004 ~ .079									● 2506	● 1885	● 1886	● 1927	● 2032			
	DCMT32.52 - MF	.031	.003 ~ .008	.006 ~ .079									● 2507	● 1963	● 1964	● 1965	● 2033			
NEW - MM  Stainless steel Medium	DCMT21.51 - MM	.016	.003 ~ .012	.008 ~ .091									● 2516	● 1999	● 2000	● 2001	● 2040			
	DCMT21.52 - MM	.031	.003 ~ .010	.020 ~ .059							○ 1868									
	DCMT32.51 - MM	.016	.002 ~ .007	.010 ~ .118									● 2517	● 1990	● 1991	● 1992	● 2041			
	DCMT32.52 - MM	.031	.003 ~ .010	.020 ~ .118									● 2518	● 1984	● 1985	● 1986	● 2042			
NEW - PF  Cermet Finishing	DCMT21.51 - PF	.016	.002 ~ .007	.003 ~ .059														● 2544		
	DCMT32.50.5 - PF	.008	.002 ~ .006	.003 ~ .079														● 2545		
	DCMT32.51 - PF	.016	.002 ~ .010	.004 ~ .079														● 2546		
	DCMT32.52 - PF	.031	.003 ~ .008	.006 ~ .079														● 2547		
NEW - PM  Cermet Medium	DCMT21.51 - PM	.016	.003 ~ .012	.008 ~ .091														● 2556		
	DCMT32.51 - PM	.016	.002 ~ .007	.010 ~ .118														● 2557		
	DCMT32.52 - PM	.031	.003 ~ .010	.020 ~ .118														● 2558		

Turning Inserts - Positive

RCMT (Round)



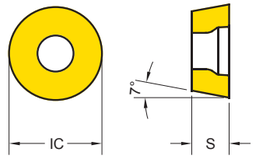
Series	INSD	S
RC** 0602	.236	3/32
RC** 0803	.315	1/8
RC** 10T3	.394	5/32
RC** 1204	.472	3/16
RC** 1606	.630	1/4
RC** 2006	.787	1/4

EDP 2200.. ●: Stock item ○: Order made item

RCMT	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
 General	RCMT0602M0	.118	.002 ~ .010	.008 ~ .047		● 2057	○ 0374	○ 0375		● 2624	● 0376	● 1151	○ 0023							
	RCMT0803M0	.157	.002 ~ .012	.020 ~ .059		● 2058	○ 0377	○ 0378		● 2625	● 0379	● 1152	○ 0024							
	RCMT10T3M0	.197	.004 ~ .014	.020 ~ .098		● 2059	○ 0380	○ 0381		● 2626	● 0382	● 1153	○ 0021							
	RCMT1204M0	.236	.006 ~ .018	.020 ~ .118		● 1833	○ 0383	○ 0384		● 2627	● 0385	● 1170	○ 0022							

Turning Inserts - Positive

RCMX - Heavy Turning (Round)



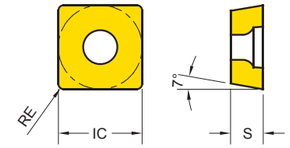
Series	INSD	S
RC** 0602	.236	3/32
RC** 0803	.315	1/8
RC** 10T3	.394	5/32
RC** 1204	.472	3/16
RC** 1606	.630	1/4
RC** 2006	.787	1/4

EDP 2200.. ●: Stock item ○: Order made item

RCMX	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
NEW - UT  Heavy Roughing	RCMX1606M0 - UT	.315	.012 ~ .031	.039 ~ .276	● 2441															
	RCMX2006M0 - UT	.394	.020~.051	.059 ~.354					● 2169											

Turning Inserts - Positive

SCGT / SCMT (Square)

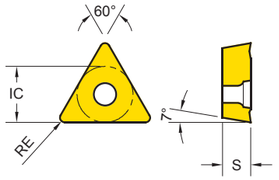


Series	IC	S
SC** 32.5	3/8	5/32
SC** 43	1/2	3/16

EDP 2200.. ●: Stock item ○: Order made item

SCGT SCMT	Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- AL  Aluminium	SCGT32.51 - AL	.016	.001 ~ .016	.004 ~ .197																● 1516
	SCGT32.52 - AL	.031	.002 ~ .016	.004 ~ .197																● 1517
- UF  Finishing	SCMT32.51 - UF	.016	.002 ~ .010	.020 ~ .079			○ 0386		● 2628	● 0387	● 0783									
	SCMT32.52 - UF	.031	.002 ~ .010	.039 ~ .079	● 2083		○ 1021		● 2629	● 1022	● 0997									
- UG  General	SCMT32.51 - UG	.016	.006 ~ .012	.020 ~ .098	● 1834	○ 0455	○ 0482		● 2414	● 0916	● 1171	○ 0025								
	SCMT32.52 - UG	.031	.006 ~ .012	.031 ~ .098	● 1835	○ 0456	○ 0159		● 2383	● 0160	● 0161	○ 0026				○ 1904				
	SCMT432 - UG	.031	.006 ~ .014	.031 ~ .118	● 1836	○ 0674	○ 0255		● 2393	● 0256	● 0257					○ 1911				
	SCMT433 - UG	.047	.006 ~ .014	.059 ~ .118	● 2098															
NEW - MF  Stainless steel Finishing	SCMT32.52 - MF	.031	.004 ~ .014	.012 ~ .079													● 2564			
NEW - MM  Stainless steel Medium	SCMT432 - MM	.031	.004 ~ .012	.024 ~ .157									● 2519	● 1973	● 1974	● 1975	● 1976			
NEW - PM  Cermet Medium	SCMT432 - PM	.031	.004 ~ .012	.024 ~ .157																● 2530

TCGT / TCMT (Triangle)

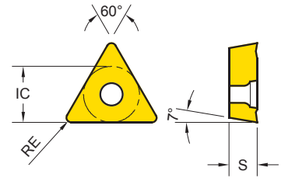


Series	IC	S
TC** 21.5	1/4	3/32
TC** 32.5	3/8	5/32

EDP 2200.. ●: Stock item ○: Order made item

TCGT TCMT		Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
- AL	Aluminum	TCGT21.51 - AL	.016	.001 ~ .012	.004 ~ .157																● 1333
		TCGT32.50.5 - AL	.008	.001 ~ .012	.002 ~ .197															● 0344	● 0343
		TCGT32.51 - AL	.016	.001 ~ .016	.004 ~ .217															● 0334	● 0085
		TCGT32.52 - AL	.031	.001 ~ .020	.004 ~ .217															● 0335	● 0086
- UF	Finishing	TCMT21.51 - UF	.016	.002 ~ .008	.020 ~ .079			○ 0395		● 2384	● 0396	● 1196			○ 1033	○ 1034	○ 1645				
		TCMT32.51 - UF	.016	.002 ~ .010	.020 ~ .079			○ 0397		● 2377	● 0398	● 1046	○ 0033		○ 1906		○ 1905				
		TCMT32.52 - UF	.031	.002 ~ .010	.031 ~ .079			○ 0624		● 2369	● 0625	● 1045									
- UG	General	TCMT21.51 - UG	.016	.004 ~ .010	.020 ~ .079	● 1839	○ 0728	○ 0264		● 2642	● 0265	● 0266	○ 0032								
		TCMT21.52 - UG	.031	.004 ~ .010	.031 ~ .079	● 1851		○ 0485		● 2362	● 0715	● 1204									
		TCMT32.51 - UG	.016	.006 ~ .012	.020 ~ .098	● 1840	○ 0679	○ 0267		● 2379	● 0268	● 0269									
		TCMT32.52 - UG	.031	.006 ~ .012	.031 ~ .098	● 1841	○ 0457	○ 0156		● 2175	● 0157	● 0158	○ 0034				○ 1907				

TCMT (Triangle)



Series	IC	S
TC** 21.5	1/4	3/32
TC** 32.5	3/8	5/32

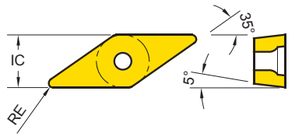
EDP 2200.. ●: Stock item ○: Order made item

TCMT		Designation	RE	Fn (In/rev.)	Ap (In)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
NEW - MF	Stainless steel Finishing	TCMT21.51 - MF	.016	.003 ~ .008	.008 ~ .079													● 2565			
		TCMT21.52 - MF	.031	.003 ~ .008	.012 ~ .079													● 2566			
		TCMT32.51 - MF	.016	.002 ~ .010	.004 ~ .079									● 2508	● 1981	● 1982	● 1983	● 2034			
		TCMT32.52 - MF	.031	.003 ~ .012	.006 ~ .079									● 2509	● 1966	● 1967	● 1968	● 2026			
NEW - MM	Stainless steel Medium	TCMT32.51 - MM	.016	.003 ~ .010	.010 ~ .118									● 2520	● 1993	● 1994	● 1995	● 2043			
		TCMT32.52 - MM	.031	.004 ~ .012	.020 ~ .118									● 2521	● 1952	● 1953	● 1954	● 1955			
NEW - PF	Cermet Medium	TCMT32.51 - PF	.016	.002 ~ .010	.004 ~ .079													● 2548			
		TCMT32.52 - PF	.031	.003 ~ .012	.006 ~ .079													● 2549			
NEW - PM	Cermet Medium	TCMT32.51 - PM	.016	.003 ~ .010	.010 ~ .118													● 2559			
		TCMT32.52 - PM	.031	.004 ~ .012	.020 ~ .118													● 2560			

Turning Inserts - Positive

VBGT / VBMT (35° Rhombic)

Series	IC	S
VB** 22	1/4	1/8
VB** 33	3/8	3/16



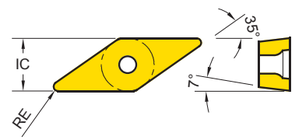
EDP 2200.. ●: Stock item ○: Order made item

VBGT VBMT	Designation	RE	Fn (In/rev.)	Ap (In)	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
					K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
NEW - SF  HRSA Finishing	VBGT220 - SF	.004	.000 ~ .008	.004 ~ .059												● 2432				
	VBGT220.5 - SF	.008	.001 ~ .008	.004 ~ .059												● 2433				
	VBGT221 - SF	.016	.002 ~ .008	.008 ~ .059												● 2358				
	VBGT331 - SF	.016	.002 ~ .008	.008 ~ .079													● 2350			
- UF  Finishing	VBMT221 - UF	.016	.002 ~ .006	.004 ~ .031					● 2697											
	VBMT222 - UF	.016	.002 ~ .006	.016 ~ .039					● 2698											
	VBMT331 - UF	.016	.002 ~ .010	.020 ~ .079			○ 0294		● 2364	● 0295	● 0296									
	VBMT332 - UF	.031	.002 ~ .010	.031 ~ .079			○ 0300		● 2216	● 0301	● 0302									
- UG  General	VBMT331 - UG	.016	.006 ~ .012	.020 ~ .098	● 1842	○ 0682	○ 0297		● 2181	● 0298	● 0299	○ 0047								
	VBMT332 - UG	.031	.006 ~ .012	.031 ~ .098	● 1843	○ 0681	○ 0303		● 2211	● 0304	● 0305	○ 0048								
NEW - MF  Stainless steel Finishing	VBMT330.5 - MF	.008	.002 ~ .006	.004 ~ .079									● 2510	● 2008	● 2009	● 2010	● 2036			
	VBMT331 - MF	.016	.002 ~ .008	.008 ~ .079									● 2511	● 1960	● 1961	● 1962	● 2037			
	VBMT332 - MF	.031	.003 ~ .011	.012 ~ .079									● 2512	● 2011	● 2012	● 2013	● 2038			
NEW - MM  Stainless steel Medium	VBMT331 - MM	.016	.003 ~ .008	.010 ~ .106									● 2522	● 1996	● 1997	● 1998	● 2044			
	VBMT332 - MM	.031	.003 ~ .011	.020 ~ .106									● 2523	● 1987	● 1988	● 1989	● 2045			
NEW - PF  Cermet Medium	VBMT330.5 - PF	.008	.002 ~ .006	.004 ~ .079														● 2550		
	VBMT331 - PF	.016	.002 ~ .008	.008 ~ .079														● 2551		
	VBMT332 - PF	.031	.003 ~ .011	.012 ~ .079														● 2552		
NEW - PM  Cermet Medium	VBMT331 - PM	.016	.003 ~ .008	.010 ~ .106														● 2561		
	VBMT332 - PM	.031	.003 ~ .011	.020 ~ .106														● 2562		

Turning Inserts - Positive

VCGT / VCMT (35° Rhombic)

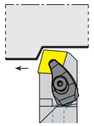
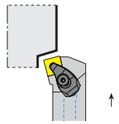
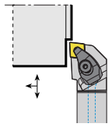
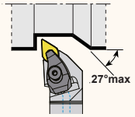
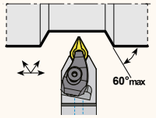
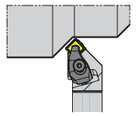
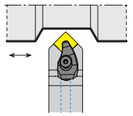
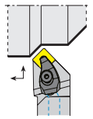
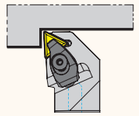
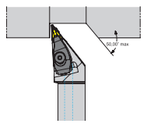
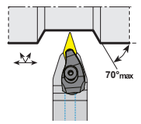
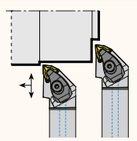
Series	IC	S
VC** 22	1/4	1/8
VC** 33	3/8	3/16



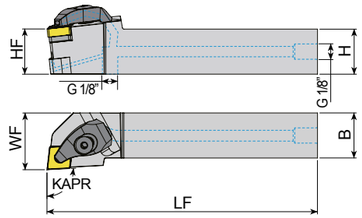
EDP 2200.. ●: Stock item ○: Order made item

VCGT VCMT	Designation	RE	Fn (In/rev.)	Ap (In)	YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
					K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
- AL  Aluminum	VCGT220 - AL	.004	.001 ~ .006	.002 ~ .118															● 2102	● 1041
	VCGT220.5 - AL	.008	.001 ~ .008	.002 ~ .118															● 1353	● 1042
	VCGT221 - AL	.016	.001 ~ .010	.004 ~ .157															● 1519	● 1518
	VCGT330.5 - AL	.008	.001 ~ .012	.002 ~ .197															● 0418	● 0417
	VCGT331 - AL	.016	.001 ~ .016	.004 ~ .197															● 0336	● 0087
	VCGT332 - AL	.031	.001 ~ .020	.004 ~ .197															● 0420	● 0419
	VCGT333 - AL	.047	.001 ~ .020	.004 ~ .197															● 2082	● 2081
NEW - SF  HRSA Finishing	VCGT220 - SF	.004	.000 ~ .008	.004 ~ .059												● 2347	● 2077			
	VCGT220.5 - SF	.008	.001 ~ .008	.004 ~ .059											○ 1475	○ 1476	● 1480	● 1481		
	VCGT221 - SF	.016	.002 ~ .008	.008 ~ .059												● 2348	● 2078			
	VCGT222 - SF	.031	.002 ~ .008	.016 ~ .059												● 2349	● 2079			
- UF  Finishing	VCMT331 - UF	.016	.002 ~ .010	.020 ~ .079			○ 0716		● 2385	● 0421	● 0955									
	VCMT332 - UF	.031	.002 ~ .010	.039 ~ .079			○ 0557		● 2699	● 0558										
- UG  General	VCMT331 - UG	.016	.004 ~ .008	.012 ~ .098							○ 0060									
	VCMT332 - UG	.031	.006 ~ .012	.031 ~ .098	● 1853	○ 0946			● 2422	● 0422	● 0956	○ 0061								
NEW - MF  Stainless steel Finishing	VCMT221 - MF	.016	.002 ~ .008	.004 ~ .067											● 2513	● 2014	● 2015	● 2016	● 2035	
NEW - PF  Cermet Medium	VCMT221 - PF	.016	.002 ~ .008	.004 ~ .067															● 2553	

External Holders Overview

Series	Turning Holder		
CNMA CNMG	 DCBNR/L Double Clamp	 DCKNR/L Double Clamp	 DCLNR/L Double Clamp
p. 30	p. 69	p. 69	p. 69
DNMA DNMG DNGG DNMM DNUX	 DDJNR/L Double Clamp	 DDNNN Double Clamp	
p. 35	p. 70	p. 70	
SNMA SNMG	 DSBNR/L Double Clamp	 DSDNN Double Clamp	 DSSNR/L Double Clamp
p. 42	p. 71	p. 71	p. 71
TNMA TNMG TNGG TNUX	 DTJNR/L Double Clamp		
p. 47	p. 72		
VNMA VNMG	 DVJNR/L Double Clamp	 DVVNN Double Clamp	
p. 51	p. 73	p. 73	
WNMA WNMG WNGG	 DWLNR/L Double Clamp		
p. 53 / 56	p. 74		

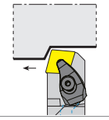
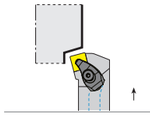
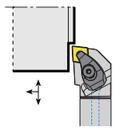
Double Clamp with Internal coolant type for CN** Insert



* '**C**' Letter at Last : Optional Clamp Included

: p. 30

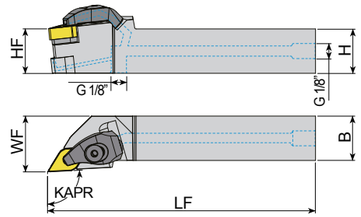
Unit: inch

Series			Designation	EDP 2700.. R	EDP 2700.. L	H (= HF)	B	WF	LF	Insert
	DCBNR/L Approach angle 75°	●	DCBNR/L 124B - C	2337	2336	0.75	0.75	0.79	4.5	
		●	DCBNR/L 164D - C	1520	1521	1	1	0.79	6	
		●	DC BNR/L 204D - C	1522	1523	1.25	1.25	0.99	6	
	DCKNR/L Approach angle 75°	●	DCKNR/L 124B - C	2339	2338	0.75	0.75	1	4.5	CNMG43
		●	DCKNR/L 164D - C	1516	1517	1	1	1.25	6	
		●	DCKNR/L 204D - C	1518	1519	1.25	1.25	1.5	6	
	DCLNR/L Approach angle 75°	●	DCLNR/L 164D - C	1502	1503	1	1	1.25	6	
		●	DCLNR/L 165D - C	1506	1507	1	1	1.25	6	CNMG54
		●	DCLNR/L 204D - C	1504	1505	1.25	1.25	1.5	6	CNMG43
		●	DCLNR/L 205D - C	1508	1509	1.25	1.25	1.5	6	CNMG54
		●	DCLNR/L 206D - C	1512	1513	1.25	1.25	1.5	6	CNMG64
		●	DCLNR/L 245E - C	2342	2340	1.5	1.5	2	7	CNMG54
		●	DCLNR/L 246E - C	2343	2341	1.5	1.5	2	7	CNMG64
		●	DCLNR/L 124B - C	1500	1501	0.75	0.75	1	4.5	CNMG43

Series	information	Shim	Shim Screw	Clamp	Clamp Screw	Spring	O - RING	Tork Wrench
DC..4	Description	YAACN - 3 - 0001	YAAV - 13 - M5x8	YATKH - 01 - R YATKH - 02 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000137	18000163	18000220 18000221	18000222	28000044	18000223	18000061
DC..5	Description	YAACN - 3 - 0002	YAAV - 05 - M6x10	YATKH - 07 - R YATKH - 08 - L	YAKV - 39 - M7x21	YAKY - 02	YAXR - 01	YAAL - 03 - 3
	EDP	18000138	28000046	28000051 28000052	28000056	18000164	18000223	18000061
DC..6	Description	YAACN - 3 - 0003	YAAV - 17 - M6x14	YATKH - 09 - R YATKH - 10 - L	YAKV - 39 - M7x21	YAKY - 02	YAXR - 01	YAAL - 03 - 3
	EDP	18000139	28000057	28000053 28000054	28000056	18000164	18000223	18000061

Turning - Holder - External

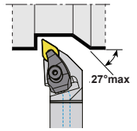
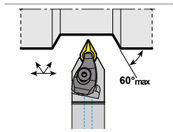
Double Clamp with Internal coolant type for DN** Insert



* '**C**' Letter at Last : Optional Clamp Included

: p. 35

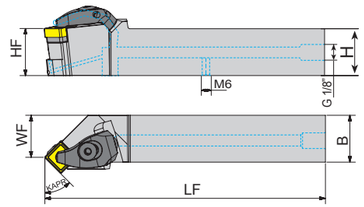
Unit: inch

Series			Designation	EDP 2700.. R	EDP 2700.. L	H (= HF)	B	WF	LF	Insert
	**DDJNR/L** Approach angle 93°	●	DDJNR/L 124B - C	1524	1525	0.75	0.75	1	4.5	DNMG43
			DDJNR/L 164D - C	1526	1527	1	1	1.25	6	
			DDJNR/L 204D - C	1528	1529	1.25	1.25	1.5	6	
	**DDNNN** Approach angle 62.5°	●	DDNNN 164D - C	1530		1	1	0.5	6	
			DDNNN 204D - C	1531		1.25	1.25	0.625	6	

Series	information	Shim	Shim Screw	Clamp	Clamp Screw	Spring	O-RING	Tork Wrench
DDJ..4	Description	YAADN - 3 - 0001	YAAV - 13 - M5x8	YATKH - 01 - R YATKH - 02 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000142	18000163	18000220 18000221	18000222	28000044	18000223	18000061
DDN..4	Description	YAADN - 3 - 0001	YAAV - 13 - M5x8	YATKH - 01 - R	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000142	18000163	18000220	18000222	28000044	18000223	18000061

Turning - Holder - External

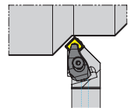
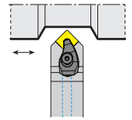
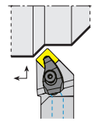
Double Clamp with Internal coolant type for SN** Insert



* '**C**' Letter at Last : Optional Clamp Included

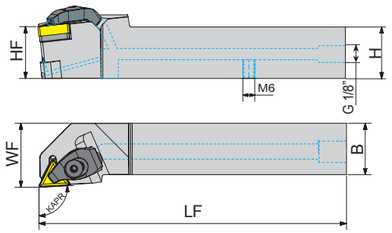
: p. 42

Unit: inch

Series			Designation	EDP 2700.. R	EDP 2700.. L	H (= HF)	B	WF	LF	Insert
	**DSBNR/L** Approach angle 75°	●	DSBNR/L 164D - C	1532	1533	1	1	0.79	6	SNMG43
			DSBNR/L 165D - C	1536	1537	1	1	0.79	6	SNMG54
			DSBNR/L 204D - C	1534	1535	1.25	1.25	0.99	6	SNMG43
			DSBNR/L 205D - C	1538	1539	1.25	1.25	0.99	6	SNMG54
	**DSDNN** Approach angle 45°	●	DSDNN 164D - C	1550		1	1	0.5	6	SNMG43
			DSDNN 165D - C	1552		1	1	0.5	6	SNMG54
			DSDNN 204D - C	1551		1.25	1.25	0.625	6	SNMG43
			DSDNN 205D - C	1553		1.25	1.25	0.625	6	SNMG54
			DSDNN 245E - C	2344		1.5	1.5	0.75	7	
	**DSSNR/L** Approach angle 45°	●	DSSNR/L 164D - C	1540	1541	1	1	1.25	6	SNMG43
			DSSNR/L 165D - C	1544	1545	1	1	1.25	6	SNMG54
			DSSNR/L 204D - C	1542	1543	1.25	1.25	1.5	6	SNMG43
			DSSNR/L 205D - C	1546	1547	1.25	1.25	1.5	6	SNMG54
			DSSNR/L 245E - C	2346	2345	1.5	1.5	2	5	

Series	information	Shim	Shim Screw	Clamp	Clamp Screw	Spring	O-RING	Tork Wrench
DSB..4 DSS..4	Description	YAASN - 3 - 0004	YAAV - 13 - M5x8	YATKH - 01 - R YATKH - 02 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000145	18000163	18000220 18000221	18000222	28000044	18000223	18000061
DSB..5 DSS..5	Description	YAASN - 3 - 0023	YAAV - 05 - M6x10	YATKH - 07 - R YATKH - 08 - L	YAKV - 39 - M7x21	YAKY - 02	YAXR - 01	YAAL - 03 - 3
	EDP	18000219	28000046	28000051 28000052	28000056	18000164	18000223	18000061
DSD..4	Description	YAASN - 3 - 0004	YAAV - 13 - M5x8	YATKH - 01 - R	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000145	18000163	18000220	18000222	28000044	18000223	18000061
DSD..5	Description	YAASN - 3 - 0023	YAAV - 05 - M6x10	YATKH - 07 - R	YAKV - 39 - M7x21	YAKY - 02	YAXR - 01	YAAL - 03 - 3
	EDP	18000219	28000046	28000051	28000056	18000164	18000223	18000061

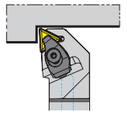
Double Clamp with Internal coolant type for TN** Insert



* 'C' Letter at Last : Optional Clamp Included

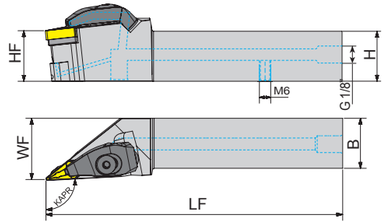
: p. 47

Unit : inch

Series		Designation	EDP 2700.. R	EDP 2700.. L	H (= HF)	B	WF	LF	Insert
 DTJNR/L Approach angle 93°	●	DTJNR/L 163D - C	1555	2347	1	1	1.25	6	TNMG33
		DTJNR/L 164D - C	1559	2348	1	1	1.25	6	TNMG43
		DTJNR/L 203D - C	1557	2349	1.25	1.25	1.5	6	TNMG33
		DTJNR/L 204D - C	1561	2350	1.25	1.25	1.5	6	TNMG43

Series	information	Shim	Shim Screw	Clamp	Clamp Screw	Spring	O-RING	Tork Wrench
DT..3	Description	YAATN - 2 - 0002	YAAV - 03 - M5x12	YATKH - 03 - R YATKH - 04 - L	YAKV - 37 - M5x18	YAKY - 03	YAXR - 01	YAAL - 03 - 3
	EDP	18000147	18000157	28000047 28000048	28000055	28000045	18000223	18000061
DT..4	Description	YAATN - 3 - 0015	YAAV - 13 - M5x8	YATKH - 01 - R YATKH - 02 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000148	18000163	18000220 18000221	18000222	28000044	18000223	18000061

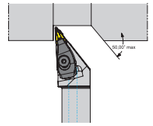
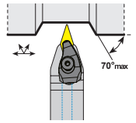
Double Clamp with Internal coolant type for VN** Insert



* 'C' Letter at Last : Optional Clamp Included

: p. 51

Unit : inch

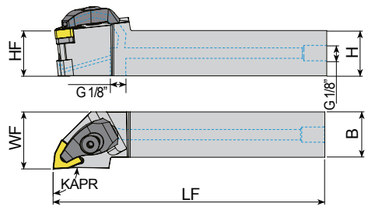
Series		Designation	EDP 2700.. R	EDP 2700.. L	H (= HF)	B	WF	LF	Insert
 DVJNR/L Approach angle 93°	●	DVJNR/L 123B - C	1563	1564	0.75	0.75	1	4	VNMG33
		DVJNR/L 163D - C	1565	1566	1	1	1.25	6	
		DVJNR/L 203D - C	1567	1568	1.25	1.25	1.25	6	
 DVVNN Approach angle 72.5°		DVVNN 123B - C	1569		0.75	0.75	0.375	4	
		DVVNN 163D - C	1570		1	1	0.5	6	

Series	information	Shim	Shim Screw	Clamp	Clamp Screw	Spring	O-RING	Tork Wrench
DVJ..3	Description	YAAVN - 2 - 0002	YAAV - 04 - M5x12	YATKH - 05 - R YATKH - 06 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000150	18000158	28000049 28000050	18000222	28000044	18000223	18000061
DVV..3	Description	YAAVN - 2 - 0002	YAAV - 04 - M5x12	YATKH - 05 - R YATKH - 06 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000150	18000158	28000049 28000050	18000222	28000044	18000223	18000061

YG TURN INCH

Turning - Holder - External

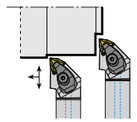
Double Clamp with Internal coolant type for WN** Insert



* '**C**' Letter at Last : Optional Clamp Included

: p. 53 / 56

Unit : inch

Series			Designation	EDP 2700.. R	EDP 2700.. L	H (= HF)	B	WF	LF	Insert
 DWLNR/L Approach angle 95°		●	DWLNR/L 123B - C	1571	1572	0.75	0.75	1	4.5	WNMG33
			DWLNR/L 124B - C	1575	1576	0.75	0.75	1	4.5	WNMG43
			DWLNR/L 163D - C	1573	1574	1	1	1.25	6	WNMG33
			DWLNR/L 164D - C	1577	1578	1	1	1.25	6	WNMG43
			DWLNR/L 204D - C	1579	1580	1.25	1.25	1.5	6	

Series	information	Shim	Shim Screw	Clamp	Clamp Screw	Spring	O-RING	Tork Wrench
DW..3	Description	YAAWN - SW317	YAAV - 01 - M3x10	YATKH - 03 - R YATKH - 04 - L	YAKV - 37 - M5x18	YAKY - 03	YAXR - 01	YAAL - 03 - 3
	EDP	18000152	18000155	28000047 28000048	28000055	28000045	18000223	18000061
DW..4	Description	YAAWN - 3 - 0001	YAAV - 13 - M5x8	YATKH - 01 - R YATKH - 02 - L	YAKV - 33 - M6x22	YAKY - 01	YAXR - 01	YAAL - 03 - 3
	EDP	18000151	18000163	18000220 18000221	18000222	28000044	18000223	18000061

YG-1 USA - phone: 800-765-8665, E-mail: yg1usa.com
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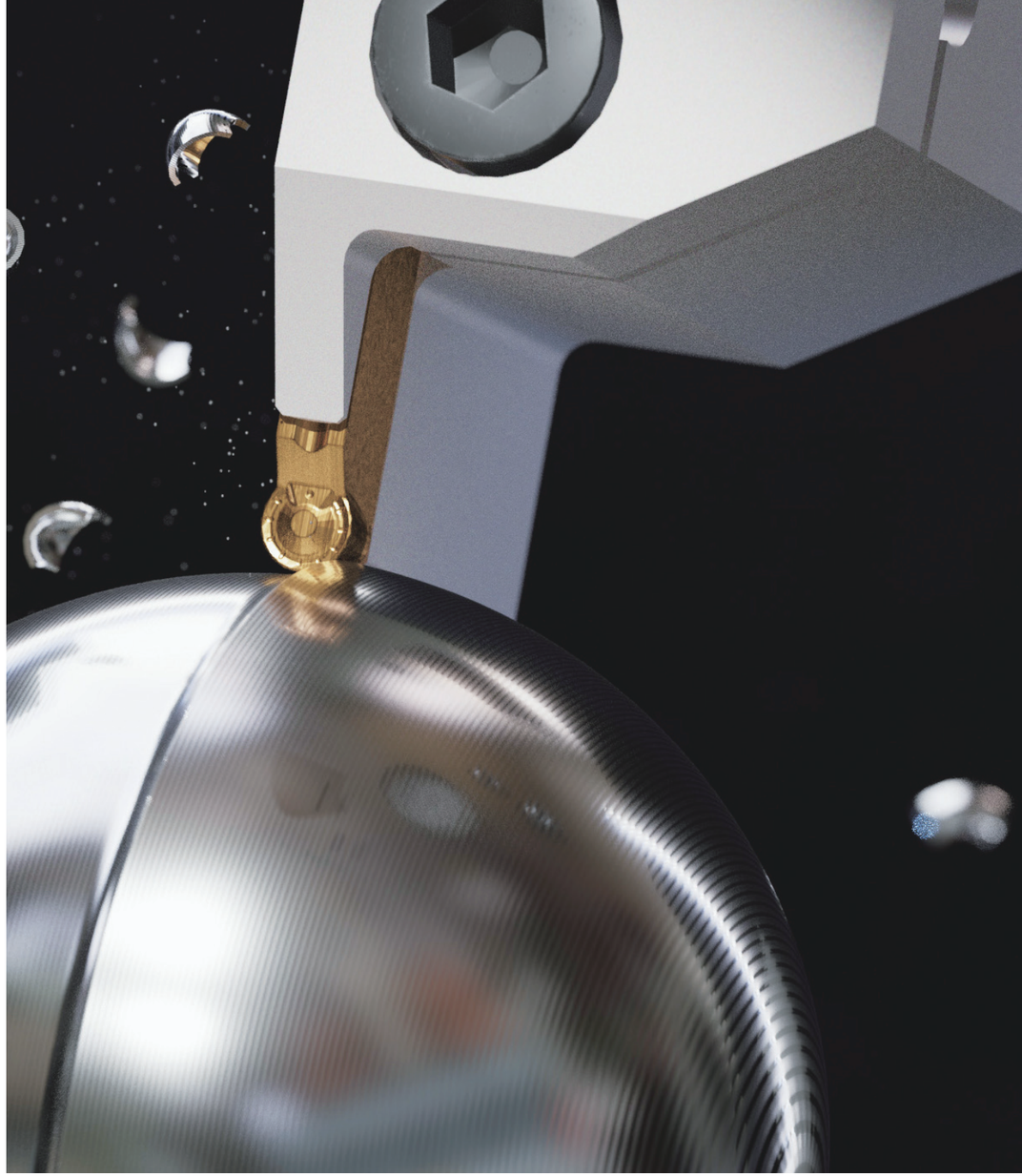
YG-1 CO., LTD.



PARTING & GROOVING

Parting & Grooving Inserts Overview

Parting & Grooving Inserts

Parting & Grooving Holders

Parting & Grooving

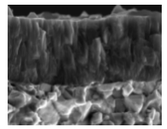
Parting & Grooving Overview

Parting & Groove Turn Grades

Parting and Grooving Grades		P Steel				M Stainless steel				K Cast iron			N Non Ferrous		S Super Alloy	
		P10	P20	P30	P40	M10	M20	M30	M40	K10	K20	K30	N10	N20	S10	S20
PVD	YG602G (YG602)		602G				602G				602G					602G
	YG603							603								

YG602G
(YG602)
P20 - P35 | M20 - M40 | K20 - K40 | S15 - S25

PVD - TiAlN

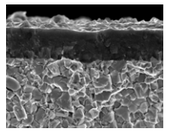


Universal grade for Parting & Groove Turn

- Ultra Dense PVD Coating with optimal thermal resistance & strength
- Sub - Micron substrate designed for demanding application
- YG602G : First Choice for Low Cutting Speed, Soft and Sticky Material with Low Hardness (Gold Color)
- YG602 : First Choice for General Application (Violet Color)

YG603
M30 - M50

PVD - TiAlN



PVD Parting & Grooving Grade for Stainless Steel

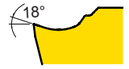
- Ultra high toughness substrate and strong adhesion
- Excellent cutting edge strength and chipping resistance
- Stable machinability and tool life for stainless steel

Parting & Grooving Inserts

TD. Series	Inserts
	TDN, TDP, TDY

2, 3, 4, 5

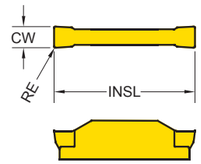
Parting & Grooving Chipbreakers

Parting & Grooving	- P			• For Parting & Deep Grooving • For Low Feed Rate and Difficult to Cut Materials
	- N			• For External Parting And Grooving • For General Use
Turning & Grooving	- Y			• For External Turning & Grooving • For Medium feed rate
	NEW GL			• For External, Internal turning and Grooving • Face grooving and Face turning • For low feed rate
	NEW GM			• For External, Internal turning and Grooving • First choice Face Grooving and Face turning • For Medium feed rate
	NEW RG			• For External, Internal turning and Grooving • Full radius Insert for Profiling

Parting & Grooving - Inserts

Parting & Grooving Inserts

Recommended Cutting Conditions : p.164



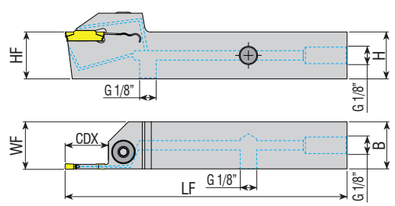
Series	INSL	CW
TD * 2	.787	.079
TD * 3	.787	.118
TD * 4	.787	.157
TD * 5	.787	.197

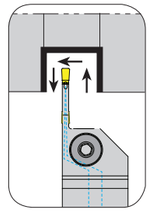
* CDX : Cutting Depth Maximum

● : Stock item ○ : Order made item

TD.		Designation	RE (In)	Parting & Grooving Fn (In/rev.)	Parting & Grooving CDX (In)	Turning Fn (In/rev.)	Turning Ap	EDP 5200.. YG602	YG602G	YG603
- P	Parting & Grooving (Sharp edge)	TDP 2002	.008	.002 ~ .005	.748	-	-	● 0012	○ 0036	● 0078
		TDP 3002	.008	.002 ~ .006	.748	-	-	● 0029	○ 0030	● 0076
		TDP 4003	.012	.002 ~ .007	.748	-	-	● 0023	○ 0038	● 0080
		*TDPR 2002 - 6	.008	.001 ~ .003	.748	-	-	● 0045		● 0085
		*TDPR 3002 - 6	.008	.002 ~ .005	.748	-	-	● 0048		● 0089
	* 6° Angled Parting	*TDPL 2002 - 6	.008	.001 ~ .003	.748	-	-	● 0046		● 0086
		*TDPL 3002 - 6	.008	.002 ~ .005	.748	-	-	● 0049		● 0090
- N	Parting & Grooving (General)	TDN 2002	.008	.002 ~ .007	.748	-	-	● 0010	○ 0035	● 0077
		TDN 3002	.008	.003 ~ .009	.748	-	-	● 0024	○ 0025	● 0075
		TDN 4003	.012	.003 ~ .011	.748	-	-	● 0022	○ 0037	● 0079
		TDN 5003	.012	.004 ~ .014	.945	-	-	● 0042		
		*TDNR 2002 - 6	.008	.002 ~ .006	.748	-	-	● 0043		● 0083
		*TDNR 3002 - 6	.008	.002 ~ .007	.748	-	-	● 0040		● 0087
		*TDNL 2002 - 6	.008	.002 ~ .006	.748	-	-	● 0044		● 0084
	* 6° Angled Parting	*TDNL 3002 - 6	.008	.002 ~ .007	.748	-	-	● 0047		● 0088
		*TDNL 4003 - 4	.012	.002 ~ .009	.748	-	-	● 0096		
- Y	Turn Groove	TDY3E - 0.4	.016	.002 ~ .009	.394	.005 ~ .009	.020 ~ .094		● 0027	
		TDY4E - 0.4	.016	.003 ~ .011	.394	.006 ~ .012	.020 ~ .110		● 0020	
		TDY5E - 0.4	.016	.003 ~ .009	.394	.006 ~ .012	.020 ~ .126		● 0082	
	NEW GL	TDY2E - 0.3 - GL	.012	.002 ~ .008	.394	.002 ~ .007	.016 ~ .059		● 0123	● 0124
		TDY3E - 0.3 - GL	.012	.002 ~ .009	.394	.003 ~ .008	.016 ~ .079		● 0125	● 0126
		TDY4E - 0.4 - GL	.016	.002 ~ .010	.394	.004 ~ .010	.020 ~ .091		● 0112	● 0127
	NEW GM	TDY3E - 0.4 - GM	.016	.002 ~ .009	.394	.005 ~ .009	.020 ~ .094		● 0118	● 0119
		TDY4E - 0.4 - GM	.016	.003 ~ .011	.394	.006 ~ .012	.020 ~ .110		● 0113	● 0120
		TDY4E - 0.8 - GM	.031	.004 ~ .011	.394	.007 ~ .013	.031 ~ .110		● 0114	● 0122
	NEW RG	TDY2E - 1.0 - RG	.039	.002 ~ .006	.394	.004 ~ .012	.004 ~ .031		● 0111	● 0115
		TDY3E - 1.5 - RG	.059	.003 ~ .007	.394	.006 ~ .014	.004 ~ .047		● 0108	● 0116
		TDY4E - 2.0 - RG	.079	.004 ~ .008	.394	.007 ~ .018	.004 ~ .063		● 0109	● 0117

External holders with Internal coolant type





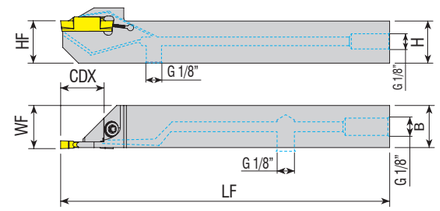
: p. 77

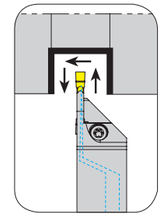
Unit :inch

Designation		EDP 5700.. R	EDP 5700.. L	CW	CDX	H (= HF)	B	LF	Insert
YTER/L 08 - 2T059 - C	●	0261	0238	.079	.591	.500	0.500	3.937	
YTER/L 10 - 2T059 - C	●	0264	0241	.079	.591	.625	0.625	4.921	
YTER/L 12 - 2T035 - C	●	0271	0247	.079	.354	.750	0.750	4.921	
YTER/L 12 - 2T059 - C	●	0268	-	.079	.591	.750	0.750	4.921	TD.2..
YTER/L 12 - 2T066 - C	●	0269	-	.079	.669	.750	0.750	4.921	
YTER/L 12 - 2T078 - C	●	0270	0246	.079	.787	.750	0.750	4.921	
YTER/L 16 - 2T066 - C	●	0275	0251	.079	.669	1.000	1.000	5.906	
YTER/L 08 - 3T059 - C	●	0263	0240	.118	.591	.500	0.500	3.937	
YTER/L 10 - 3T059 - C	●	0266	0243	.118	.591	.625	0.625	4.921	
YTER/L 12 - 3T059 - C	●	-	0245	.118	.591	.750	0.750	4.921	
YTER/L 12 - 3T078 - C	●	0272	0248	.118	.787	.750	0.750	4.921	
YTER/L 12 - 3T098 - C	●	0273	0249	.118	.984	.750	0.750	4.921	TD.3..
YTER/L 12 - 3T118 - C	●	0274	0250	.118	1.181	.750	0.750	4.921	
YTER/L 16 - 3T035 - C	●	0279	0255	.118	.354	1.000	1.000	5.906	
YTER/L 16 - 3T086 - C	●	0276	0252	.118	.866	1.000	1.000	5.906	
YTER/L 16 - 3T098 - C	●	0277	0253	.118	.984	1.000	1.000	5.906	
YTER/L 16 - 3T118 - C	●	0278	0254	.118	1.181	1.000	1.000	5.906	
YTER/L 20 - 3T098 - C	●	0284	0259	.118	.984	1.250	1.250	6.693	
YTER/L 16 - 4T086 - C	●	0280	0256	.157	.866	1.000	1.000	5.906	TD.4..
YTER/L 16 - 4T098 - C	●	0281	-	.157	.984	1.000	1.000	5.906	
YTER/L 16 - 4T118 - C	●	0282	0257	.157	1.181	1.000	1.000	5.906	
YTER/L 16 - 5T098 - C	●	0283	0258	.197	.984	1.000	1.000	5.906	TD.5..

Series	Designation	Infomation	Screw	Ring	Wrench
YTER/L	..-2..	Description	Y2505 - M6x30	YABPL - 01	YAAL - 03 - 3
		EDP	18000199	18000058	18000061
	..-3..	Description	Y2004 - M8x1x20	-	YAAL - 05 - 4
		EDP	18000196	-	18000062
	..-3..	Description	Y2004 - M8x1x20	-	-
		EDP	18000196	-	-
	..-3..	Description	Y2004 - M8x1x20	-	-
		EDP	18000196	-	-

External holders with Internal coolant type for Swiss Lathe (Swiss Lathe)





: p. 77

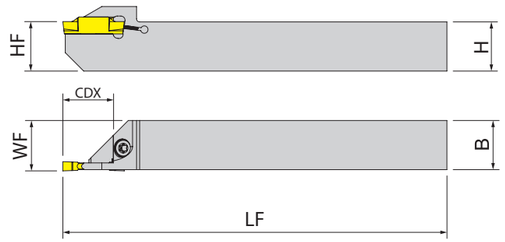
Unit :inch

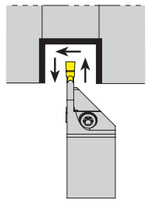
Designation		EDP 5700.. R	EDP 5700.. L	CW	CDX	H (= HF)	B	LF	Insert
YTER/L 08 - 2T047 - S - C	●	0260	0237	.079	.472	.500	.500	4.921	TD.2..
YTER/L 08 - 3T047 - S - C	●	0265	0239	.118	.472	.500	.500	4.921	TD.3..
YTER/L 10 - 2T063 - S - C	●	0286	0242	.079	.630	.625	.625	4.921	TD.2..
YTER/L 10 - 3T063 - S - C	●	0288	0244	.118	.630	.625	.625	4.921	TD.3..

Series	Designation	Infomation	Screw	Ring	Wrench
YTER/L	..-S	Description	Y4015 - M4x11	-	Y80 - T15
		EDP	18000119	-	18000167

Parting & Grooving - Holder - External

External holders (Swiss Lathe)





: p. 77

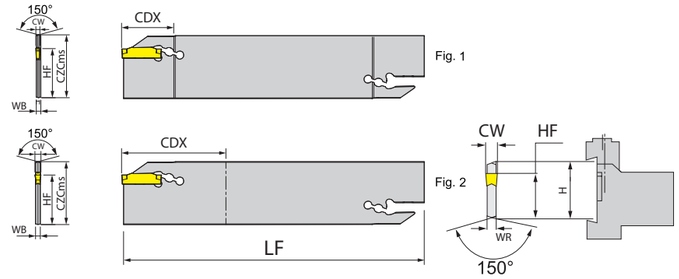
Unit :inch

Designation	EDP 5700.. R	EDP 5700.. L	CW	DMIN	CDX	DCON	H	OHN	LF	Insert
YTIR/L 10 - 2T033 - C	0289	0285	.079	.984	.335	.625	.583	1.102	5.906	TD.2..
YTIR/L 12 - 3T023 - C	0290	0286	.118	.984	.236	.750	.720	1.575	6.693	TD.3..
YTIR/L 16 - 3T023 - C	0291	0287	.118	.984	.236	1.000	.906	1.575	7.874	
YTIR/L 20 - 3T019 - C	0292	0288	.118	1.220	.197	1.250	1.181	2.362	9.843	

Series	Designation	Infomation	Screw	Ring	Wrench
YTER/L	10 - 2T..	Description	2503 - M4x10	-	HL - 05
		EDP	18000197	-	58000041
	12 - 3T.. / 16 - 3T..	Description	Y2504 - M5X12	-	-
		EDP	18000198	-	-
	20 - 3T..	Description	Y2004 - M8x1x20	-	-
		EDP	18000196	-	-

Parting & Grooving - Holder

Blade



: p. 77

Unit :inch

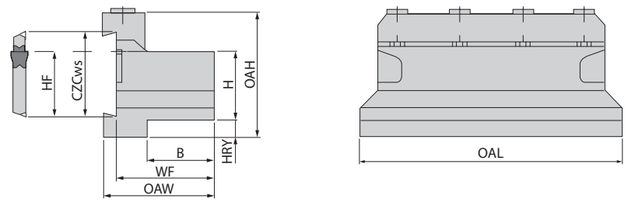
Designation	EDP 5700..	CZCms	CW	CDX	HF	LF	WB	Insert
YGB 32 - 2 - C	0226	1.260	.079	.787	.984	3.937	.063	TD.2..
YGB 32 - 3 - C	0227	1.260	.118	.787	.984	4.921	.094	TD.2..

Series	Designation	Infomation	Screw	Ring	Wrench
YGB	32 -..	Description	-	-	YALA - 01
		EDP	-	-	18000202

YG TURN INCH

Parting & Grooving - Holder

Blade Block



: p. 77

Unit: inch

Designation		EDP 5700..	CZCws	H	B	HF	OAL	OAH
YGBU 20 - 32 - C	●	0293	1.260	.750	.750	.984	3.937	1.969
YGBU 25 - 32 - C	●	0294	1.260	1.000	1.000	.984	4.331	1.969
YGBU 32 - 32 - C	●	0295	1.260	1.250	1.250	.984	4.331	2.126

Series	Designation	Infomation	Clamp	Screw	Wrench
YGBU	20 -.. / 25 -..	Description	YABK - 03	Y2505 - M6X30	YAAL - 07 - 5
		EDP	18000204	18000199	18000203
	32 -..	Description	YABK - 04	-	-
		EDP	18000205	-	-

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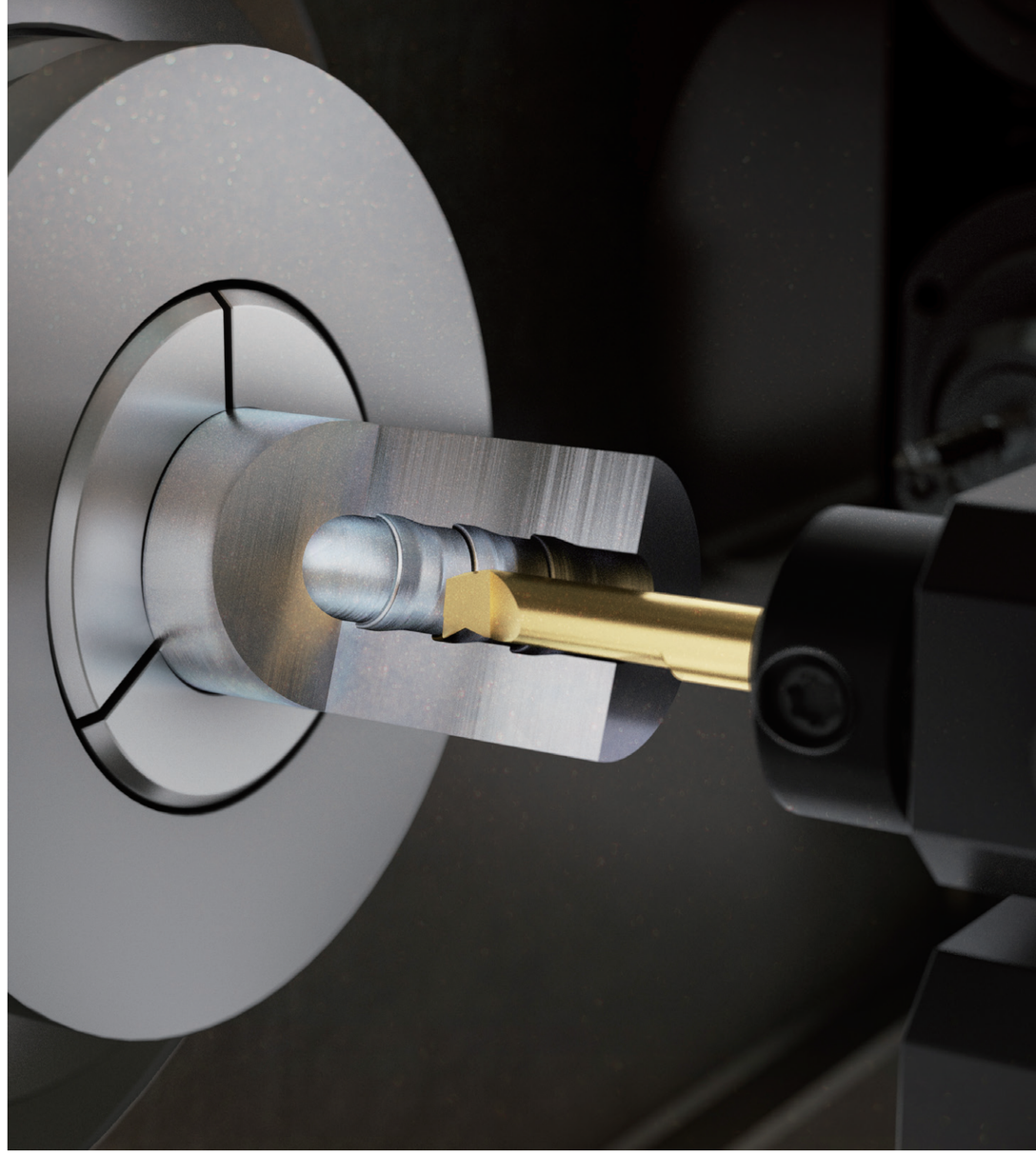
YG-1 CO., LTD.



NEW

SOLID MINIATURE TURNING for SMALL BORE

Scan this QR code to see our **Nanocut** at work.

Code Keys - Boring Tool & Holder

Boring Tool

NC	BP	4	R	-	10.	04	-	005	-	YG812
Nanocut	Series: BP – Boring & Profiling	Insert connection (DCON) (4 mm)	Hand: R – Right Hand, L – Left Hand		Minimum Bore Diameter (DMIN) (1.0 mm)	Usable Length (LU) (4 mm)		Corner Radius (RE) (0.05 mm)		Grade

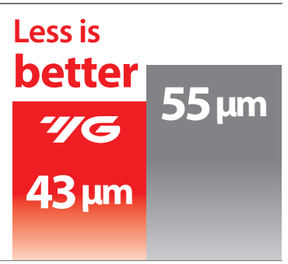
Holder

NC	HI	-	0500.	4	i
Nanocut	Holder Internal		$DCON_{MS}$	$DCON_{WS}$ (Insert connection (4 mm))	Inch

Success Story

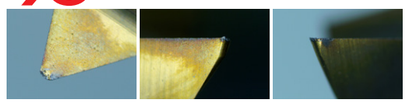
Cutting Conditions

Nanocut Size	Ø.236", R.008"
Work Material	4140 (Alloy Steel) (HRc 20)
Vc	328 ft/min
N (RPM)	637 rev/min
Fn	.004 in/rev
Ap	Axial: .390" Radial: .006"
Coolant	Wet Cut
Operation	Boring
Machine	Turn Mill

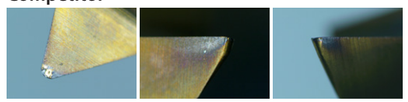


Edge wear (after 30 min.)

YG



Competitor



Overview

At present, as demand for small parts (camera lens, mobile phone parts) and medical instruments (implants) increases, demand for small - diameter products capable of high - precision processing is increasing.

Application

- Turning of Small Bore Components
- Internal Turning(Boring), Grooving and Threading

Features

- Minimum Diameter(Boring & Profiling series) : Ø 1 mm (.039")
- Internal Coolant for Longer Tool life and Enhanced Chip Evacuation
- Secure Connection Design: Pin + Slant Positioning
- 10 Geometries for Various Applications

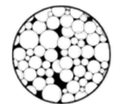
Benefits

- Reduced Machine Down Time
- Lower Machining Cost

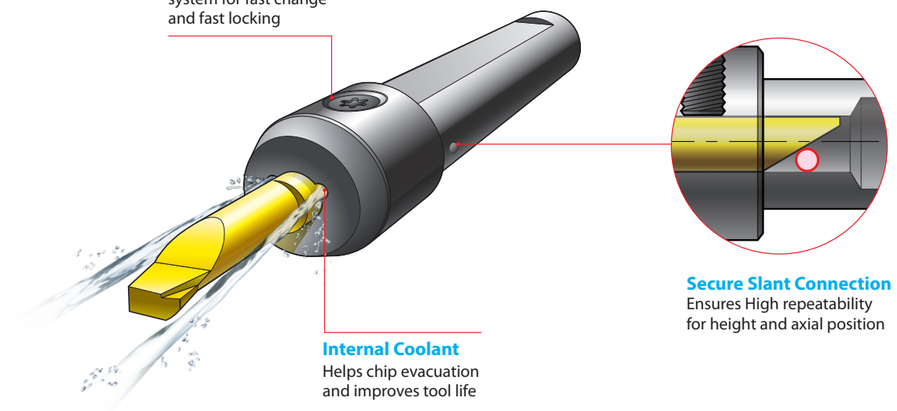
YG812 - Micro Grain Carbide Grade

P10 - P20 | M20 - M30 | K20 - K30 | S10 - S25

Submicron Grade Carbide Substrate Material for high toughness and wear resistance realizes high precision machining

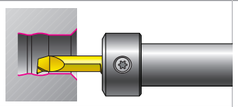
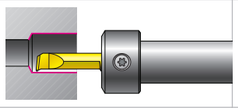
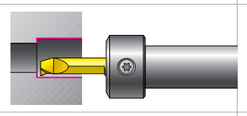
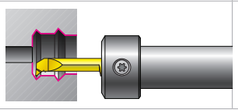


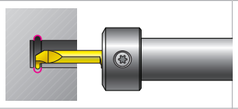
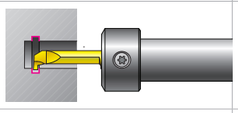
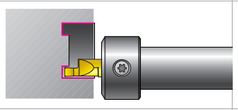
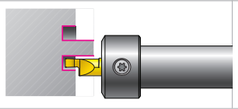
Advantages of Nanocut

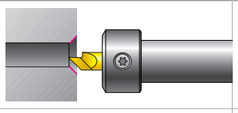
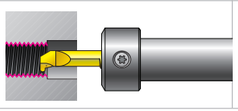


Overview

Recommended Cutting Conditions : p.165

Series		KAPR (°)	DCON mm(inch)	Page
BP Boring & Profiling		98	4 (.157) 6 (.236)	87
BO Boring with Chipbreaker		98		88
BF 90°Boring		90		89
PR Profiling		98		90

Series		CW (inch)	DCON mm(inch)	Page
GR Grooving Round		.039 - 0.79	4 (.157) 6 (.236)	91
GS Grooving Square		.031 - .079		92
FI Face Grooving Internal		.039 - .118		93
FE Face Grooving External		.039 - .118		93

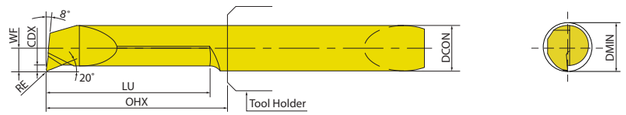
Series		WF (inch)	DCON mm(inch)	Page
CH Chamfering		.020 - .043	4 (.157) 6 (.236)	94
TH Threading		.079 - .116		95

Series		$DCON_{MS}$ (inch)	$DCON_{WS}$ (inch)	Page
Holder		.500 - 1.000	4 (.157) 6 (.236)	96

Boring Tool

BP - Boring & Profiling

NEW

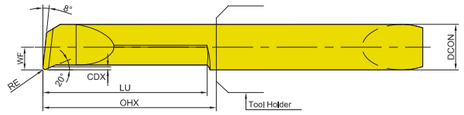


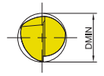
●: Stock item
○: Order made item

KAPR	DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CDX	WF	OHX	OAL	YG812
98°	4 (.157)	NCBP4R - 10.04 - 005 - YG812	NCBP04R1004005T	.039	.16	.002	.004	.018	.51	1.10	●
		NCBP4R - 10.04 - 010 - YG812	NCBP04R1004010T	.039	.16	.004	.004	.018	.51	1.10	●
		NCBP4R - 10.06 - 005 - YG812	NCBP04R1006005T	.039	.24	.002	.004	.018	.51	1.10	●
		NCBP4R - 10.06 - 010 - YG812	NCBP04R1006010T	.039	.24	.004	.004	.018	.51	1.10	●
		NCBP4R - 17.06 - 005 - YG812	NCBP04R1706005T	.067	.24	.002	.008	.028	.51	1.10	○
		NCBP4R - 17.06 - 010 - YG812	NCBP04R1706010T	.067	.24	.004	.008	.028	.51	1.10	●
		NCBP4R - 17.09 - 005 - YG812	NCBP04R1709005T	.067	.35	.002	.008	.028	.51	1.10	○
		NCBP4R - 17.09 - 010 - YG812	NCBP04R1709010T	.067	.35	.004	.008	.028	.51	1.10	●
		NCBP4R - 22.06 - 005 - YG812	NCBP04R2206005T	.087	.24	.002	.008	.037	.51	1.10	○
		NCBP4R - 22.06 - 010 - YG812	NCBP04R2206010T	.087	.24	.004	.008	.037	.51	1.10	●
		NCBP4R - 22.09 - 005 - YG812	NCBP04R2209005T	.087	.35	.002	.008	.037	.51	1.10	○
		NCBP4R - 22.09 - 010 - YG812	NCBP04R2209010T	.087	.35	.004	.008	.037	.51	1.10	●
		NCBP4R - 22.13 - 010 - YG812	NCBP04R2213010T	.087	.51	.004	.008	.037	.71	1.30	●
		NCBP4R - 27.10 - 005 - YG812	NCBP04R2710005T	.106	.39	.002	.008	.047	.51	1.10	○
		NCBP4R - 27.10 - 015 - YG812	NCBP04R2710015T	.106	.39	.006	.008	.047	.51	1.10	●
		NCBP4R - 27.15 - 005 - YG812	NCBP04R2715005T	.106	.59	.002	.008	.047	.71	1.30	○
		NCBP4R - 27.15 - 015 - YG812	NCBP04R2715015T	.106	.59	.006	.008	.047	.71	1.30	●
		NCBP4R - 32.10 - 015 - YG812	NCBP04R3210015T	.126	.39	.006	.008	.057	.51	1.10	●
		NCBP4R - 32.15 - 015 - YG812	NCBP04R3215015T	.126	.59	.006	.008	.057	.71	1.30	●
		NCBP4R - 32.20 - 005 - YG812	NCBP04R3220005T	.126	.79	.002	.008	.057	.91	1.50	○
		NCBP4R - 32.20 - 015 - YG812	NCBP04R3220015T	.126	.79	.006	.008	.057	.91	1.50	●
		NCBP4R - 42.10 - 015 - YG812	NCBP04R4210015T	.165	.39	.006	.012	.077	.51	1.10	●
		NCBP4R - 42.15 - 005 - YG812	NCBP04R4215005T	.165	.59	.002	.012	.077	.71	1.30	○
		NCBP4R - 42.15 - 015 - YG812	NCBP04R4215015T	.165	.59	.006	.012	.077	.71	1.30	●
		NCBP4R - 42.20 - 005 - YG812	NCBP04R4220005T	.165	.79	.002	.012	.077	.91	1.50	○
		NCBP4R - 42.20 - 015 - YG812	NCBP04R4220015T	.165	.79	.006	.012	.077	.91	1.50	●
		NCBP4R - 42.25 - 005 - YG812	NCBP04R4225005T	.165	.98	.002	.012	.077	1.10	1.69	○
		NCBP4R - 42.25 - 015 - YG812	NCBP04R4225015T	.165	.98	.006	.012	.077	1.10	1.69	●
	6 (.236)	NCBP6R - 62.15 - 020 - YG812	NCBP06R6215020T	.244	.59	.008	.020	.116	.71	1.69	●
		NCBP6R - 62.20 - 020 - YG812	NCBP06R6220020T	.244	.79	.008	.020	.116	.91	1.89	●
		NCBP6R - 62.25 - 020 - YG812	NCBP06R6225020T	.244	.98	.008	.020	.116	1.10	2.09	●
		NCBP6R - 62.30 - 020 - YG812	NCBP06R6230020T	.244	1.18	.008	.020	.116	1.30	2.28	●
		NCBP6R - 62.35 - 020 - YG812	NCBP06R6235020T	.244	1.38	.008	.020	.116	1.50	2.48	●
		NCBP6R - 62.40 - 020 - YG812	NCBP06R6240020T	.244	1.57	.008	.020	.116	1.69	2.68	●

Boring Tool

BO - Boring with Chip Breaker NEW



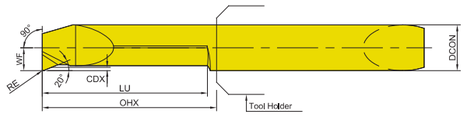


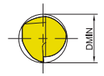
●: Stock item
○: Order made item

KAPR	DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CDX	WF	OHX	OAL	YG812
98°	4 (.157)	NCBO4R - 10.06 - 005 - YG812	NCBO04R1006005T	.039	.24	.002	.004	.018	.51	1.10	○
		NCBO4R - 10.06 - 010 - YG812	NCBO04R1006010T	.039	.24	.004	.004	.018	.51	1.10	●
		NCBO4R - 17.09 - 005 - YG812	NCBO04R1709005T	.067	.35	.002	.008	.028	.51	1.10	○
		NCBO4R - 17.09 - 010 - YG812	NCBO04R1709010T	.067	.35	.004	.008	.028	.51	1.10	○
		NCBO4R - 22.09 - 005 - YG812	NCBO04R2209005T	.087	.35	.002	.008	.037	.51	1.10	○
		NCBO4R - 22.09 - 010 - YG812	NCBO04R2209010T	.087	.35	.004	.008	.037	.51	1.10	●
		NCBO4R - 22.13 - 010 - YG812	NCBO04R2213010T	.087	.51	.004	.008	.037	.71	1.30	○
		NCBO4R - 27.15 - 005 - YG812	NCBO04R2715005T	.106	.59	.002	.008	.047	.71	1.30	○
		NCBO4R - 27.15 - 015 - YG812	NCBO04R2715015T	.106	.59	.006	.008	.047	.71	1.30	○
		NCBO4R - 32.15 - 015 - YG812	NCBO04R3215015T	.126	.59	.006	.008	.057	.71	1.30	●
		NCBO4R - 32.20 - 005 - YG812	NCBO04R3220005T	.126	.79	.002	.008	.057	.91	1.50	○
		NCBO4R - 32.20 - 015 - YG812	NCBO04R3220015T	.126	.79	.006	.008	.057	.91	1.50	●
		NCBO4R - 42.20 - 005 - YG812	NCBO04R4220005T	.165	.79	.002	.012	.077	.91	1.50	○
		NCBO4R - 42.20 - 015 - YG812	NCBO04R4220015T	.165	.79	.006	.012	.077	.91	1.50	●
		NCBO4R - 42.25 - 005 - YG812	NCBO04R4225005T	.165	.98	.002	.012	.077	1.10	1.69	○
		NCBO4R - 42.25 - 015 - YG812	NCBO04R4225015T	.165	.98	.006	.012	.077	1.10	1.69	●
	6 (.236)	NCBO6R - 62.15 - 020 - YG812	NCBO06R6215020T	.244	.59	.008	.020	.116	.81	1.69	●
		NCBO6R - 62.25 - 020 - YG812	NCBO06R6225020T	.244	.98	.008	.020	.116	1.10	2.09	●
		NCBO6R - 62.30 - 020 - YG812	NCBO06R6230020T	.244	1.18	.008	.020	.116	1.30	2.28	●
		NCBO6R - 62.35 - 020 - YG812	NCBO06R6235020T	.244	1.38	.008	.020	.116	1.50	2.48	●
		NCBO6R - 62.40 - 020 - YG812	NCBO06R6240020T	.244	1.57	.008	.020	.116	1.69	2.68	○

Boring Tool

BF - 90° Boring NEW

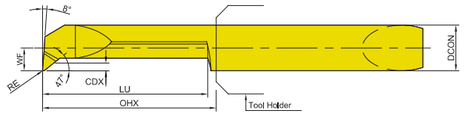


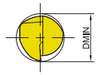


●: Stock item
○: Order made item

KAPR	DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CDX	WF	OHX	OAL	YG812
90°	4 (.157)	NCBF4R - 10.04 - 010 - YG812	NCBF04R1004010T	.039	.16	.004	.004	.018	.51	1.10	○
		NCBF4R - 10.06 - 010 - YG812	NCBF04R1006010T	.039	.24	.004	.004	.018	.51	1.10	○
		NCBF4R - 17.06 - 010 - YG812	NCBF04R1706010T	.067	.24	.004	.008	.028	.51	1.10	○
		NCBF4R - 17.09 - 010 - YG812	NCBF04R1709010T	.067	.35	.004	.008	.028	.51	1.10	○
		NCBF4R - 22.06 - 010 - YG812	NCBF04R2206010T	.087	.24	.004	.008	.037	.51	1.10	○
		NCBF4R - 22.09 - 010 - YG812	NCBF04R2209010T	.087	.35	.004	.008	.037	.51	1.10	○
		NCBF4R - 22.13 - 010 - YG812	NCBF04R2213010T	.087	.51	.004	.008	.037	.71	1.30	○
		NCBF4R - 27.10 - 015 - YG812	NCBF04R2710015T	.106	.39	.006	.008	.047	.51	1.10	○
		NCBF4R - 27.15 - 015 - YG812	NCBF04R2715015T	.106	.59	.006	.008	.047	.71	1.30	○
		NCBF4R - 32.10 - 015 - YG812	NCBF04R3210015T	.126	.39	.006	.008	.057	.51	1.10	○
		NCBF4R - 32.15 - 015 - YG812	NCBF04R3215015T	.126	.59	.006	.008	.057	.71	1.30	○
		NCBF4R - 32.20 - 015 - YG812	NCBF04R3220015T	.126	.79	.006	.008	.057	.91	1.50	○
		NCBF4R - 42.10 - 015 - YG812	NCBF04R4210015T	.165	.39	.006	.012	.077	.51	1.10	○
		NCBF4R - 42.15 - 015 - YG812	NCBF04R4215015T	.165	.59	.006	.012	.077	.71	1.30	○
		NCBF4R - 42.20 - 015 - YG812	NCBF04R4220015T	.165	.79	.006	.012	.077	.91	1.50	○
		NCBF4R - 42.25 - 015 - YG812	NCBF04R4225015T	.165	.98	.006	.012	.077	1.10	1.69	○
	6 (.236)	NCBF6R - 62.15 - 020 - YG812	NCBF06R6215020T	.244	.59	.008	.020	.116	.71	1.69	○
		NCBF6R - 62.20 - 020 - YG812	NCBF06R6220020T	.244	.79	.008	.020	.116	.91	1.89	○
		NCBF6R - 62.25 - 020 - YG812	NCBF06R6225020T	.244	.98	.008	.020	.116	1.10	2.09	○
		NCBF6R - 62.30 - 020 - YG812	NCBF06R6230020T	.244	1.18	.008	.020	.116	1.30	2.28	○
		NCBF6R - 62.35 - 020 - YG812	NCBF06R6235020T	.244	1.38	.008	.020	.116	1.50	2.48	○
		NCBF6R - 62.40 - 020 - YG812	NCBF06R6240020T	.244	1.57	.008	.020	.116	1.69	2.68	○

Boring Tool
PR - Profiling NEW

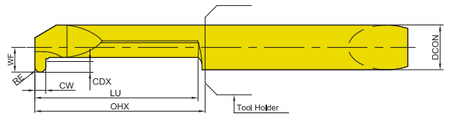




●: Stock item
○: Order made item

KAPR	DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CDX	WF	OHX	OAL	YG812
98°	4 (.157)	NCPR4R - 10.04 - 010 - YG812	NCPR04R1004010T	.039	.16	.004	.004	.018	.51	1.10	○
		NCPR4R - 10.06 - 010 - YG812	NCPR04R1006010T	.039	.24	.004	.004	.018	.51	1.10	○
		NCPR4R - 17.06 - 010 - YG812	NCPR04R1706010T	.067	.24	.004	.008	.028	.51	1.10	○
		NCPR4R - 17.09 - 010 - YG812	NCPR04R1709010T	.067	.35	.004	.008	.028	.51	1.10	○
		NCPR4R - 22.06 - 010 - YG812	NCPR04R2206010T	.087	.24	.004	.008	.037	.51	1.10	○
		NCPR4R - 22.09 - 010 - YG812	NCPR04R2209010T	.087	.35	.004	.008	.037	.51	1.10	○
		NCPR4R - 22.13 - 010 - YG812	NCPR04R2213010T	.087	.51	.004	.008	.037	.71	1.30	○
		NCPR4R - 27.10 - 015 - YG812	NCPR04R2710015T	.106	.39	.006	.008	.047	.51	1.10	○
		NCPR4R - 27.15 - 015 - YG812	NCPR04R2715015T	.106	.59	.006	.008	.047	.71	1.30	○
		NCPR4R - 32.10 - 015 - YG812	NCPR04R3210015T	.126	.39	.006	.008	.057	.51	1.10	○
		NCPR4R - 32.15 - 015 - YG812	NCPR04R3215015T	.126	.59	.006	.008	.057	.71	1.30	○
		NCPR4R - 32.20 - 015 - YG812	NCPR04R3220015T	.126	.79	.006	.008	.057	.91	1.50	○
		NCPR4R - 42.10 - 015 - YG812	NCPR04R4210015T	.165	.39	.006	.012	.077	.51	1.10	●
		NCPR4R - 42.15 - 015 - YG812	NCPR04R4215015T	.165	.59	.006	.012	.077	.71	1.30	●
		NCPR4R - 42.20 - 015 - YG812	NCPR04R4220015T	.165	.79	.006	.012	.077	.91	1.50	●
		NCPR4R - 42.25 - 015 - YG812	NCPR04R4225015T	.165	.98	.006	.012	.077	1.10	1.69	○
	6 (.236)	NCPR6R - 62.15 - 020 - YG812	NCPR06R6215020T	.244	.59	.008	.020	.116	.71	1.69	●
		NCPR6R - 62.20 - 020 - YG812	NCPR06R6220020T	.244	.79	.008	.020	.116	.91	1.89	●
		NCPR6R - 62.25 - 020 - YG812	NCPR06R6225020T	.244	.98	.008	.020	.116	1.10	2.09	○
		NCPR6R - 62.30 - 015 - YG812	NCPR06R6230015T	.244	1.18	.006	.020	.116	1.30	2.28	●
		NCPR6R - 62.30 - 020 - YG812	NCPR06R6230020T	.244	1.18	.008	.020	.116	1.30	2.28	○
		NCPR6R - 62.35 - 020 - YG812	NCPR06R6235020T	.244	1.38	.008	.020	.116	1.50	2.48	○
		NCPR6R - 62.40 - 020 - YG812	NCPR06R6240020T	.244	1.57	.008	.020	.116	1.69	2.68	○

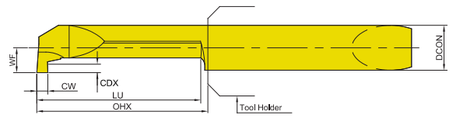
Boring Tool
GR - Grooving Round NEW



●: Stock item
○: Order made item

DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CW	CDX	WF	OHX	OAL	YG812
4 (.157)	NCGR4R - 42.15 - 10x08 - YG812	NCGR04R4215100T	.165	.59	.020	.039	.031	.077	.71	1.30	○
	NCGR4R - 42.15 - 12x08 - YG812	NCGR04R4215120T	.165	.59	.023	.046	.031	.077	.71	1.30	○
	NCGR4R - 42.15 - 15x08 - YG812	NCGR04R4215150T	.165	.59	.030	.059	.039	.077	.71	1.30	○
	NCGR4R - 42.15 - 16x08 - YG812	NCGR04R4215160T	.165	.59	.032	.064	.039	.077	.71	1.30	○
6 (.236)	NCGR6R - 62.25 - 10x18 - YG812	NCGR06R6225100T	.244	.98	.020	.039	.071	.116	1.10	2.09	○
	NCGR6R - 62.25 - 15x18 - YG812	NCGR06R6225150T	.244	.98	.030	.059	.071	.116	1.10	2.09	○
	NCGR6R - 62.25 - 16x18 - YG812	NCGR06R6225160T	.244	.98	.030	.064	.031	.116	1.10	2.09	○
	NCGR6R - 62.25 - 20x18 - YG812	NCGR06R6225200T	.244	.98	.039	.079	.071	.116	1.10	2.09	○

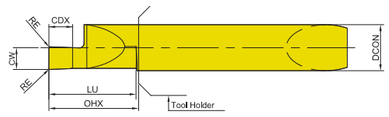
Boring Tool
GS - Grooving Square NEW



●: Stock item
○: Order made item

DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	CW	CDX	WF	OHX	OAL	YG812
4 (.157)	NCGS4R - 42.10 - 079x08 - YG812	NCGS04R4210079T	.165	.39	.031	.031	.077	.51	1.50	○
	NCGS4R - 42.15 - 079x08 - YG812	NCGS04R4215079T	.165	.59	.031	.031	.077	.71	1.69	○
	NCGS4R - 42.20 - 079x08 - YG812	NCGS04R4220079T	.165	.79	.031	.031	.077	.91	1.89	○
	NCGS4R - 42.10 - 100x08 - YG812	NCGS04R4210100T	.165	.39	.039	.031	.077	.51	1.50	●
	NCGS4R - 42.15 - 100x08 - YG812	NCGS04R4215100T	.165	.59	.039	.031	.077	.71	1.69	●
	NCGS4R - 42.20 - 100x08 - YG812	NCGS04R4220100T	.165	.79	.039	.031	.077	.91	1.89	○
6 (.236)	NCGS6R - 62.10 - 079x18 - YG812	NCGS06R6210079T	.244	.39	.031	.071	.116	.51	1.50	○
	NCGS6R - 62.15 - 079x18 - YG812	NCGS06R6215079T	.244	.59	.031	.071	.116	.71	1.69	○
	NCGS6R - 62.25 - 079x18 - YG812	NCGS06R6225079T	.244	.98	.031	.071	.116	1.10	2.09	○
	NCGS6R - 62.35 - 079x18 - YG812	NCGS06R6235079T	.244	1.38	.031	.071	.116	1.50	2.48	○
	NCGS6R - 62.10 - 100x18 - YG812	NCGS06R6210100T	.244	.39	.039	.071	.116	.51	1.50	○
	NCGS6R - 62.15 - 100x18 - YG812	NCGS06R6215100T	.244	.59	.039	.071	.116	.71	1.69	●
	NCGS6R - 62.25 - 100x18 - YG812	NCGS06R6225100T	.244	.98	.039	.071	.116	1.10	2.09	●
	NCGS6R - 62.35 - 100x18 - YG812	NCGS06R6235100T	.244	1.38	.039	.071	.116	1.50	2.48	○
	NCGS6R - 62.10 - 117x18 - YG812	NCGS06R6210117T	.244	.39	.046	.071	.116	.51	1.50	○
	NCGS6R - 62.15 - 117x18 - YG812	NCGS06R6215117T	.244	.59	.046	.071	.116	.71	1.69	○
	NCGS6R - 62.25 - 117x18 - YG812	NCGS06R6225117T	.244	.98	.046	.071	.116	1.10	2.09	○
	NCGS6R - 62.35 - 117x18 - YG812	NCGS06R6235117T	.244	1.38	.046	.071	.116	1.50	2.48	○
	NCGS6R - 62.10 - 150x18 - YG812	NCGS06R6210150T	.244	.39	.059	.071	.116	.51	1.50	●
	NCGS6R - 62.15 - 150x18 - YG812	NCGS06R6215150T	.244	.59	.059	.071	.116	.71	1.69	●
	NCGS6R - 62.25 - 150x18 - YG812	NCGS06R6225150T	.244	.98	.059	.071	.116	1.10	2.09	●
	NCGS6R - 62.35 - 150x18 - YG812	NCGS06R6235150T	.244	1.38	.059	.071	.116	1.50	2.48	○
	NCGS6R - 62.10 - 157x18 - YG812	NCGS06R6210157T	.244	.39	.062	.071	.116	.51	1.50	○
	NCGS6R - 62.15 - 157x18 - YG812	NCGS06R6215157T	.244	.59	.062	.071	.116	.71	1.69	○
	NCGS6R - 62.25 - 157x18 - YG812	NCGS06R6225157T	.244	.98	.062	.071	.116	1.10	2.09	○
	NCGS6R - 62.35 - 157x18 - YG812	NCGS06R6235157T	.244	1.38	.062	.071	.116	1.50	2.48	○
	NCGS6R - 62.10 - 198x18 - YG812	NCGS06R6210198T	.244	.39	.078	.071	.116	.51	1.50	○
	NCGS6R - 62.15 - 198x18 - YG812	NCGS06R6215198T	.244	.59	.078	.071	.116	.71	1.69	○
	NCGS6R - 62.25 - 198x18 - YG812	NCGS06R6225198T	.244	.98	.078	.071	.116	1.10	2.09	○
	NCGS6R - 62.30 - 198x18 - YG812	NCGS06R6230198T	.244	1.18	.078	.071	.116	1.30	2.28	○
	NCGS6R - 62.10 - 200x18 - YG812	NCGS06R6210200T	.244	.39	.079	.071	.116	.51	1.50	●
	NCGS6R - 62.15 - 200x18 - YG812	NCGS06R6215200T	.244	.59	.079	.071	.116	.71	1.69	●
	NCGS6R - 62.25 - 200x18 - YG812	NCGS06R6225200T	.244	.98	.079	.071	.116	1.10	2.09	●

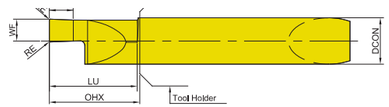
Boring Tool
FI - Face Grooving Internal NEW

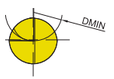


●: Stock item
○: Order made item

DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CW	CDX	WF	OHX	OAL	YG812
6 (.236)	NCFI6R - 62.15 - 10x20 - YG812	NCFI06R6215010T	.244	.59	.004	.039	.08	.116	.71	1.69	●
	NCFI6R - 62.15 - 15x30 - YG812	NCFI06R6215015T	.244	.59	.004	.059	.12	.116	.71	1.69	●
	NCFI6R - 62.15 - 20x40 - YG812	NCFI06R6215020T	.244	.59	.004	.079	.16	.116	.71	1.69	●
	NCFI6R - 62.15 - 25x50 - YG812	NCFI06R6215025T	.244	.59	.004	.098	.20	.116	.71	1.69	●
	NCFI6R - 62.15 - 30x60 - YG812	NCFI06R6215030T	.244	.59	.004	.118	.24	.116	.71	1.69	●

Boring Tool
FE - Face Grooving External NEW



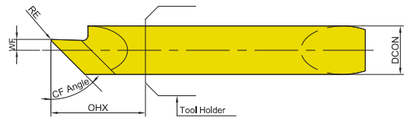


●: Stock item
○: Order made item

DCON mm(inch)	Designation	EDP	Inch (in) DMIN	LU	RE	CW	CDX	WF	OHX	OAL	YG812
6 (.236)	NCFE6R - 62.15 - 10x20 - YG812	NCFE06R6215010T	.244	.59	.004	.039	.08	.116	.71	1.69	●
	NCFE6R - 62.15 - 15x30 - YG812	NCFE06R6215015T	.244	.59	.004	.059	.12	.116	.71	1.69	●
	NCFE6R - 62.15 - 20x40 - YG812	NCFE06R6215020T	.244	.59	.004	.079	.16	.116	.71	1.69	●
	NCFE6R - 62.15 - 25x50 - YG812	NCFE06R6215025T	.244	.59	.004	.098	.20	.116	.71	1.69	●
	NCFE6R - 62.15 - 30x60 - YG812	NCFE06R6215030T	.244	.59	.004	.118	.24	.116	.71	1.69	●

Boring Tool

CH - Chamfering NEW

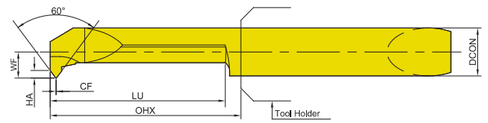


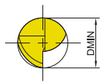
●: Stock item
○: Order made item

KAPR	DCON mm(inch)	Designation	EDP	Inch (in) DMIN	RE	CDX	WF	OHX	OAL	YG812
45°	6 (.236)	NCCH6R-10.03-45-YG812	NCCH06R103045T	.039	.008	.14	.043	.51	1.50	○
60°		NCCH6R-10.04-60-YG812	NCCH06R103060T	.039	.008	.16	.020	.51	1.50	○

Boring Tool

TH - Threading NEW





* P - 60 : Partial Profile, 60°

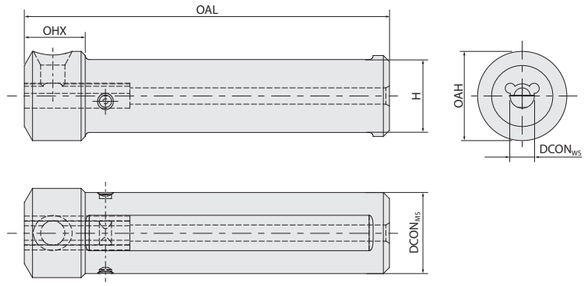
●: Stock item
○: Order made item

DCON mm(inch)	Designation	EDP	Inch(in) DMIN	LU	TPIN	TPIX	WF	HA	CF	OHX	OAL	YG812
4 (.157)	NCTH04R-42.15-050-P-60-YG812	NCTV04R4215050T	.165	.591	36	48	.079	.018	.002	.709	1.299	○
	NCTH04R-42.15-075-P-60-YG812	NCTV04R4215075T	.165	.591	24	32	.093	.026	.004	.709	1.299	○
	NCTH04R-42.15-100-P-60-YG812	NCTV04R4215100T	.165	.591	20	24	.089	.031	.005	.709	1.299	○
6 (.236)	NCTH06R-62.15-100-P-60-YG812	NCTV06R6215100T	.244	.591	20	24	.116	.031	.005	.807	1.693	○
	NCTH06R-62.15-125-P-60-YG812	NCTV06R6215125T	.244	.591	16	20	.091	.038	.006	.807	1.693	○
	NCTH06R-62.15-150-P-60-YG812	NCTV06R6215150T	.244	.591	14	16	.116	.045	.007	.807	1.693	○

YG TURN INCH

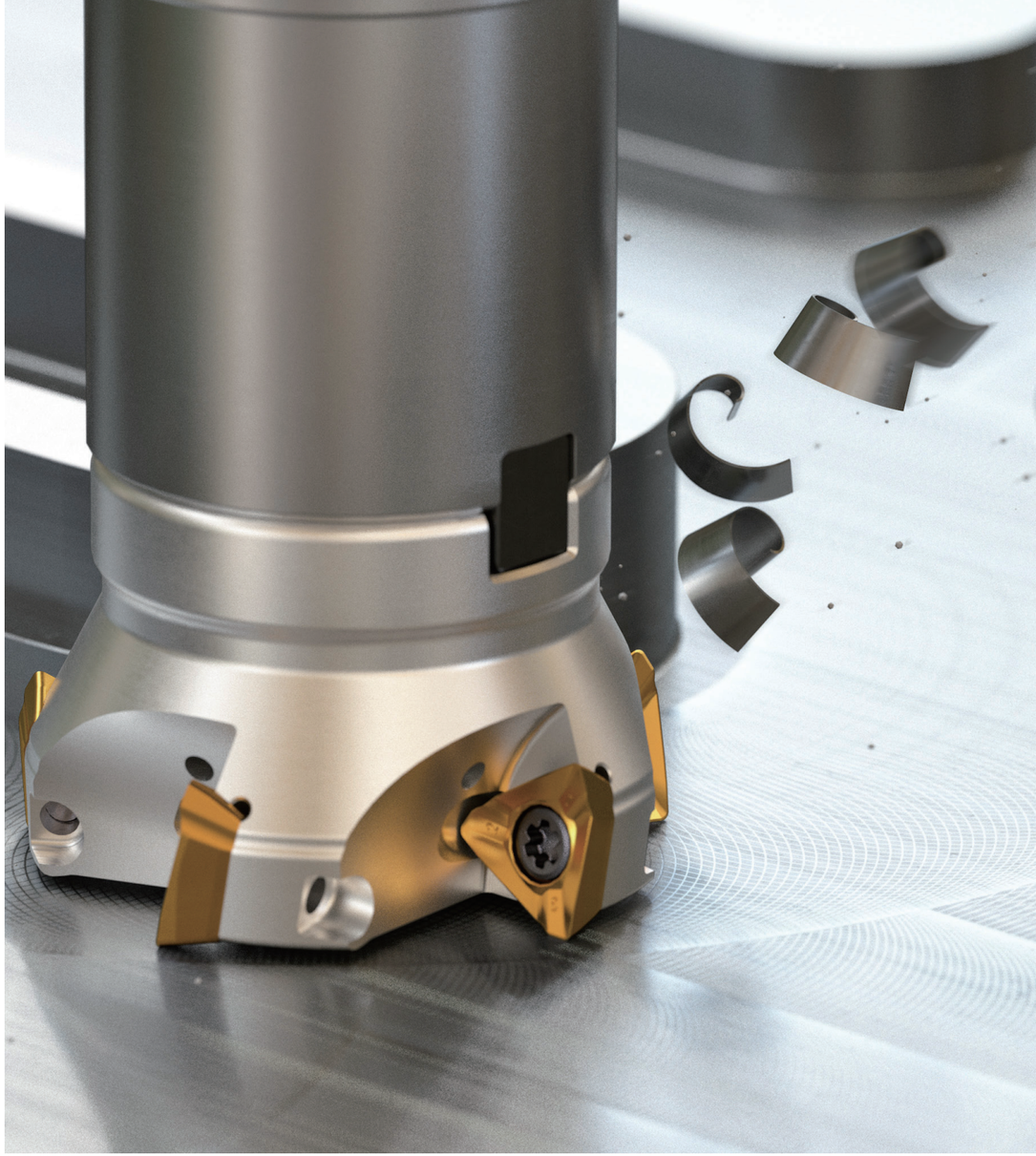
Boring Tool Holder

Holder NEW



Scale	Insert Size ($DCON_{WS}$)	Designation	EDP	$DCON_{MS}$	OAL	H	OAH	OHX
Metric / Inch	4 (.157)	NCHI-0500.4i	ZBR0400500	.500	2.756	.421	.624	.551
		NCHI-0625.4i	ZBR0400625	.625	2.953	.546	.687	
		NCHI-0750.4i	ZBR0400750	.750	4.331	.671	.750	
		NCHI-1000.4i	ZBR0401000	1.000	4.331	.906	1.000	
	6 (.236)	NCHI-0500.6i	ZBR0600500	.500	2.756	.421	.663	
		NCHI-0625.6i	ZBR0600625	.625	2.953	.546	.726	
		NCHI-0750.6i	ZBR0600750	.750	4.331	.671	.827	
		NCHI-1000.6i	ZBR0601000	1.000	4.331	.906	1.000	

YG-1 USA - phone: 800-765-8665, E-mail: yg1usa.com
YG-1 HEAD OFFICE - phone: +82-32-526-0909, www.yg1.kr, E-mail: yg1@yg1.kr



MILLING

Scan this QR code to see our **YG FM10 Mill** at work.

Scan this QR code to see our **YG HF4 Mill** at work.

Insert ISO Code System

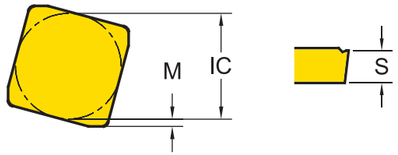
1	2	3	4	5	6	7
A	**P**	**K**	**T**	**16**	**04**	**08**
Shape	Relief Angle (AN)	Tolerance	Clamping & Chipbreaker	Insert Size	Insert Thickness (S)	CornerRadius

1 - Shape

Symbol	Shape	
H	Hexagonal	
O	Octagonal	
P	Pentagonal	
S	Square	
T	Triangular	
V	Rhombic 35˚	
W	Trigon	
L	Rectangular	
A	Parallelogram 80˚	
R	Round	

2 - Relief Angle (AN)

Symbol	Relief Angle (AN)	
N	No Relief Angle	
B	Relief 5˚	AN
C	Relief 7˚	
P	Relief 11˚	
D	Relief 15˚	
E	Relief 20˚	
F	Relief 25˚	
O	Special	



3 - Tolerance Class

Symbol	Inner Circle IC (in)	Nose Height M (in)	Thickness S (in)
C	±.0010	±.0005	±.0010
E	±.001	±.0010	±.001
G	±.001	±.0010	±.005
H	±.0005	± .0005	±.0010
K*	±.002~.006*	±.0005	±.005
M*	±.002~.006*	±.003~.010*	±.005
U*	±.003~.010*	±.005~.015*	±.005

* Tolerance is different by insert IC size. Please see ISO 1832

4 - Clamping & Chipbreaker

Symbol	Clamping	Chipbreaker	Figure
N	No clamping hole	X	
R		One Face	
W	Screw Hole	X	
T		One Face	
U		Both Faces	
X	Special		

5 - Insert Size

* No Standard for milling insert size

6 - Insert Thickness

* No Standard for milling insert thickness

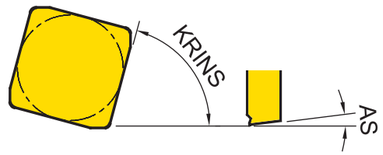
Insert ISO Code System

(	8	9	)	10
	PDTR	**- TR**		**YG602**
	Corner Geometry	Chipbreaker		Grade

7 - Corner Radius (RE)

Symbol	Thickness - S (in)	Symbol	Thickness - S (in)
04	.016	**16**	.063
08	.031	**20**	.079
12	.047	**24**	.094

8 - Corner Geometry



8 - 1	8 - 2	8 - 3	8 - 4
P	**D**	**T**	**R**
Cutting Edge Angle (KRINS)	Wiper Edge Clearance (AS)	Edge Condition	Feed Direction

8 - 1 - Cutting Edge Angle (KRINS)

Symbol	Cutting Edge Angle (KRINS)
P	90˚
A	45˚
D	60˚
E	75˚
F	85˚
Z	Special

8 - 2 - Wiper Edge Clearance (AS)

Symbol	Wiper Edge Clearance (AS)
N	0˚
P	11˚
D	15˚
E	20˚
F	25˚
Z	Special

8 - 3 - Edge Condition

Symbol	Edge Condition	
F	Sharp	
E	Rounded	
T	Chamfered	
S	Chamfered and Rounded	

8 - 4 - Feed Direction

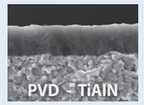
Symbol	Feed Direction	
R	Right - hand Insert	
N	Neutral Insert	
L	Left - hand Insert	

Milling Grades and Chip breakers

Milling Grades

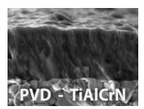
Milling Grades		P Steel					M Stainless steel				K Cast iron				N Non - ferrous				S Super alloys				H Hardened Steel			
		P05	P15	P25	P35	P45	M05	M15	M25	M35	K05	K15	K25	K35	N05	N15	N25	N35	S05	S15	S25	S35	H05	H15	H25	H35
PVD	YG012		012																				012			
	YG712		712																							
	YG713		713																							
	YG622			622									622													
	YG 612			612					612												612					
	YG602			602					602				602							602						
	YG613				613				613																	
	YG501											501														
CVD	YG5020											5020														
Uncoated	YG50															50										

NEW
YG012
H10 - H30
P10 - P30



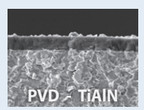
Optimized Milling Grade for Pre - Hardened & Hardened steel
- Applied Extreme Oxidaion PVD layer and Crack - free Substrate
- Excellent Cutting performance for Die & Mold applicaition

YG712
P10 - P30



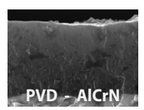
Milling Grade for Medium of Steel Application
- Superior wear resistance and excellent toughness in high speed machining
- Coating layer with high hardness and oxidation resistance

YG713
P15 - P25



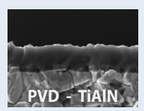
Milling Grade for General Steel Application
- Multi - layer TiAlN structure realizes stronger crater and flank wear resistance
- Fine - grained carbide and balanced substrate

YG622
P20 - P35
K20 - K40



Optimized Grade for High Alloyed or Prehardened Steel
Excellent for High Temperature Hardness and Oxidation Resistance at High Speed

NEW
YG612
P20 - P40
M20 - M40
S20 - S40



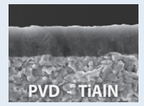
Specialized Multi - Nano Coated Grade with high wear resistance and chipping resistance
- Special Multi - Nano coating prevent crack and providing predictible tool life
- Special universal Grade can acheive stable tool life in any workpiece

TURNING
PARTING & GROOVING
MILLING
DRILLING
TECHNICAL INFORMATION

Milling Grades and Chip breakers

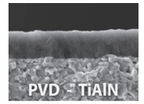
Milling Grades

YG602
P20 - P35 M20 - M40
K20 - K40 S15 - S25



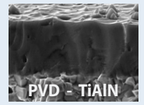
Universal grade for General Milling Application
- Ultra Dense PVD Coating with optimal thermal resistance & strength
- Sub - Micron substrate designed for demanding application

YG613
P30 - P50
M30 - M40



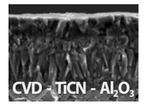
Milling Grade for Stainless Steel Application
- New coating layer with lubrication preventing built - up edge on ultra fine grain substrate with high toughness.
- The toughest substrate provides excellent cutting performance in stainless steel

YG501
K05 - K25



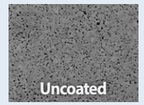
Hard Milling grade for Cast Iron
- Substrate especially designed for high wear resistance
- Excellent wear resistance in cast iron milling application

YG5020
K01 - K30



CVD Milling grade for Cast Iron
- CVD coating for Excellent wear resistance
- Improved Toughness for chipping resistance

YG50
N05 - N20

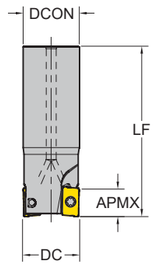


Uncoated Milling Grade for Aluminium
- Submicron carbide substrate for high wear resistance
- Preventing built up edge with shining surface

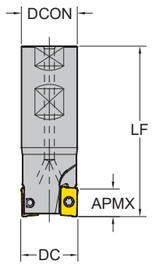
Milling Chipbreakers

–AL		• For Aluminum • Very Sharp Geometry
–ST		• For Stainless Steel, Super Alloy • Sharp Geometry
–GN (General Type)		• First Choice for General Application
–TR		• For Hardened Steels • Reinforced Geometry
...W / ...N		• For Hardened Material and Cast Irons

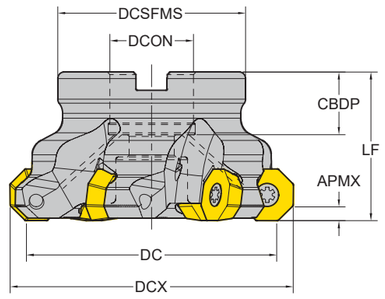
Code Keys - Milling Cutters



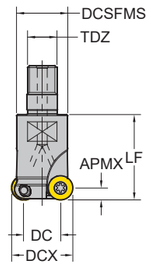
<C> Cylindrical



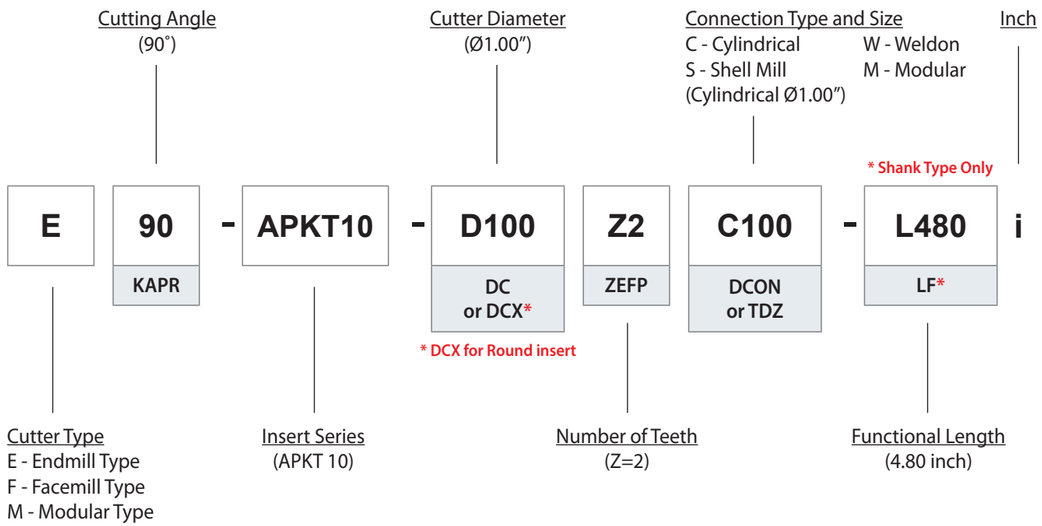
<W> Weldon



<S> Shell Mill



<M> Modular



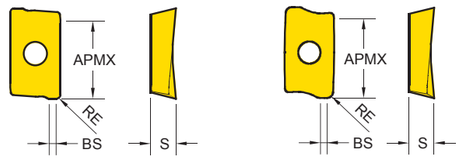
Milling Inserts Overview

Recommended Cutting Conditions : p.165

A 2 Corner	 Positive	**ADKT**	ADKT 1505	p. 104
		AOMT	AOMT 1236	p. 104
		APGT	APGT 1003, 1604	p. 105
		APKT	APKT 1003, 1604	p. 106
		APMT	APMT 1135, 1504, 1604	p. 107
E 4 Corner	 Negative	**ENMX**	ENMX 0604 ENMX 0905	p. 108
L 4 Coner	NEW  Negative	**LNHU / LNKU**	LNHU / LNKU 1306	p. 110
O Octagon	 Positive	**ODMT / ODMW**	ODMT / ODMW 0605	p. 111
		OFER	OFER 0704	p. 112
		OFMT	OFMT 05T3	
	 Negative	**ONHU / ONMU**	ONHU / ONMU 0806	p. 113
P 10 Corner	 Negative	**PNMU**	PNMU1206	p. 114
R Round	 Positive Round	**RDKT / RDKW**	RDKT 0802, 10T3, 1204, 1604 RDKW 0501, 0702, 0802, 10T3, 1204, 1604	p. 115
		RDMT / RDMW	RDMT 0602, 0802, 0803, 10T3, 1204 RDMW 0802, 10T3, 1204	p. 116
		RPMT / RPMW	RPMT 08T2, 10T3, 1204 RPMW 1003, 1204	p. 117
S Square	 High Feed	**SDMT / SDMW**	SDMT 1204, SDMW 1204	p. 118
	 Positive	**SDCN (45°) / SDKN**	SDCN / SDKN 42, 53	p. 119
		SEGT	SEGT 12T3, 1204	p. 120
		SEKR (45°) / SEKN	SEKR, SEKN 42	p. 121
		SEKT	SEKT 12T3, 1204	p. 122
		SEMT	SEMT 1204, 13T3	p. 123
		SPMT	SPMT 1204	p. 124
	 Negative	**SNMX**	SNMX 1206	p. 125
	 ISO	**SPCN(75°) / SPKN / SPKR**	SPCN 42, 53 SPKN 42, 53 SPKR 42	p. 126
		SPUN	SPUN 423	p. 127
T Triangle	NEW  Positive 3 Corner	**TPKT**	TPKT 1104, 1605	p. 128
	 Positive 3 Corner	**TPCN(90°) / TPKN / TPKR**	TPCN 43 TPKN 32, 43 TPKR 32, 43	p. 129
		TPUN	TPUN 32	p. 130
W Trigon	NEW  Negative 6 Corner	**WNEX**	WNEX 0806	p. 131

Milling - Shoulder Milling - Inserts

ADKT / AOMT - Shoulder Milling Positive (2 Corner)



<ADKT>

<AOMT>

Series	LE	IC	S
ADKT 1505	.539	.382	.228
AOMT 1236	.413	.260	.142

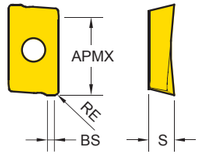
EDP 1200..
●: Stock item ○: Order made item

ADKT	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
ADKT General	ADKT 150508 PDTR	.031	.002 ~ .009	.074						● 0220			
	ADKT 150516 PDTR	.063	.002 ~ .009	.068						● 0755			
	ADKT 150524 PDTR	.094	.002 ~ .009	.047						● 0756			
	ADKT 150532 PDTR	.126	.002 ~ .009	.012						● 0757			

AOMT	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
AOMT General	AOMT 123604 PDTR	.016	.002 ~ .006	.042						● 0217			
	AOMT 123608 PDTR	.031	.002 ~ .006	.036						● 0218	● 0613		

Milling - Shoulder Milling - Inserts

APGT - Shoulder Milling Positive (2 Corner)

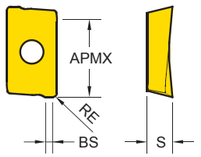


Series	LE	IC	S
AP*T 1003	.598	.370	.209
AP*T 1604	.575	.362	.189

EDP 1200..
●: Stock item ○: Order made item

APGT	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG50
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	N15
NEW - AL Aluminium	APGT 100305 - AL	.02	.002 ~ .010	.055									● 0730
	APGT 160408 - AL	.031	.002 ~ .010	.067									● 0428
	APGT 160430 - AL	.118	.002 ~ .010	.008									● 0798

APKT - Shoulder Milling Positive (2 Corner)

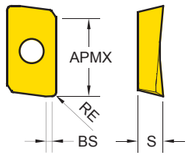


Series	LE	IC	S
APKT 1003	.390	.264	.142
APKT 1604	.598	.370	.209

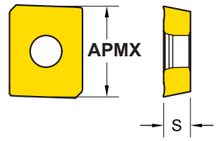
EDP 1200..
●: Stock item ○: Order made item

APKT	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20 YG012	YG712	P15 P25 YG713	P30 K30 YG622	P30 M30 S30 YG612	P30 M30 YG602	P40 M40 S40 YG613	K10 YG5020	K15 YG501
APKT General	APKT 100305 PDTR	.02	.002 ~ .009	.034	● 0749		○ 0638	○ 0429		● 0005	● 0672		
	APKT 100308 PDTR	.031	.002 ~ .009	.035	● 0750		○ 0632	○ 0430		● 0004	● 0610		
	APKT 100316 PDTR	.063	.002 ~ .009	.041						● 0713	● 0714		
	APKT 160404 PDTR	.016	.002 ~ .009	.044			○ 0656			● 0003			
	APKT 160408 PDTR	.031	.002 ~ .009	.052	● 0797		○ 0633			● 0001	● 0607		● 0796
	APKT 160412 PDTR	.047	.002 ~ .009	.044			○ 0649			● 0002			
	APKT 160416 PDTR	.063	.002 ~ .009	.044			○ 0661			● 0006			
	APKT 160424 PDTR	.094	.002 ~ .009	.047			○ 0653			● 0255			
	APKT 160432 PDTR	.126	.002 ~ .009	.016						● 0738			
- ST Stainless Steel Super Alloy	APKT 100305 - ST	.02	.002 ~ .005	.034						● 0278	● 0618		
	APKT 100312 - ST	.047	.002 ~ .005	.052							● 0776		
	APKT 100316 - ST	.063	.002 ~ .005	.041							● 0719		
	APKT 160408 - ST	.031	.002 ~ .005	.052						● 0270	● 0617		
- TR Hardened Steel	APKT 160404 - TR	.016	.002 ~ .016	.083				○ 0505		● 0492			
	APKT 160408 - TR	.031	.002 ~ .016	.052	● 0746		○ 0637	○ 0337		● 0256			
	APKT 160412 - TR	.047	.002 ~ .016	.094				○ 0523		● 0493			
	APKT 160416 - TR	.063	.002 ~ .016	.094	● 0747			○ 0524		● 0472			
	APKT 160424 - TR	.094	.002 ~ .016	.059	● 0748			○ 0520		● 0494			

APMT - Shoulder Milling Positive (2 Corner)



<APMT>



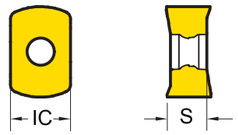
<APMT 1504>

Series	LE	IC	S
APMT 1135	.374	.244	.138
APMT 1604	.575	.362	.187
APMT 1504	.551	.500	.187

EDP 1200..
●: Stock item ○: Order made item

APMT	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20 YG012	YG712	P15 P25 YG713	P30 K30 YG622	P30 M30 S30 YG612	P30 M30 YG602	P40 M40 S40 YG613	K10 YG5020	K15 YG501
APMT General	APMT 113504 PDTR	.016	.002 ~ .009	.05	● 0752		○ 0655	○ 0400		● 0009			
	APMT 113508 PDTR	.031	.002 ~ .009	.042			○ 0654			● 0010	● 0668		
	APMT 160408 PDTR	.031	.002 ~ .009	.044	● 0751	● 0423	○ 0642	○ 0399		● 0008	● 0663		● 0464
APMT 1504 General	APMT 1504		.002 ~ .009					○ 0445		● 0276			

ENMX - High Feed Negative (4 Corners)



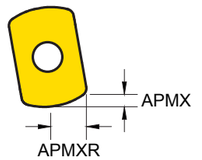
Series	IC	S
ENMX 0604	.248	.166
ENMX 0905	.354	.213

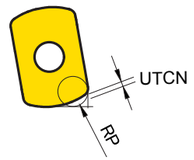
EDP 1200..
●: Stock item ○: Order made item

ENMX		Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
						YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
ENMX General		ENMX 0604		.012 ~ .079		● 0734					● 0474	● 0606		
		ENMX 0905		.012 ~ .098		● 0736					● 0702	● 0703		
- ST Stainless Steel		ENMX 0604 - ST		.004 ~ .031							● 0623	● 0625		
		ENMX 0905 - ST		.008 ~ .047							● 0705	● 0706		
- TR Hardened Steel		ENMX 0604 - TR		.012 ~ .098		● 0733	● 0504	○ 0636			● 0459			
		ENMX 0905 - TR		.012 ~ .118		● 0735					● 0600			

ENMX - High Feed Negative (4 Corners) Technical Information

ENMX 0604





Unit : inch

RP Programmed Corner R	UTCN Uncut Thickness	Overcut
.079	.012	.000
.098	.007	.007
.118	.003	.014


Facing


Plunging


Ramping

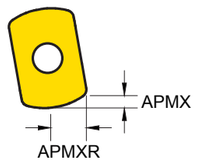

Profiling

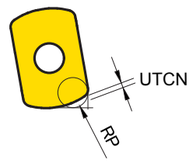

Helical Interpolation


Enlarge Hole

DCX External Cutter Diameter	APMX Maximum Depth of Cut	APMXR Maximum Radial Depth of Cut	RMPX Maximum Ramping Angle(°)	RP Prograined Corner Radius	UTCN Uncut Thickness	Diameter Minimum Cutting Diameter	Diameter Maximum Cutting Diameter	Pitch Helical Interpolation Pitch	Ae Enlarge Width
.625	.035	.137	3.4°	R.079	.011	.817	1.171	.035	.487
.750	.039	.145	2.0°	R.079	.012	1.067	1.421	.039	.612
1.00	.039	.145	1.2°	R.079	.012	1.567	1.921	.039	.862
1.25	.039	.145	0.9°	R.079	.012	2.067	2.421	.039	1.112
1.50	.039	.145	0.7°	R.079	.012	2.567	2.921	.039	1.362
2.00	.039	.145	0.5°	R.079	.012	3.567	3.921	.039	1.862
3.00	.039	.145	0.3°	R.079	.012	5.567	5.922	.039	2.862

ENMX 0905





Unit : inch

RP Programmed Corner R	UTCN Uncut Thickness	Overcut
.098	.022	.000
.118	.015	.004
.137	.009	0.01
.157	.004	.016
.177	.000	.019


Facing


Plunging


Ramping

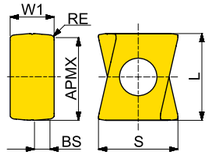

Profiling


Helical Interpolation


Enlarge Hole

DCX External Cutter Diameter	APMX Maximum Depth of Cut	APMXR Maximum Radial Depth of Cut	RMPX Maximum Ramping Angle(°)	RP Prograined Corner Radius	UTCN Uncut Thickness	Diameter Minimum Cutting Diameter	Diameter Maximum Cutting Diameter	Pitch Helical Interpolation Pitch	Ae Enlarge Width
1.0	.059	.185	3.8°	R.098	.022	1.685	1.921	.059	.803
1.25	.059	.185	2.4°	R.098	.022	2.185	2.421	.059	1.053
1.5	.059	.185	1.7°	R.098	.022	2.685	2.921	.059	1.303
2.0	.059	.185	1.1°	R.098	.022	3.685	3.921	.059	1.803
2.5	.059	.185	0.8°	R.098	.022	4.685	4.921	.059	2.303
3.0	.059	.185	0.7°	R.098	.022	5.685	5.921	.059	2.803
4.0	.059	.185	0.4°	R.098	.022	7.685	7.921	.059	3.803
6.0	.059	.185	0.3°	R.098	.022	11.685	11.921	.059	5.803

LNHU, LNKU - Tangential Milling Negative (4 Corners)



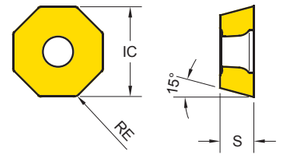
Series	W1	L
LN*U 1306	6.7	13.2

EDP 1200..

●: Stock item ○: Order made item

LNHU LNKU	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
NEW LNHU General 	LNHU130608R	.315	.002 ~ .012	.823					● 0723	○ 0640	● 0724	● 0725	
NEW LNKU General 	LNKU130608R	.315	.002 ~ .012	.823					● 0740	○ 0739	● 0741	● 0742	
	LNKU130612R	.472	.002 ~ .012	.681					● 0764	○ 0763	● 0765	● 0766	

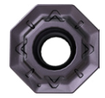
ODMT, ODMW - Face Milling Positive (8 Corners)



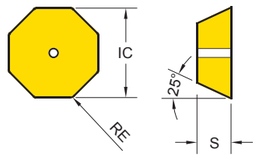
Series	IC	S
ODM* 0605	.626	.220

EDP 1200..

●: Stock item ○: Order made item

ODMT ODMW	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
ODMT General 	ODMT 060508	.031	.002 ~ .012				○ 0659			● 0030	● 0675		
ODMW Hard Materials 	ODMW 060508	.031	.002 ~ .012							● 0031			

OFER, OFMT - Face Milling Positive (8 Corners)



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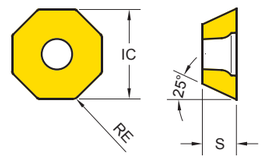


<OFMT>

Series	IC	S
OFER 0704	.711	.188
OFMT 05T3	.501	.160

EDP 1200..
●: Stock item ○: Order made item

OFER

Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
				H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
OFER 070405	.02	.002 ~ .012							● 0209			

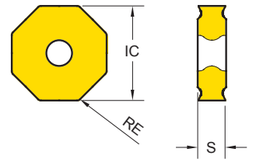
OFER
General

OFMT

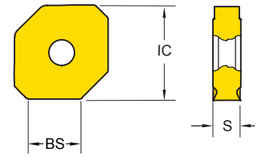
Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
OFMT 05T308	.031	.002 ~ .008							● 0032			

OFMT
General

ONHU / ONMU - Face Milling Negative (16 Corners)



<ONMU>



<ONHU>

Series	IC	S
ON*U 0806	.795	.228

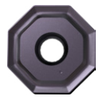
EDP 1200..
●: Stock item ○: Order made item

ONMU ONHU

Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
				H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
ONHU 080612	.047	.003 ~ .010	.417								● 0482	● 0496
ONMU 080608	.031	.002 ~ .014			● 0609	○ 0657			● 0233	● 0670	● 0414	
ONMU 080612	.047	.002 ~ .014								● 0615	● 0542	
ONMU 080620	.079	.002 ~ .014									● 0707	

ONHU
Wiper Insert

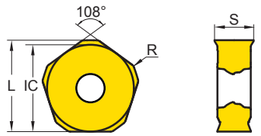
ONMU
General



* Wiper Insert can use 4 corners for right handed cutter and 4 corners for left handed cutter

Milling - Face Milling - Inserts

PNMU - Face Milling Negative (10 Corners)



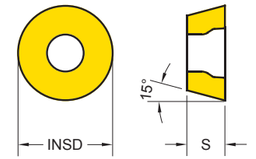
Series	KRINS	IC	S
PNMU 1206	36°	.551	.230

EDP 1200..
●: Stock item ○: Order made item

PNMU	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
					YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501G
PNMU General	PNMU 1206ZNN	.031	.002 ~ .020	.083	● 0753	● 0596	○ 0645		● 0826	● 0535	● 0671	● 0534	● 0538
- ST Stainless Steel Super Alloy	PNMU 1206 - ST	.031	.002 ~ .020	.083						● 0761	● 0760		

Milling - Profiling - Inserts

RDKT / W - Profiling Positive (Round)

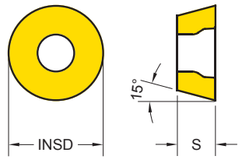


Series	INSD	S	Series	INSD	S
RDK* 0501	.197	.055	RDK* 10T3	.394	.157
RDK* 0702	.276	.094	RDK* 1204	.472	.189
RDK* 0802	.315	.094	RDK* 1604	.630	.187

EDP 1200..
●: Stock item ○: Order made item

RDKT RDKW	Designation	Fz (in/tooth)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
			YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
RDKT General	RDKT 0802M0	.002 ~ .010						● 0035			
	RDKT 10T3M0	.002 ~ .012			○ 0651			● 0041			
	RDKT 1204M0	.002 ~ .020			○ 0635			● 0034	● 0678		
	RDKT 1604M0	.002 ~ .020						● 0539			
- ST Stainless Steel Super Alloy	RDKT 0802M0 - ST	.002 ~ .006						● 0292			
	RDKT 10T3M0 - ST	.002 ~ .008						● 0293	● 0620		
	RDKT 1204M0 - ST	.002 ~ .012						● 0294	● 0621		
- TR Hardened Steel	RDKT 0802M0 - TR	.002 ~ .014	● 0745			○ 0339		● 0284			
	RDKT 10T3M0 - TR	.002 ~ .016	● 0744			○ 0338		● 0285			
	RDKT 1204M0 - TR	.002 ~ .024	● 0743		○ 0650	○ 0340		● 0272			
RDKW Hard Materials	RDKW 0501M0	.002 ~ .008				○ 0412		● 0207			
	RDKW 0702M0	.002 ~ .010			○ 0652	○ 0439		● 0208			
	RDKW 0802M0	.002 ~ .012				○ 0440		● 0043			
	RDKW 10T3M0	.002 ~ .016				○ 0441		● 0040			
	RDKW 1204M0	.002 ~ .024			○ 0647	○ 0442		● 0042			
	RDKW 1604M0	.002 ~ .024	● 0817					● 0720			

RDMT / W - Profiling Positive (Round)

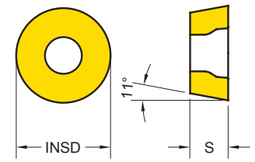


Series	INSD	S	Series	INSD	S
RDM* 0602	.236	.094	RDM* 10T3	.394	.156
RDM* 0802	.315	.094	RD9M* 1204	.472	.187
RDM* 0803	.315	.125			

EDP 1200..
●: Stock item ○: Order made item

RDMT RDMW	Designation	Fz (in/tooth)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
			H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
RDMT General	RDMT 0602M0	.002 ~ .008						● 0693			
	RDMT 0802M0	.002 ~ .010						● 0245			
	RDMT 0803M0	.002 ~ .010						● 0225			
	RDMT 10T3M0	.002 ~ .012						● 0246			
	RDMT 1204M0	.002 ~ .020						● 0226			
RDMW Hard Materials	RDMW 0802M0	.002 ~ .012						● 0227			
	RDMW 10T3M0	.002 ~ .016						● 0228			
	RDMW 1204M0	.002 ~ .024						● 0229			

RPMT / W - Profiling Positive (Round)



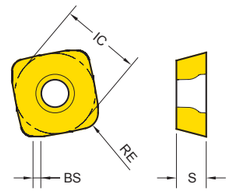
Series	INSD	S	Series	INSD	S
RPM* 08T2	.315	.109	RPM* 1003	.394	.125
RPM* 10T3	.394	.156	RPM* 1204	.472	.187

EDP 1200..
●: Stock item ○: Order made item

RPMT RPMW	Designation	Fz (in/tooth)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
			H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
RPMT General	RPMT 08T2M0	.002 ~ .010			○ 0660			● 0038	● 0676		
	RPMT 10T3M0	.002 ~ .012			○ 0644			● 0036	● 0665		
	RPMT 1204M0	.002 ~ .020		● 0415	○ 0643	○ 0401		● 0037	● 0664		● 0462
- ST Stainless Steel Super Alloy	RPMT 1204M0 - ST	.002 ~ .012						● 0230	● 0667		
RPMW Hard Materials	RPMW 1003M0	.002 ~ .016			○ 0646	○ 0402		● 0204			
	RPMW 1204M0	.002 ~ .024			○ 0648			● 0039			

Milling - High Feed Milling - Inserts

SDMT / W - High Feed Positive (4 Corners)

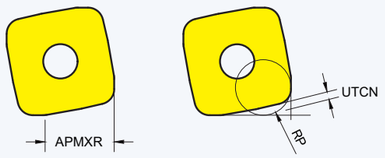


Series	IC	S
SDM* 1204	.500	.185

EDP 1200..
●: Stock item ○: Order made item

SDMT SDMW	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
					YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
- ST Stainless Steel Super Alloy	SDMT 120420 - ST	.075	.024 ~ .047	.057						● 0274	● 0666		
SDMW Hard Materials	SDMW 120420	.075	.024 ~ .055	.055	● 0737		○ 0634	○ 0341		● 0273	● 0691		

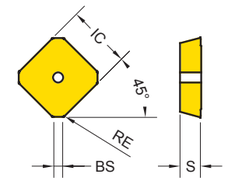
Technical Information



APMXR Radial AP Max	RP Programmed Corner R	UTCN Uncut Thickness
.339	.138	.94

Milling - Face Milling - Inserts

SDCN, SDKN - Face Milling Positive (4 Corners ISO)



Series	AS	IC	S
SD** 42	15°	.500	.125
SD** 53	15°	.625	.187

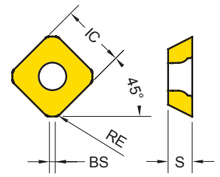
EDP 1200..
●: Stock item ○: Order made item

SDCN SDKN	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
					YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
SDCN Ground insert	SDCN 42 AESN - M	.039	.002 ~ .008	.08		● 0135							
	SDCN 53 AESN - M	.039	.002 ~ .008	.086		● 0150							
	SDCN 53 AESN - MR	.039	.002 ~ .008	.086		● 0201							
SDKN Hard Materials	SDKN 42 AETN	.02	.002 ~ .012	.073						● 0058			
	SDKN 42 AETN - PW	.016	.002 ~ .012	.078						● 0253			
	SDKN 42 AETN - GW	.051	.002 ~ .012	.073						● 0251			
	SDKN 42 AESN - GW	.051	.002 ~ .012	.073	● 0762								
	SDKN 53 AETN	.018	.002 ~ .012	.079						● 0059			
	SDKN 53 AETN - PW	.016	.002 ~ .012	.077						● 0288			
	SDKN 53 AETN - GW	.051	.002 ~ .012	.081						● 0286			

- PW : for Improved Surface Roughness
- GW : Ground Wiper
- M : for Mold & Die
- MR : for Mold & Die Roughing

Milling - Face Milling - Inserts

SEGT - Face Milling Positive (4 Corners)



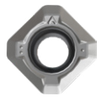
Series	IC	S
SEGT 1204	.500	.193
SEGT 12T3	.528	.159

EDP 1200..
●: Stock item ○: Order made item

SEGT 1204

Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG50
				H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	N15
SEGT 1204 - AL	.047	.002 ~ .012	.079									● 0467

- AL
Aluminium



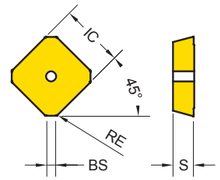
SEGT 12T3

Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG50
				H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	N15
SEGT 12T3 - AL	.047	.002 ~ .012	.076									● 0468

- AL
Aluminium

Milling - Face Milling - Inserts

SEKR / N - Face Milling Positive (4 Corners ISO)



Series	AS	IC	S
SEK* 42	20°	.500	.126

EDP 1200..
●: Stock item ○: Order made item

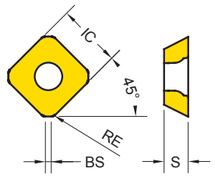
SEKR SEKN

Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
				H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
SEKR General												
SEKR 42 AFTN	.016	.002 ~ .009	.055						● 0051			
SEKR 42 AFTN - PW	.016	.002 ~ .009	.079						● 0296			
SEKN Hard Materials												
SEKN 42 AFTN	.016	.002 ~ .012	.055						● 0054			
SEKN 42 AFTN - GW	.016	.002 ~ .013	.079	● 0774					● 0304			
SEKN 42 AFTN - PW	.016	.002 ~ .013	.079						● 0297			

- PW : for Improved Surface Roughness
- GW : Ground Wiper

Milling - Face Milling - Inserts

SEKT - Face Milling Positive (4 Corners)



Series	IC	S
SEKT 1204	.500	.193
SEKT 12T3	.528	.157

EDP 1200..
●: Stock item ○: Order made item

SEKT 1204

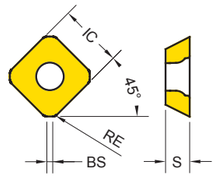
	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
SEKT 1204 General	SEKT 1204 AFTN	.043	.008 ~ .014	.046				○ 0416		● 0055			
- ST Stainless Steel Super Alloy	SEKT 1204 - ST	.043	.003 ~ .012	.079						● 0257	● 0722		

SEKT 12T3

	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
SEKT 12T3 General	SEKT 12T3 AGTN	.059	.002 ~ .009	.051						● 0056			
- ST Stainless Steel Super Alloy	SEKT 12T3 - ST	.059	.002 ~ .005	.079						● 0271	● 0689		

Milling - Face Milling - Inserts

SEMT - Face Milling Positive (4 Corners)



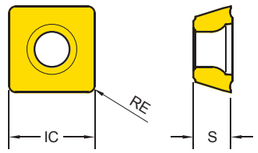
Series	IC	S
SEMT 1204	.509	.201
SEMT 13T3	.528	.157

EDP 1200..
●: Stock item ○: Order made item

SEMT

	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
SEMT 1204 General	SEMT 1204 AFTN	.047	.002 ~ .009	.049						● 0052			
SEMT 13T3 General	SEMT 13T3 AGSN	.059	.002 ~ .009	.052						● 0203			

SPMT - Universal Positive (4 Corners)

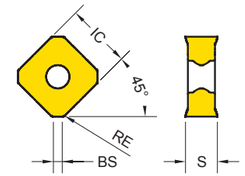


Series	AS	IC	S
SPMT 1204	11°	.500	.189

EDP 1200..
●: Stock item ○: Order made item

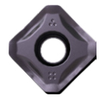
SPMT	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
					YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
SPMT General 	SPMT 120408	.031	.002 ~ .009							● 0223			

SNMX - Face Milling Negative (8 Corners)



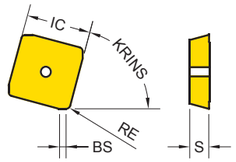
Series	IC	S
SNMX 1206	.500	.246

EDP 1200..
●: Stock item ○: Order made item

SNMX	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
					YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
SNMX General 	SNMX 1206 ANN	.031	.002 ~ .009	.067	● 0754		○ 0658			● 0231	● 0674	● 0460	
	SNMX 1206 QNN	.031	.002 ~ .009	.078		● 0732						● 0731	● 0686

SPCN, SPKN / R - Face Milling Positive (4 Corners ISO)

Series	KRINS	AS	IC	S
SP** 42	75°	11°	.500	.126
SP** 53	75°	11°	.625	.189



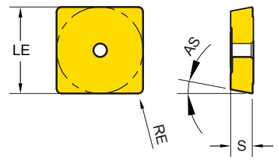
EDP 1200..
●: Stock item ○: Order made item

SPCN SPKN SPKR		Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
						YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
SPCN Ground insert		SPCN 42 EDSR - M	.031	.004 ~ .008	.072		● 0081							
		SPCN 42 EDSR - MR	.031	.004 ~ .008	.07		● 0198							
		SPCN 53 EDSR - M	.031	.004 ~ .008	.076		● 0098							
		SPCN 53 EDSR - MR	.031	.004 ~ .008	.073		● 0199							
SPKN Hard Materials		SPKN 42 EDTR	.031	.002 ~ .012	.055						● 0048			
		SPKN 42 EDTR - GW	.024	.002 ~ .015	.059						● 0280			
		SPKN 42 EDTR - PW	.031	.002 ~ .015	.059						● 0279			
		SPKN 53 EDTR	.031	.002 ~ .009	.051						● 0049			
		SPKN 53 EDTR - GW	.031	.002 ~ .015	.087						● 0305			
		SPKN 53 EDTR - PW	.031	.002 ~ .015	.084						● 0299			
SPKR General		SPKR 42 EDTR	.031	.002 ~ .009	.055						● 0050			
		SPKR 42 EDTR - PW	.031	.002 ~ .004	.061						● 0298			

- PW : for Improved Surface Roughness
- GW : Ground Wiper
- M : for Mold & Die
- MR : for Mold & Die Roughing

SPUN - Universal Positive (4 Corners ISO)

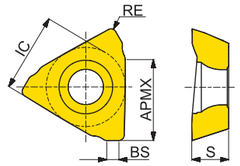
Series	AS	IC	S
SPUN 42	11°	.500	.126



EDP 1200..
●: Stock item ○: Order made item

SPUN		Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
						YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
SPUN General		SPUN 422	.031	.002 ~ .011							● 0224			

TPKT - Shoulder Milling Positive (3 Corner ISO)

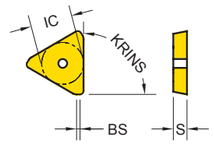


Series	KRINS	IC	S
TP** 1104	90	.297	.168
TP** 1605	90	.459	.212

EDP 1200..
●: Stock item ○: Order made item

TPKT	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20 YG012	P15 YG712	P25 YG713	P30 K30 YG622	P30 M30 S30 YG612	P30 M30 YG602	P40 M40 S40 YG613	K10 YG5020	K15 YG501
NEW TPKT General	TPKT 110404R - GN	.016	.002 ~ .009	.063	● 0802	● 0807			● 0801			● 0808	
	TPKT 110408R - GN	.031	.002 ~ .009	.045	● 0804	● 0811			● 0803			● 0812	
	TPKT 110416R - GN	.063	.002 ~ .009	.024	● 0806	● 0815			● 0805			● 0816	
	TPKT 160508R - GN	.031	.002 ~ .011	.07	● 0781	● 0779			● 0718			● 0780	
	TPKT 160516R - GN	.063	.002 ~ .011	.047	● 0785	● 0786			● 0784			● 0787	
	TPKT 160524R - GN	.094	.002 ~ .011	.028	● 0789	● 0790			● 0788			● 0791	
NEW - ST Stainless Steel Super Alloy	TPKT 110404R - ST	.016	.002 ~ .006	.063					● 0809		● 0810		
	TPKT 110408R - ST	.031	.002 ~ .006	.045					● 0813		● 0814		
	TPKT 160508R - ST	.031	.002 ~ .006	.07					● 0758		● 0759		

TPCN / TPKN / KR - Shoulder Milling Positive (3 Corner ISO)



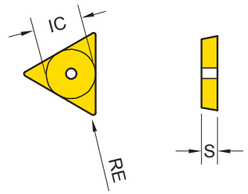
Series	KRINS	IC	S
TP** 32	90°	.375	.125
TP** 43	90°	.500	.187

EDP 1200..
●: Stock item ○: Order made item

TPCN TPKN TPKR	Designation	RE (in)	Fz (in/tooth)	BS (in)	H20 P20 YG012	P15 YG712	P25 YG713	P30 K30 YG622	P30 M30 S30 YG612	P30 M30 YG602	P40 M40 S40 YG613	K10 YG5020	K15 YG501
TPCN Ground insert	TPCN 43 PDSR - M		.002 ~ .008	.069		● 0180							
	TPCN 43 PDSR - MR		.002 ~ .008	.069		● 0202							
TPKN Hard Materials	TPKN 32 PDTR		.002 ~ .008	.047						● 0062			
	TPKN 32 PDTR - GW		.002 ~ .006	.063						● 0306			
	TPKN 32 PDTR - PW		.002 ~ .012	.047						● 0302			
	TPKN 43 PDTR		.002 ~ .009	.067						● 0063			
	TPKN 43 PDTR - GW		.002 ~ .018	.098						● 0307			
	TPKN 43 PDTR - PW		.002 ~ .011	.067						● 0303			
TPKR General	TPKR 32 PDTR		.006 ~ .011	.047						● 0060	● 0690		
	TPKR 32 PDTR - PW		.004 ~ .008	.047						● 0300			
	TPKR 43 PDTR		.007 ~ .014	.067						● 0061	● 0715		
	TPKR 43 PDTR - PW		.007 ~ .014	.067						● 0301			

- PW : for Improved Surface Roughness
- GW : Ground Wiper
- M : for Mold & Die
- MR : for Mold & Die Roughing

TPUN - Universal Positive (3 Corners ISO)

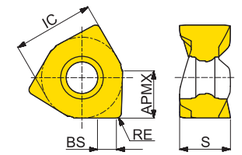


Series	IC	S
TPUN 32	.375	.125

EDP 1200..
●: Stock item ○: Order made item

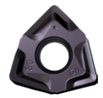
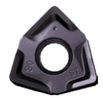
TPUN	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
TPUN General 	TPUN 322	.031	.003 ~ .006							● 0064			

WNEX - Shoulder Milling Negative (6 Corners)



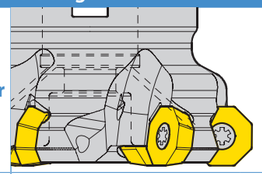
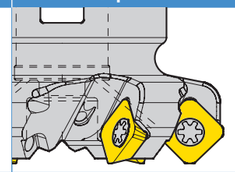
Series	IC	S
WNE* 0806	.508	.246

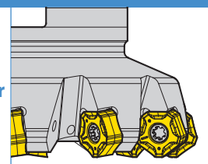
EDP 1200..
●: Stock item ○: Order made item

WNEX	Designation	RE (in)	Fz (in/tooth)	BS (in)	YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG501
					H20 P20	P15	P25	P30 K30	P30 M30 S30	P30 M30	P40 M40 S40	K10	K15
NEW WNEX General 	WNEX 080604R	.016	.002 ~ .010	.126	● 0856	● 0857			● 0855			● 0858	
	WNEX 080608R	.031	.002 ~ .010	.11	● 0859	● 0792			● 0854		● 0793	● 0794	● 0795
	WNEX 080612R	.047	.002 ~ .010	.094	● 0877	● 0878			● 0885			● 0879	
	WNEX 080616R	.063	.002 ~ .010	.079	● 0861	● 0862			● 0860			● 0863	
	WNEX 080620R	.079	.002 ~ .010	.063	● 0882	● 0883			● 0886			● 0884	
NEW - ST Stainless Steel Super Alloy 	WNEX 080604R - ST	.016	.002 ~ .007	.142					● 0864		● 0865		
	WNEX 080608R - ST	.031	.002 ~ .007	.13					● 0866		● 0867		
	WNEX 080612R - ST	.047	.002 ~ .007	.11					● 0875		● 0876		
	WNEX 080616R - ST	.063	.002 ~ .007	.094					● 0868		● 0869		
	WNEX 080620R - ST	.079	.002 ~ .007	.075					● 0880		● 0881		

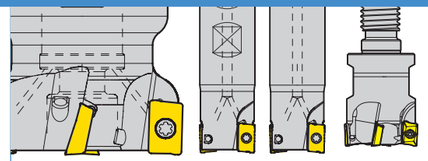
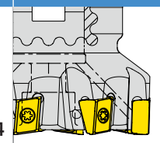
Milling Cutter Overview

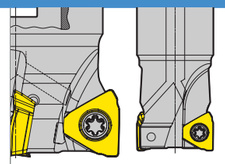
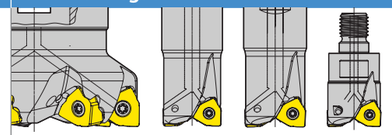
Face Milling

Positive Octagonal			Positive Square		
Cutter		 ODMT/ODMW 0605		 SEKT 1204	 SEGT 1204
APMX	.157			.236	.236
DC	Ø2.5~5.0			Ø1.5~6.0	Ø1.5~6.0
page	p. 138			p. 142	

Negative 10 Corner		
Cutter		 PNMU 1206
APMX	.157	
DC	Ø2.0 ~ 6.0	
page	p. 139	

Shoulder Milling

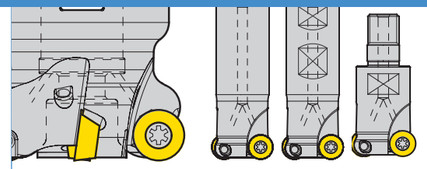
2 Corner Positive			4 Corner Positive	
Cutter		 APKT 1003  APKT 1604		 NEW LNHU/LNKU 1306
APMX		.35 .63		.433
DC		Ø.625~2.0 Ø1.0~4.0		Ø 2.0~10.0
page		p. 134		p. 137

3 Corner Positive			6 Corner Negative	
Cutter		 NEW TPKT 1104  NEW TPKT 1605		 NEW WNEX0806
APMX		.276 .433		.276
DC		Ø 1.25~5.0 Ø 1.25~6.0		Ø 1.25~5.0
page		p. 143 p. 144		p. 145

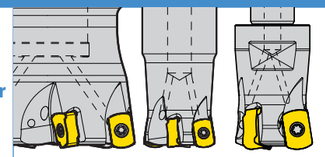
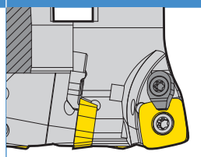
YG MILL INCH

Milling Overview

Profiling

Round Positive				
Cutter		0802	 RDKT / RDKW 10T3	1204
APMX		.157	.196	.236
DCX		Ø.75~1.0	Ø1.0~2.0	Ø1.0~2.5
page			p. 140	

High Feed Milling

Negative 4 Corner				Positive 4 Corner	
Cutter		 ENMX 0604	ENMX 0905		 SDMT/SDMW 1204
APMX		.035	.04 .059		.059
DCX		Ø.625	Ø.625~1.5 Ø1.0~6.0		Ø1.25~6.0
page		p. 135 - 136			p. 141

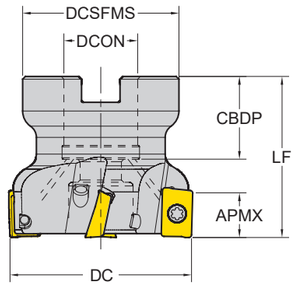
Mounting Bolt

DCON	Descritpion	EDP
Ø0.5" (Ø12.7)	YHBU250-L25.4	18000244
Ø0.75" (Ø19.05)	YHBU375-L25.4	18000245
Ø0.75" (Ø19.05) HF	YHBU375-L31.75	18000246
Ø1.0" (Ø25.4)	YHBU500-L38.1	18000247
Ø1.25" (Ø31.75)	YMBU625-L52	18000248
Ø1.5" (Ø38.1)	YMBU750-L60	18000249
Ø2.0" (Ø50.8)	YMBU1000-L70	18000250

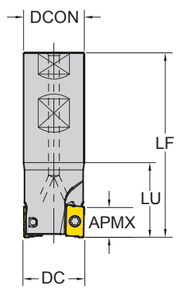
Cutters for APKT

Entry Angle : 90°
2 Corner Positive

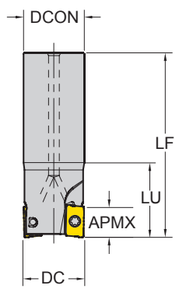
<S> Shell Mill



<W> Weldon



<C> Cyindrical



ZEFP : Effective Number of Cutting Edges
CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 106

Unit : inch

Series	APMX	Designation	EDP 1700..	DC	CICT	LU	LF	TYPE	DCON	CBDP	DCSFMS	PCD1	PCD2	
APKT 1003	.35	E90 - APKT10 - D100Z4C075 - L350I	0149	1.000	4	1.250	3.500	Cylindrical	.750	-	-	-	-	●
		E90 - APKT10 - D0625Z2W0625 - L325I	0144	.625	2	1.340	3.250	Weldon	.625	-	-	-	-	●
		E90 - APKT10 - D075Z3W075 - L320I	0146	.750	3	1.170	3.200		.750	-	-	-	-	●
		E90 - APKT10 - D100Z4W100 - L350I	0148	1.000	4	-	3.500		.100	-	-	-	-	●
		F90 - APKT10 - D150Z4S075I	0150	1.500	4	-	1.575	Shellmill	.750	.750	1.340	-	-	●
		F90 - APKT10 - D200Z7S075I	0151	2.000	7	-	1.750		.750	.750	1.750	-	-	●
APKT 1604	.63	E90 - APKT16 - D100Z2C0875 - L378I	0089	1.000	2	1.220	3.780	Cylindrical	.875	-	-	-	-	●
		E90 - APKT16 - D125Z3C100 - L428I	0090	1.250	3	1.500	4.280		.100	-	-	-	-	●
		E90 - APKT16 - D100Z2W100 - L400I	0158	1.000	2	1.720	4.000	Weldon	.100	-	-	-	-	●
		E90 - APKT16 - D100Z2W100 - L1000I	0208	1.000	2	1.500	10.000		.100	-	-	-	-	●
		E90 - APKT16 - D125Z3W100 - L400I	0159	1.250	3	1.720	4.000		.100	-	-	-	-	●
		E90 - APKT16 - D125Z3W125 - L1000I	0205	1.250	3	1.500	10.000		1.250	-	-	-	-	●
		E90 - APKT16 - D125Z4W125 - L1000I	0206	1.250	4	1.500	10.000		1.250	-	-	-	-	●
		F90 - APKT16 - D200Z5S075I	0160	2.000	5	-	1.750	Shellmill	.750	.750	1.750	-	-	●
		F90 - APKT16 - D250Z6S075I	0161	2.500	6	-	1.750		.750	.750	1.750	-	-	●
		F90 - APKT16 - D300Z7S100I	0162	3.000	7	-	2.000		1.000	.945	2.190	-	-	●
		F90 - APKT16 - D400Z8S150I	0207	4.000	8	-	2.500		1.500	1.570	3.500	-	-	●

* Clamping Torque (Nm) 1.2Nm

APKT10	Screw (Cutter D16~D20)	Screw (Cutter D20~)	Wrench
Description	TP072505	TP072506	TPWFTP07
EDP	18000016	18000013	18000001

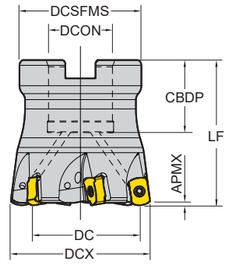
* Clamping Torque (Nm) 3.0Nm

APKT16	Screw	Wrench
Description	TP154008	TPWFTP15
EDP	18000006	18000003

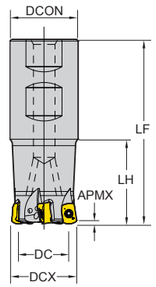
Cutters for ENMX

Entry Angle : 10°
4 Corner Negative

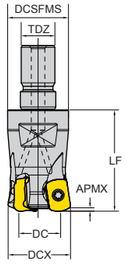
<S> Shell Mill



<W> Weldon



<M> Modular



ZEFP : Effective Number of Cutting Edges
CBDP : Connection Bore Depth

: p. 108

Unit : inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LF	TYPE	DCON	LH	CBDP	DCSFMS	
ENMX 0604	.035	EHF - ENMX06 - D0625Z2W0625 - L500I	0759	.349	.625	2	5.000	Weldon	.625	1.250	-	-	●
		EHF - ENMX06 - D075Z3W075 - L500I	0669	.459	.750	3	5.000		.750	2.000	-	-	●
		EHF - ENMX06 - D100Z4W100 - L550I	0670	.709	1.000	4	5.500		1.000	2.500	-	-	●
		EHF - ENMX06 - D125Z5W125 - L600I	0671	.959	1.250	5	6.000		1.250	3.000	-	-	●
		FHF - ENMX06 - D150Z6S050I	0672	1.209	1.500	6	1.575	Shellmill	.500	-	.750	1.340	●
		FHF - ENMX06 - D200Z6S075I	0673	1.709	2.000	6	1.969		.750	-	.750	1.570	●
		FHF - ENMX06 - D300Z10S100I	0760	2.709	3.000	10	2.480		1.000	-	1.049	2.835	●
	.04	MHF - ENMX06 - D0625Z2M08I	0761	.349	.625	2	1.000	Modular	M08	1.000	-	.512	●
		MHF - ENMX06 - D0705Z2M08I	0762	.429	.705	2	1.000		M08	1.000	-	.512	●
		MHF - ENMX06 - D075Z3M10I	0763	.459	.750	3	1.250		M10	1.250	-	.709	●
		MHF - ENMX06 - D083Z3M10I	0764	.539	.830	3	1.250		M10	1.250	-	.709	●
		MHF - ENMX06 - D100Z4M12I	0765	.709	1.000	4	1.500		M12	1.500	-	.827	●
		MHF - ENMX06 - D1125Z4M12I	0766	.834	1.125	4	1.500		M12	1.500	-	.827	●
		MHF - ENMX06 - D125Z5M16I	0767	.959	1.250	5	1.750		M16	1.750	-	1.142	●
		MHF - ENMX06 - D1375Z5M16I	0768	1.084	1.375	5	1.750		M16	1.750	-	1.142	●
		MHF - ENMX06 - D150Z6M16I	0769	1.209	1.500	6	1.750		M16	1.750	-	1.142	●

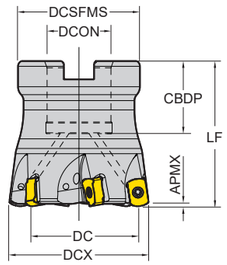
* Clamping Torque (Nm) 1.2Nm

ENMX06	Screw	Wrench	Handle	BIT
Description	TP082507 - GS	TPWBTP08	DH - H4	DB - TP08
EDP	18000206	18000218	18000189	18000190

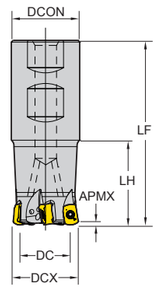
Cutters for ENMX

Entry Angle : 10°
4 Corner Negative

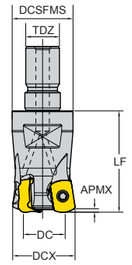
<S> Shell Mill



<W> Weldon



<M> Modular



ZEFP : Effective Number of Cutting Edges
CBDP : Connection Bore Depth

: p. 108

Unit :inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LF	TYPE	DCON	LH	CBDP	DCSFMS	
ENMX 0905	.059	EHF - ENMX09 - D100Z2W100 - L550I	0777	.606	1.000	2	5.500	Weldon	1.000	2.500	-	-	●
		EHF - ENMX09 - D125Z3W125 - L600I	0778	.856	1.250	3	6.000		1.250	3.000	-	-	●
		EHF - ENMX09 - D150Z4W125 - L600I	0779	1.106	1.500	4	6.000		1.250	1.500	-	-	●
		FHF - ENMX09 - D200Z5S075I	0780	1.606	2.000	5	1.969	Shellmill	.750	-	.750	1.750	●
		FHF - ENMX09 - D250Z6S075I	0781	2.106	2.500	6	1.969		.750	-	.750	2.204	●
		FHF - ENMX09 - D300Z8S100I	0782	2.606	3.000	8	2.480		1.000	-	1.049	2.204	●
		FHF - ENMX09 - D400Z10S125I	0783	3.606	4.000	10	2.480		1.250	-	1.260	3.000	●
		FHF - ENMX09 - D500Z12S150I	0882	4.606	5.000	12	2.460		1.500	-	1.381	3.811	●
		FHF - ENMX09 - D600Z14S200I	0784	5.606	6.000	14	2.480		2.000	-	1.496	4.700	●
		MHF - ENMX09 - D100Z2M12I	0852	.606	1.000	2	1.500	Modular	M12	-	-	.827	●
		MHF - ENMX09 - D1125Z2M12I	0853	.731	1.125	2	1.500		M12	-	-	.827	●
		MHF - ENMX09 - D125Z3M16I	0854	.856	1.250	3	1.750		M16	-	-	1.142	●
		MHF - ENMX09 - D1375Z3M16I	0855	.981	1.375	3	1.750		M16	-	-	1.142	●
		MHF - ENMX09 - D150Z4M16I	0856	1.106	1.500	4	1.750		M16	-	-	1.142	●

* Clamping Torque (Nm) 2.0Nm

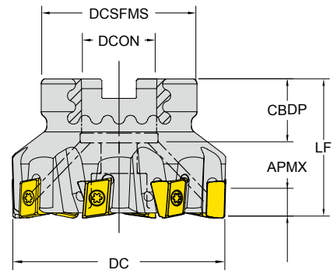
ENMX09	Screw	Wrench	Handle	BIT
Description	TP093510 - GS	TPWBTP09	DH - H4	DB - TP09
EDP	18000214	18000216	18000189	18000209

YG-1 USA - phone: 800-765-8665, E-mail: yg1usa.com
YG-1 HEAD OFFICE - phone: +82-32-526-0909, www.yg1.kr, E-mail: yg1@yg1.kr

Cutters for LNHU, LNKU

Entry Angle : 90°
4 Corner Negative

<S> Shell Mill



ZEFP : Effective Number of Cutting Edges
CBDP : Connection Bore Depth

: p. 110

Unit :inch

Series	APMX	Designation	EDP 1700..	DC	CICT	LF	TYPE	DCON	LH	CBDP	DCSFMS	
NEW LNHU LNKU 1306	.433	F90 - LNHU13R - D200Z4S075I	0891	2.000	4	1.575	Shellmill	.750	-	.748	1.750	●
		F90 - LNHU13R - D200Z5S075I	0892	2.000	5	1.575		.750	-	.748	1.750	●
		F90 - LNHU13R - D250Z7S075I	0893	2.500	7	1.969		.750	-	.748	1.750	●
		F90 - LNHU13R - D300Z6S100I	0894	3.000	6	1.969		1.000	-	.945	2.190	●
		F90 - LNHU13R - D300Z8S100I	0895	3.000	8	1.969		1.000	-	.945	2.190	●
		F90 - LNHU13R - D400Z8S125I	0896	4.000	8	1.969		1.250	-	1.260	2.880	●
		F90 - LNHU13R - D400Z12S125I	0897	4.000	12	1.969		1.250	-	1.260	2.880	●
		F90 - LNHU13R - D500Z10S150I	0898	5.000	10	2.480		1.500	-	1.417	3.810	●
		F90 - LNHU13R - D600Z12S200I	0899	6.000	12	2.480		2.000	-	1.496	4.882	●
		F90 - LNHU13R - D600Z18S200I	0900	6.000	18	2.480		2.000	-	1.496	4.882	●
		F90 - LNHU13R - D800Z16S250I - WOC	0901	8.000	16	2.480		2.500	-	1.378	6.890	X
		F90 - LNHU13R - D1000Z20S250I - WOC	0902	10.000	20	2.480		2.500	-	1.378	8.660	X

* * Clamping Torque (Nm) 3.0Nm

LNKU13	Screw	Wrench	Handle	BIT
Description	TP150412 - GS	TPWBTP15	DH - H6	DB - TP15
EDP	18000225	18000217	18000210	18000208

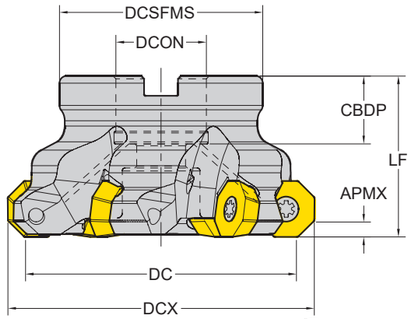
YG-1 USA - phone: 800-765-8665, E-mail: yg1usa.com
YG-1 HEAD OFFICE - phone: +82-32-526-0909, www.yg1.kr, E-mail: yg1@yg1.kr

Milling - Face Milling - Cutter

Cutters for ODMT, ODMW

Entry Angle : 43°
8 Corner Positive

<S> Shell Mill



ZEFP : Effective Number of Cutting Edges
CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 111

Unit:inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LF	TYPE	DCON	CBDP	DCSFMS	PCD1	PCD2	
ODMT ODMW 0605	.157	F43 - ODMT06 - D250Z5S075I	0040	2.500	2.880	5	1.575	Shellmill	.750	.790	2.000	-	-	●
		F43 - ODMT06 - D300Z6S100I	0041	3.000	3.550	6	1.750		1.000	.944	2.500	-	-	●
		F43 - ODMT06 - D400Z7S125I	0042	4.000	4.340	7	2.000		1.250	.980	3.000	-	-	●
		F43 - ODMT06 - D500Z8S150I	0043	5.000	5.320	8	2.380		1.500	1.378	3.650	-	-	●

* Clamping Torque (Nm) 5.3Nm

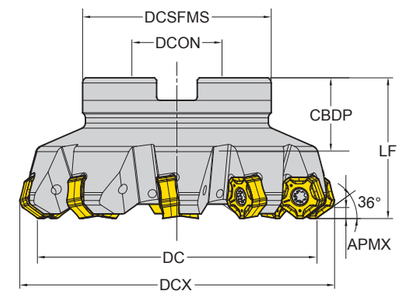
ODMT06	Screw	Wrench
Description	TP205013	TPWFTP20
EDP	18000007	18000004

Milling - Face Milling - Cutter

Cutters for PNMU

Entry Angle: 36°
10 Corner Negative

<S> Shell Mill



ZEFP : Effective Number of Cutting Edges
CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 114

Unit:inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LF	TYPE	DCON	CBDP	DCSFMS	PCD1	PCD2	
PNMU 1206	.157	F36 - PNMU12 - D200Z4S075I	0468	2.000	2.530	4	1.575	Shell Mill	.750	.750	1.750	-	-	●
		F36 - PNMU12 - D250Z5S075I	0788	2.500	3.030	5	1.575		.750	.750	2.000	-	-	●
		F36 - PNMU12 - D300Z8S100I	0469	3.000	3.530	8	2.000		1.000	1.049	2.500	-	-	●
		F36 - PNMU12 - D400Z10S125I	0470	4.000	4.530	10	2.000		1.250	1.269	3.000	-	-	●
		F36 - PNMU12 - D500Z12S150I	0881	5.000	5.530	12	2.250		1.500	1.378	3.540	-	-	●
		F36 - PNMU12 - D600Z14S200I	0863	6.000	6.530	14	2.480		2.000	1.500	4.700	-	-	●

* Clamping Torque (Nm) 3.0Nm

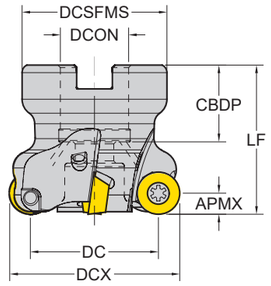
PNMU12	Screw	Wrench	Handle	BIT
Description	TP154008	TPWBTP15	DH - H4	DB - TP15
EDP	18000006	18000217	18000189	18000208

Milling - Profiling - Cutter

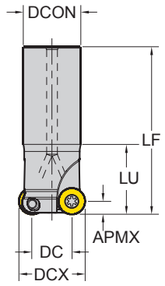
Cutters for RDKT, RDKW

Round Positive

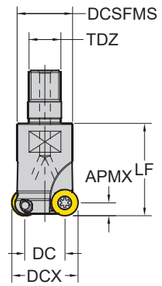
<S> Shell Mill



<C> Cyindrical



<M> Modular



ZEFP : Effective Number of Cutting Edges
CBDP : Connection Bore Depth

○: p. 115

Unit :inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LU	LF	TYPE	DCON	CBDP	DCSFMS	
RDKT, RDKW 0802	.157	E - RDKT08 - D075Z2C075 - L700I	0044	.435	.750	2	1.500	7.000	Cylindrical	.750	-	-	●
		E - RDKT08 - D100Z3C075 - L700I	0045	.685	1.000	3	1.500	7.000		.750	-	-	●
		M - RDKT08 - D075Z2M10I	0046	.435	.750	2	-	1.250	Modular	M10	-	-	●
		M - RDKT08 - D100Z3M12I	0047	.685	1.000	3	-	1.500		M12	-	-	●
RDKT, RDKW 10T3	.197	E - RDKT10 - D100Z2C100 - L700I	0048	.606	1.000	2	1.500	7.000	Cyindrical	1.000	-	-	●
		F - RDKT10 - D150Z5S050I	0050	1.106	1.500	5	-	1.575	Shellmill	.500	.630	1.250	●
		F - RDKT10 - D200Z6S075I	0051	1.606	2.000	6	-	1.750	Modular	.750	.750	1.575	●
		M - RDKT10 - D100Z3M12I	0049	.606	1.000	3	-	1.500		M12	-	.827	●
RDKT, RDKW 1204	.236	E - RDKT12 - D100Z2C100 - L700I	0052	.528	1.000	2	1.500	7.000	Cyindrical	1.000	-	-	●
		E - RDKT12 - D125Z2C125 - L800I	0053	.778	1.250	2	1.500	8.000		1.250	-	-	●
		E - RDKT12 - D125Z3C125 - L600I	0054	.778	1.250	3	1.500	6.000		1.250	-	-	●
		F - RDKT12 - D150Z4S050I	0057	1.027	1.500	4	-	1.575	Shellmill	.500	.630	1.250	X
		F - RDKT12 - D200Z5S075I	0058	1.527	2.000	5	-	1.750		.750	.750	1.575	X
		F - RDKT12 - D250Z6S075I	0059	2.027	2.500	6	-	1.750	Modular	.750	.790	1.750	X
		M - RDKT12 - D100Z2M12I	0055	.527	1.000	2	-	1.500		M12	-	.827	●
		M - RDKT12 - D125Z3M16I	0056	.777	1.250	3	-	1.750		M16	-	1.142	●

* Clamping Torque (Nm) 1.2Nm

RDKT08	Screw	Wrench
Description	TP082505	TPWFTP08
EDP	18000008	18000002

* Clamping Torque (Nm) 3.0Nm

RDKT10	Screw	Wrench
Description	TP154008RD	TPWFTP15
EDP	18000017	18000003

* Clamping Torque (Nm) 3.0Nm

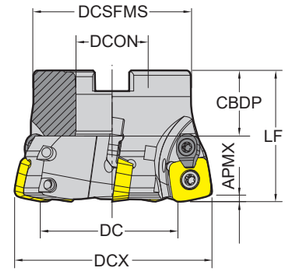
RDKT12	Screw	Wrench	Wedge Clamp
Description	TP154009	TPWFTP15	MTCA - 130813P
EDP	18000010	18000003	18000037

Milling - High Feed Milling - Cutter

Cutters for SDMT, SDMW

Entry Angle : 10°
4 Corner Positive

<S> Shell Mill



ZEFP : Effective Number of Cutting Edges
CBDP : Connection Bore Depth

○: p. 118

Unit :inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LU	LF	TYPE	DCON	CBDP	DCSFMS	
SDMT SDMW 1204	.059	EHF - SDMW12 - D125Z2C125 - L800I	0386	0.559	1.250	2	3.500	8.000	Cylindrical	1.250	-	-	●
		EHF - SDMW12 - D150Z3C150 - L800I	0387	0.807	1.500	3	3.500	8.000		1.500	-	-	●
		FHF - SDMW12 - D200Z5S075I	0388	1.307	2.000	5	-	2.000		.750	.789	1.750	●
		FHF - SDMW12 - D250Z5S100I	0389	1.807	2.500	5	-	2.000		1.000	.945	2.130	●
		FHF - SDMW12 - D300Z5S100I	0436	2.307	3.000	5	-	2.000		1.000	.945	2.130	●
		FHF - SDMW12 - D300Z6S100I	0390	2.307	3.000	6	-	2.000		1.000	.945	1.750	●
		FHF - SDMW12 - D300Z6S125I	0391	2.307	3.000	6	-	2.000		1.250	.945	2.130	●
		FHF - SDMW12 - D300Z7S100I	0437	2.307	3.000	7	-	2.000	Shellmill	1.000	.945	2.130	●
		FHF - SDMW12 - D400Z7S150I	0438	3.307	4.000	7	-	2.550		1.500	1.181	3.810	●
		FHF - SDMW12 - D400Z8S150I	0392	3.307	4.000	8	-	2.550		1.500	1.181	3.810	●
		FHF - SDMW12 - D400Z9S150I	0439	3.307	4.000	9	-	2.550		1.500	1.181	3.810	●
		FHF - SDMW12 - D500Z9S150I	0880	4.307	5.000	9	-	2.550		1.500	1.181	3.810	●
		FHF - SDMW12 - D600Z12S200I	1025	5.307	6.000	12	-	2.480		2.000	1.023	4.700	●

* Clamping Torque (Nm) 3.0Nm

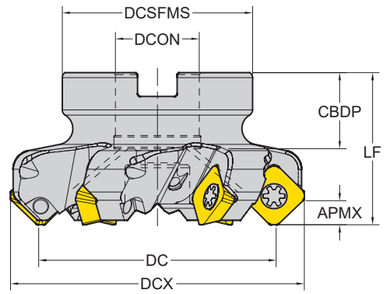
SDMT12	Screw	Wrench	Handle	Wedge Clamp
Description	Y4015 - M4x11	Y80 - T15	18000167	YACK - 15
EDP	18000119	18000167	-	18000069

Milling - Face Milling - Cutter

Cutters for SEGT, SEKT

Entry Angle : 45°
4 Corner Positive

<S> Shell Mill



ZEFP : Effective Number of Cutting Edges
CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 120

Unit:inch

Series	APMX	Designation	EDP 1700..	DC	DCX	CICT	LU	LF	TYPE	DCON	CBDP	DCSFMS	PCD1	PCD2	
SEGT, SEKT 1204	.236	F45-SEKT12-D150Z4S050I	0060	2.060	2.620	4	-	1.575	Shellmill	.500	.642	1.250	-	-	●
		F45-SEKT12-D200Z5S075I	0061	2.560	3.120	5	-	1.575		.750	.742	1.750	-	-	●
		F45-SEKT12-D250Z4S075I	0062	3.060	3.620	4	-	1.575		.750	.750	2.000	-	-	●
		F45-SEKT12-D250Z6S075I	0063	3.060	3.620	6	-	1.575		.750	.750	2.000	-	-	●
		F45-SEKT12-D300Z4S100I	0064	3.560	4.120	4	-	1.750		1.000	.945	2.250	-	-	●
		F45-SEKT12-D300Z7S100I	0065	3.560	4.120	7	-	1.750		1.000	.945	2.250	-	-	●
		F45-SEKT12-D400Z8S125I	0066	4.560	5.120	8	-	2.000		1.250	1.220	3.000	-	-	●
		F45-SEKT12-D500Z10S150I	0067	5.560	6.120	10	-	2.380		1.500	1.378	3.650	-	-	●
		F45-SEKT12-D600Z12S200I	0068	6.560	7.120	12	-	2.380		2.000	1.496	4.700	-	-	●

* Clamping Torque (Nm) 2.4Nm

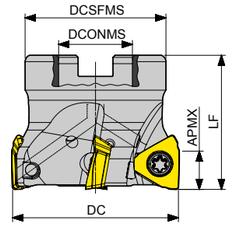
SEKT1204	Screw	Wrench
Description	TP204510	TPWFTP20
EDP	18000011	18000004

Milling - Shoulder Milling - Cutter

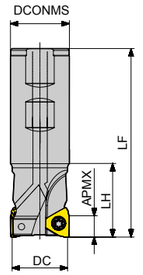
Cutters for TPKT

Entering Angle : 90°
3 Corner Positive

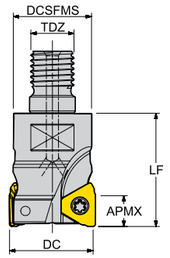
<S> Shellmill



<C> Weldon



<M> Modular



CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 128

Unit:inch

Series	APMX	Designation	EDP 1700..	DC	CICT	LF	TYPE	DCON	LH	CBDP	DCSFMS	
NEW TPKT 1104	.276	E90-TP11-D125Z3W125-L450I	1054	1.250	3	4.500	Weldon	1.250	1.500	-	-	●
		E90-TP11-D125Z3W125-L650I	1055	1.250	3	6.500		1.250	2.500	-	-	●
		E90-TP11-D150Z3W125-L450I	1056	1.500	3	4.500		1.250	2.250	-	-	●
		E90-TP11-D150Z4W125-L450I	1057	1.500	4	4.500		1.250	2.250	-	-	●
		E90-TP11-D200Z5W125-L450I	1058	2.000	5	4.500		1.250	2.250	-	-	●
		F90-TP11-D150Z4S050I	1059	1.500	4	1.375	Shellmill	.500	-	.640	1.378	●
		F90-TP11-D200Z5S075I	1060	2.000	5	1.750		.750	-	.750	1.750	●
		F90-TP11-D250Z6S075I	1061	2.500	6	1.750		.750	-	.750	1.750	●
		F90-TP11-D300Z5S100I	1062	3.000	5	1.750		1.000	-	.750	2.189	●
		F90-TP11-D300Z8S100I	1063	3.000	8	1.750		1.000	-	.750	2.189	●
		F90-TP11-D400Z10S150I	1064	4.000	10	2.375		1.500	-	1.060	2.874	●
		F90-TP11-D400Z8S150I	1065	4.000	8	2.375		1.500	-	1.060	2.874	●
		F90-TP11-D500Z11S150I	1066	5.000	11	2.375		1.500	-	1.060	3.807	●
		M90-TP11-D125Z3M16I	1067	1.250	3	2.410	Modular	M16	1.500	-	1.130	●
		M90-TP11-D150Z4M16I	1068	1.750	4	2.410		M16	1.750	-	1.130	●

* Clamping Torque (Nm) 1.2Nm

TPKT1104 (D20, D21)	Screw	Wrench	Handle	BIT
Description	TP082562-GS	TPWBTP08	DH-H4	DB-TP08
EDP	18000265	18000218	18000189	18000190

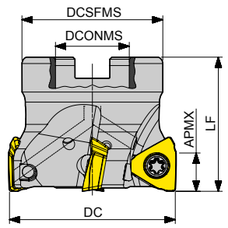
TPKT1104 (over D25)	Screw	Wrench	Handle	BIT
Description	TP082506-GS	TPWBTP08	DH-H4	DB-TP08
EDP	18000259	18000218	18000189	18000190

Milling - Shoulder Milling - Cutter

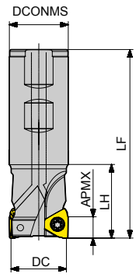
Cutters for TPKT

Entering Angle : 90˚
3 Corner Positive

<S> Shellmill



<C> Weldon



CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 128

Unit:inch

Series	APMX	Designation	EDP 1700..	DC	CICT	LF	TYPE	DCON	LH	CBDP	DCSFMS	
NEW TPKT 1605	.433	E90-TP16-D125Z2W125-L450I	1198	1.250	3	4.500	Weldon	1.250	1.500	-	-	●
		E90-TP16-D150Z3W125-L450I	1199	1.500	4	4.500		1.250	1.500	-	-	●
		E90-TP16-D200Z4W125-L450I	0957	2.000	4	4.500		1.250	1.500	-	-	●
		F90-TP16-D200Z4S075I	0959	2.000	4	1.750	Shellmill	.750	-	.750	1.750	●
		F90-TP16-D200Z5S075I	0960	2.000	5	1.750		.750	-	.750	1.750	●
		F90-TP16-D250Z6S075I	0961	2.500	6	1.750		.750	-	.750	1.750	●
		F90-TP16-D300Z6S100I	0962	3.000	6	1.750		1.000	-	.750	2.189	●
		F90-TP16-D300Z7S100I	0963	3.000	7	1.750		1.000	-	.750	2.189	●
		F90-TP16-D400Z6S150I	0964	4.000	6	2.375		1.500	-	1.417	2.874	●
		F90-TP16-D400Z8S150I	0965	4.000	8	2.375		1.500	-	1.417	2.874	●
		F90-TP16-D500Z9S150I	0966	5.000	9	2.375		1.500	-	1.417	3.807	●
		F90-TP16-D600Z12S150I	0967	6.000	12	2.375		1.500	-	1.417	4.882	●
		F90-TP16-D600Z8S150I	0968	6.000	8	2.375		1.500	-	1.417	4.882	●

* Clamping Torque (Nm) 5.3Nm

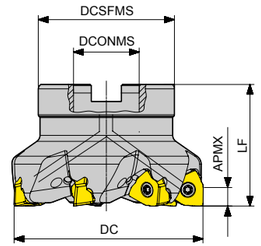
TPKT1605	Screw	Wrench	Handle	BIT
Description	TP2045105	TPWBTP20	DH-H6	DB-TP20
EDP	18000264	18000256	18000210	18000257

Milling - Shoulder Milling - Cutter

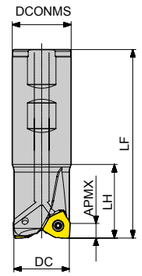
Cutters for WNEX

Entering Angle : 90˚
6 Corner Negative

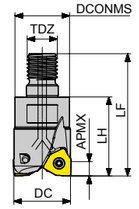
<S> Shellmill



<W> Weldon



<M> Modular



CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 131

Unit:inch

Series	APMX	Designation	EDP 1700..	DC	CICT	LF	TYPE	DCON	LH	CBDP	DCSFMS	
NEW WNEX 0806	.276	E90 - WN08 - D125Z2W125 - L450I	0913	1.250	2	4.500	Weldon	1.250	2.250	-	-	●
		E90 - WN08 - D125Z2W125 - L750I	1077	1.250	2	7.500		1.250	2.500	-	-	●
		E90 - WN08 - D150Z4W125 - L450I	0914	1.500	4	4.500		1.250	1.500	-	-	●
		E90 - WN08 - D150Z4W125 - L750I	1078	1.500	4	7.500		1.250	2.500	-	-	●
		F90 - WN08 - D200Z4S075I	0915	2.000	4	1.575	Shellmill	.750	-	.750	1.732	●
		F90 - WN08 - D200Z5S075I	1079	2.000	5	1.575		.750	-	.750	1.732	●
		F90 - WN08 - D250Z5S075I	0916	2.500	5	1.575		.750	-	.750	1.732	●
		F90 - WN08 - D300Z7S100I	0917	3.000	7	2.00		1.000	-	.750	2.189	●
		F90 - WN08 - D300Z9S100I	1080	3.000	9	2.00		1.000	-	.750	2.189	●
		F90 - WN08 - D400Z9S150I	0918	4.000	9	2.50		1.500	-	1.060	3.503	●
		F90 - WN08 - D400Z11S150I	1081	4.000	11	2.50		1.500	-	1.060	3.503	●
		F90 - WN08 - D500Z11S150I	1082	5.000	11	2.50		1.500	-	1.060	3.503	●
		F90 - WN08 - D500Z14S150I	1083	5.000	14	2.50		1.500	-	1.060	3.503	●
		M90 - WN08 - D125Z2M16I	1084	1.250	2	2.410	Modular	M16	1.500	-	1.130	●
		M90 - WN08 - D150Z3M16I	1085	1.500	3	2.410		M16	1.750	-	1.130	●

* Clamping Torque (Nm) 3.0Nm

WNEX0806	Screw	Wrench	Handle	BIT
Description	TP154011-GS	TPWBTP15	DH-H4	DB-TP15
EDP	18000251	18000217	18000189	18000208

DRILLING

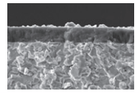
Drilling Overview

Drilling Grades

Drilling Grades		P Steel					M Stainless steel					K Cast iron				
		P05	P15	P25	P35	P45	M05	M15	M25	M35	M45	K05	K15	K25	K35	K45
PVD	YG713		713					713						713		
	YG602			602					602						602	
	YG613				613					613						

YG713
P15 - P30 | M15 - M30
K15 - K30 | H20 - H30

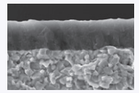
PVD - TiAlN



Drilling Grade for General Steel Application
- Multi - layer TiAlN structure realizes stronger crater and flank wear resistance
- Fine - grained carbide and balanced substrate

YG602
P20 - P35 | M20 - M40
K20 - K40 | S15 - S25

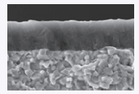
PVD - TiAlN



Universal grade for General Drilling Application
- Ultra Dense PVD Coating with optimal thermal resistance & strength
- Sub - Micron substrate designed for demanding application

YG613
P30 - P50
M30 - M50

PVD - TiAlN



Drilling Grade for Stainless Steel Application
- New coating layer with lubrication preventing built - up edge on ultra fine grain substrate with high toughness.
- The toughest substrate provides excellent cutting performance in stainless steel

Universal Drilling Inserts

	4 Corner	SYMX Series NEW	SYMX	05, 06, 07, 08
	4 Corner	SPMX Series	SPMX	05, 06, 07, 09, 11, 14
	ISO 3 Corner	WCMX Series	WCMX	03, 04, 05, 06, 08

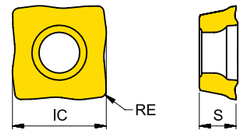
Drilling Chipbreakers

P	M	K			
	M		–ST		• Sharp Geometry • Sticky Material, Stainless Steel
P	M	K	General Inserts (No Description)		• First Choice for General Application

Drilling - Inserts

X - Drill Inserts (SYMX)

Recommended Cutting Conditions : p.165



Series	IC	S
SYMX 0502	.196	.093
SYMX 0602	.236	.093
SYMX 07T2	.275	.110
SYMX 0803	.326	.126

EDP 3200..

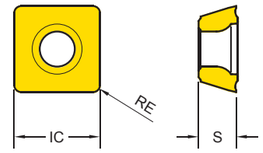
SYMX	Designation	RE (inch)	Fn (inch/rev.)	P25 M25 K30 YG602	P20 M20 K20 YG713	P40 M40 YG613
NEW SYMX General 	SYMX 050204	.016	.002~.005		● 0097	● 0098
	SYMX 060204	.016	.002~.005		● 0093	● 0095
	SYMX 07T206	.024	.002~.005		● 0099	● 0100
	SYMX 080306	.024	.003~.008		● 0101	● 0102

● : Stock item ○ : Order made item

Drilling - Inserts

Square Drill Inserts (SPMX)

Recommended Cutting Conditions : p.165



Series	IC	S
SPMX 0502	.197	.094
SPMX 0602	.236	.095
SPMX 07T3	.313	.156
SPMX 0904	.386	.169
SPMX 1104	.453	.189
SPMX 1405	.563	.205

EDP 3200..

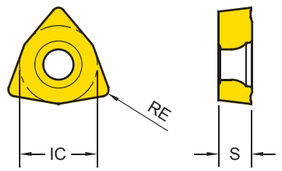
SPMX	Designation	RE (inch)	Fn (inch/rev.)	P25 M25 K30 YG602	P20 M20 K20 YG713	P40 M40 YG613
SPMX General 	SPMX 050204	.016	.003~.006	● 0005	● 0062	● 0077
	SPMX 060204	.016	.003~.006	● 0006	● 0063	● 0078
	SPMX 07T308	.031	.003~.006	● 0007	● 0064	● 0061
	SPMX 090408	.031	.003~.006	● 0008	● 0065	● 0079
	SPMX 110408	.031	.004~.007	● 0009	● 0066	● 0080
	SPMX 140512	.047	.004~.008	● 0010	● 0067	
- ST Stainless Steel 	SPMX 050204 - ST	.016	.001~.004	● 0011		● 0070
	SPMX 060204 - ST	.016	.002~.004	● 0012		● 0071
	SPMX 07T308 - ST	.031	.002~.004	● 0013		● 0068
	SPMX 090408 - ST	.031	.002~.005	● 0014		● 0072
	SPMX 110408 - ST	.031	.002~.005			● 0073
	SPMX 140512 - ST	.047	.002~.006			● 0074

● : Stock item ○ : Order made item

Drilling - Inserts

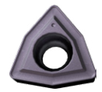
Triagonal Drill Inserts (WCMX)

Recommended Cutting Conditions : p.165



Series	IC	S
WCMX 0302	.219	.094
WCMX 0402	.250	.094
WCMX 0503	.313	.125
WCMX 06T3	.375	.156
WCMX 0804	.500	.187

EDP 3200..

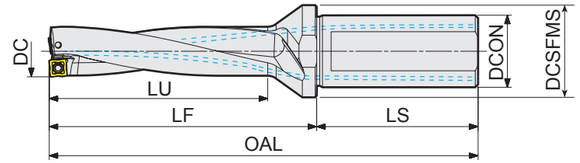
WCMX	Designation	RE (inch)	Fn (inch/rev.)	P25 M25 K30 YG602	P20 M20 K20 YG713	P40 M40 YG613
WCMX General 	WCMX 030208	.031	.002~.005	● 0031	● 0086	
	WCMX 040208	.031	.002~.005	● 0003	● 0087	
	WCMX 050308	.031	.002~.006	● 0001	● 0088	
	WCMX 06T308	.031	.003~.006	● 0002	● 0089	
	WCMX 080412	.047	.003~.006	● 0004	● 0090	● 0091

●: Stock item ○: Order made item

Drilling - Drill Holder

X - Drill Holder (SYMX05) (DC .563 ~ .656)

NEW

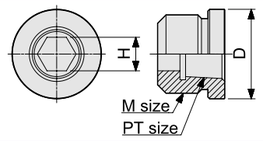


: p. 148

Unit: inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
NEW SYMX 050204	.563	1.126	YGSY2 - 0.563S0.75 - 05I	1067	1.835	3.835	.75	1.125	2.00
		1.689	YGSY3 - 0.563S0.75 - 05I	1083	2.398	4.398			
		2.252	YGSY4 - 0.563S0.75 - 05I	1099	2.961	4.961			
		2.815	YGSY5 - 0.563S0.75 - 05I	1115	3.524	5.524			
	.591	1.182	YGSY2 - 0.591S0.75 - 05I	1068	1.935	3.935			
		1.773	YGSY3 - 0.591S0.75 - 05I	1084	2.529	4.529			
		2.364	YGSY4 - 0.591S0.75 - 05I	1100	3.123	5.123			
		2.955	YGSY5 - 0.591S0.75 - 05I	1116	3.717	5.717			
	.626	1.252	YGSY2 - 0.626S0.75 - 05I	1069	2.037	4.037			
		1.878	YGSY3 - 0.626S0.75 - 05I	1085	2.663	4.663			
		2.504	YGSY4 - 0.626S0.75 - 05I	1101	3.287	5.287			
		3.13	YGSY5 - 0.626S0.75 - 05I	1117	3.913	5.913			
	.656	1.312	YGSY2 - 0.656S0.75 - 05I	1070	2.099	4.099			
		1.968	YGSY3 - 0.656S0.75 - 05I	1086	2.756	4.756			
		2.624	YGSY4 - 0.656S0.75 - 05I	1102	3.411	5.411			
		3.28	YGSY5 - 0.656S0.75 - 05I	1118	4.067	6.067			

PLUG (DCON0.75)



Designation	EDP No.	DCON	ØD	M size	PT size	H
PLUG M12 - 1/8	38000001	0.75	.55	M12x1.0	PT 1/8	.236

* Plug for turning lathe should be ordered separately.

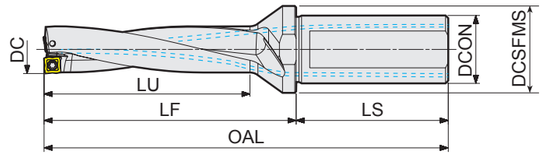
* Clamping Torque (Nm) 0.6Nm

SYMX05	Screw	Wrench
Description	TP062004 - GS	TPWFTP06
EDP	18000252	18000262

Plug	DCON	0.75	1.00	1.25
	Description	PLUG M12 - 1/8	PLUG M14 - 1/8	PLUG M22 - 1/4
	EDP	38000001	38000002	38000003

Drilling - Drill Holder

X - Drill Holder (SYMX06) (DC .689 ~ .813) NEW

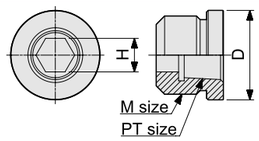


: p. 148

Unit: inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
NEW SYMX 060204	.689	1.378	YGSY2 - 0.689S1.00 - 06I	0870	2.165	5.165	1.00	1.375	3.00
		2.067	YGSY3 - 0.689S1.00 - 06I	0875	2.854	5.854			
		2.756	YGSY4 - 0.689S1.00 - 06I	0880	3.543	6.543			
		3.445	YGSY5 - 0.689S1.00 - 06I	0885	4.232	7.232			
	.719	1.438	YGSY2 - 0.719S1.00 - 06I	0871	2.265	5.265			
		2.157	YGSY3 - 0.719S1.00 - 06I	0876	2.984	5.984			
		2.876	YGSY4 - 0.719S1.00 - 06I	0881	3.703	6.703			
		3.595	YGSY5 - 0.719S1.00 - 06I	0886	4.422	7.422			
	.75	1.5	YGSY2 - 0.750S1.00 - 06I	0872	2.327	5.327			
		2.157	YGSY3 - 0.750S1.00 - 06I	0877	3.077	6.077			
		2.876	YGSY4 - 0.750S1.00 - 06I	0882	3.827	6.827			
		3.595	YGSY5 - 0.750S1.00 - 06I	0887	4.577	7.577			
	.781	1.562	YGSY2 - 0.781S1.00 - 06I	0873	2.467	5.467			
		2.343	YGSY3 - 0.781S1.00 - 06I	0878	3.248	6.248			
		3.124	YGSY4 - 0.781S1.00 - 06I	0883	4.030	7.030			
		3.905	YGSY5 - 0.781S1.00 - 06I	0888	4.811	7.811			
	.813	1.626	YGSY2 - 0.813S1.00 - 06I	0874	2.531	5.531			
		2.439	YGSY3 - 0.813S1.00 - 06I	0879	3.344	6.344			
		3.252	YGSY4 - 0.813S1.00 - 06I	0884	4.157	7.157			
		4.065	YGSY5 - 0.813S1.00 - 06I	0889	4.970	7.970			

PLUG (DCON1.0)



Designation	EDP No.	DCON	ØD	M size	PT size	H
PLUG M14 - 1/8	38000002	1.0	.630	M14x1.0	PT 1/8	.236

* Plug for turning lathe should be ordered separately.

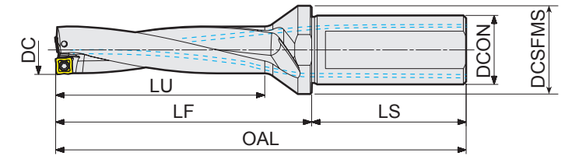
* Clamping Torque (Nm) 0.7Nm

SYMX06	Screw	Wrench
Description	TP072205 - GS	TPWFTP07
EDP	18000253	18000001

Plug	DCON	0.75	1.00	1.25
	Description	PLUG M12 - 1/8	PLUG M14 - 1/8	PLUG M22 - 1/4
	EDP	38000001	38000002	38000003

Drilling - Drill Holder

X - Drill Holder (SYMX07) (DC .843 ~ .906) NEW

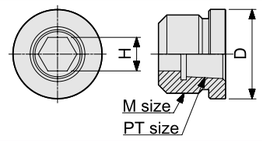


: p. 148

Unit: inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
NEW SYMX 07T206	.843	1.686	YGSY2 - 0.843S1.00 - 07I	1071	2.591	5.591	1.00	1.375	3.00
		2.529	YGSY3 - 0.843S1.00 - 07I	1087	3.435	6.435			
		3.372	YGSY4 - 0.843S1.00 - 07I	1103	4.278	7.278			
		4.215	YGSY5 - 0.843S1.00 - 07I	1119	5.120	8.120			
	.875	1.75	YGSY2 - 0.875S1.00 - 07I	1072	2.656	5.656			
		2.625	YGSY3 - 0.875S1.00 - 07I	1088	3.531	6.531			
		3.5	YGSY4 - 0.875S1.00 - 07I	1104	4.406	7.406			
		4.375	YGSY5 - 0.875S1.00 - 07I	1120	5.281	8.281			
	.906	1.812	YGSY2 - 0.906S1.00 - 07I	1073	2.678	5.678			
		2.718	YGSY3 - 0.906S1.00 - 07I	1089	3.584	6.584			
		3.624	YGSY4 - 0.906S1.00 - 07I	1105	4.490	7.490			
		4.53	YGSY5 - 0.906S1.00 - 07I	1121	5.396	8.396			

PLUG (DCON1.0)



Designation	EDP No.	DCON	ØD	M size	PT size	H
PLUG M14 - 1/8	38000002	1.0	.630	M14x1.0	PT 1/8	.236

* Plug for turning lathe should be ordered separately.

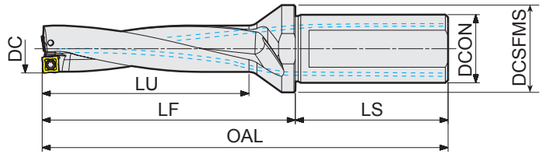
* Clamping Torque (Nm) 0.7Nm

SYMX07	Screw	Wrench
Description	TP072205 - GS	TPWFTP07
EDP	18000253	18000001

Plug	DCON	0.75	1.00	1.25
	Description	PLUG M12 - 1/8	PLUG M14 - 1/8	PLUG M22 - 1/4
	EDP	38000001	38000002	38000003

X - Drill Holder (SYMX08) (DC .937 ~ 1.063)

NEW

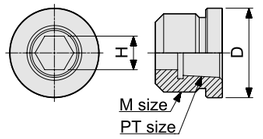


: p. 148

Unit : inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
NEW SYMX 080306	.937	1.874	YGSY2 - 0.937S1.25 - 08I	1074	2.740	5.990	1.25	1.625	3.25
		2.811	YGSY3 - 0.937S1.25 - 08I	1090	3.677	6.927			
		3.748	YGSY4 - 0.937S1.25 - 08I	1106	4.614	7.864			
		4.685	YGSY5 - 0.937S1.25 - 08I	1122	5.551	8.801			
	.969	1.938	YGSY2 - 0.969S1.25 - 08I	1075	2.804	6.054			
		2.907	YGSY3 - 0.969S1.25 - 08I	1091	3.773	7.023			
		3.876	YGSY4 - 0.969S1.25 - 08I	1107	4.742	7.992			
		4.845	YGSY5 - 0.969S1.25 - 08I	1123	5.711	8.961			
	.984	1.968	YGSY2 - 0.984S1.25 - 08I	1076	2.834	6.084			
		2.952	YGSY3 - 0.984S1.25 - 08I	1092	3.818	7.068			
		3.936	YGSY4 - 0.984S1.25 - 08I	1108	4.802	8.052			
		4.92	YGSY5 - 0.984S1.25 - 08I	1124	5.786	9.036			
	1.000	2.000	YGSY2 - 1.000S1.25 - 08I	1077	2.866	6.116			
		3.000	YGSY3 - 1.000S1.25 - 08I	1093	3.866	7.116			
		4.000	YGSY4 - 1.000S1.25 - 08I	1109	4.866	8.116			
		5.000	YGSY5 - 1.000S1.25 - 08I	1125	5.866	9.116			
	1.031	2.062	YGSY2 - 1.031S1.25 - 08I	1078	2.928	6.178			
		3.093	YGSY3 - 1.031S1.25 - 08I	1094	3.920	7.170			
		4.124	YGSY4 - 1.031S1.25 - 08I	1110	4.990	8.240			
		5.155	YGSY5 - 1.031S1.25 - 08I	1126	6.021	9.271			
	1.063	2.126	YGSY2 - 1.063S1.25 - 08I	1079	2.992	6.242			
		3.189	YGSY3 - 1.063S1.25 - 08I	1095	4.094	7.344			
		4.252	YGSY4 - 1.063S1.25 - 08I	1111	5.118	8.368			
		5.315	YGSY5 - 1.063S1.25 - 08I	1127	6.181	9.431			

PLUG (DCON1.25)



Designation	EDP No.	DCON	ØD	M size	PT size	H
PLUG M22 - 1/4	38000003	1.25	.945	M22x1.25	PT 1/4	.394

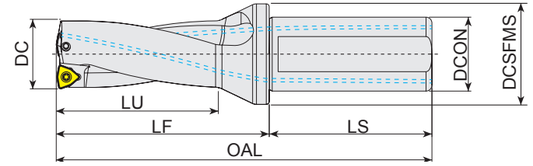
* Plug for turning lathe should be ordered separately.

* Clamping Torque (Nm) 1.2Nm

SYMX08	Screw	Wrench
Description	TP072506 - GS	TPWFTP07
EDP	18000261	18000001

Plug	DCON	0.75	1.00	1.25
	Description	PLUG M12 - 1/8	PLUG M14 - 1/8	PLUG M22 - 1/4
	EDP	38000001	38000002	38000003

Trigonal Drill Holder (WCMX03) (DC .750)



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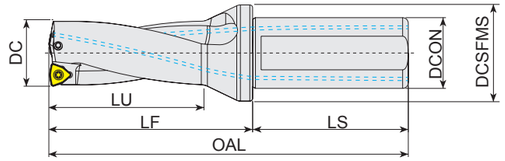
Unit : inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
WCMX 030208	.750	2.250	YGWC3 - 0750S100F2250 - 03	0811	3.110	5.315	1.000	1.260	2.205
		3.750	YGWC5 - 0750S100F3750 - 03	0823	4.606	6.811			

* Clamping Torque (Nm) 0.6Nm

WCMX03	Screw	Wrench
Description	T0622557	TWFT06
EDP	18000183	18000031

Trigonal Drill Holder (WCMX04) (DC .8125 ~ .875)



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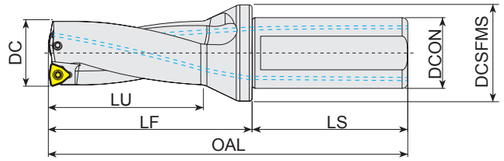
Unit : inch

Series	DC	LU	Designation	EDP 370..	LF	OAL	DCON	DCSFMS	LS
WCMX 040208	.8125	2.433	YGWC3 - 0812S100F2433 - 04	0812	3.228	5.433	1.000	1.260	2.205
		4.055	YGWC5 - 0812S100F4055 - 04	0824	5.000	7.205			
	.875	2.624	YGWC3 - 0875S100F2624 - 04	0813	3.465	5.669			
		4.374	YGWC5 - 0875S100F4374 - 04	0825	5.197	7.402			

* Clamping Torque (Nm) 1.2Nm

WCMX04	Screw	Wrench
Description	T072565D	TWFT07
EDP	18000184	18000032

Trigonal Drill Holder (WCMX05) (DC .937 ~ 1.125)



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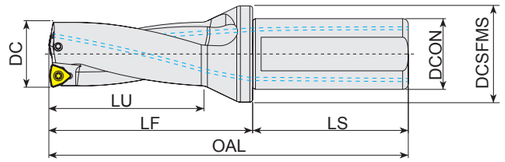
Unit : inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
WCMX 050308	.937	2.811	YGWC3 - 0937S100F2811 - 05	0814	3.701	5.906	1.000	1.260	2.205
		4.685	YGWC5 - 0937S100F4685 - 05	0826	5.591	7.795			
	1.000	3.000	YGWC3 - 1000S100F3000 - 05	0815	3.819	6.024			
		5.000	YGWC5 - 1000S100F5000 - 05	0827	5.787	7.992			
	1.063	3.189	YGWC3 - 1063S100F3189 - 05	0816	4.055	6.260			
		5.315	YGWC5 - 1063S100F5135 - 05	0828	6.181	8.386			
	1.125	3.366	YGWC3 - 1125S100F3366 - 05	0817	4.173	6.378			
		5.610	YGWC5 - 1125S100F5610 - 05	0829	6.476	8.681			

* Clamping Torque (Nm) 1.6Nm

WCMX05	Screw	Wrench
Description	T693072D	TWFT08
EDP	18000185	18000033

Trigonal Drill Holder (WCMX06) (DC 1.250 ~ 1.750)



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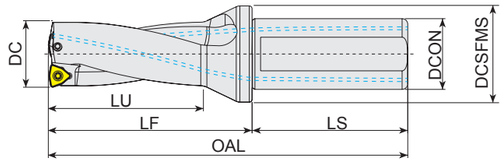
Unit : inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
WCMX 06T308	1.250	3.750	YGWC3 - 1250S125F3750 - 06	0818	4.843	7.205	1.250	1.575	2.362
		6.250	YGWC5 - 1250S125F6250 - 06	0830	7.313	9.675			
	1.375	4.122	YGWC3 - 1375S125F4122 - 06	0819	5.197	7.559			
		6.870	YGWC5 - 1375S125F6870 - 06	0831	7.953	1.315			
	1.500	4.500	YGWC3 - 1500S125F4500 - 06	0820	5.551	7.913			
		7.500	YGWC5 - 1500S125F7500 - 06	0832	8.543	1.906			
	1.750	5.250	YGWC3 - 1750S125F5250 - 06	0821	6.260	8.622			
		8.750	YGWC5 - 1750S125F8750 - 06	0833	9.969	12.331			

* Clamping Torque (Nm) 2.4Nm

WCMX06	Screw	Wrench
Description	T103588D	TWFT10
EDP	18000180	18000034

Trigonal Drill Holder (WCMX08) (DC 2.000)



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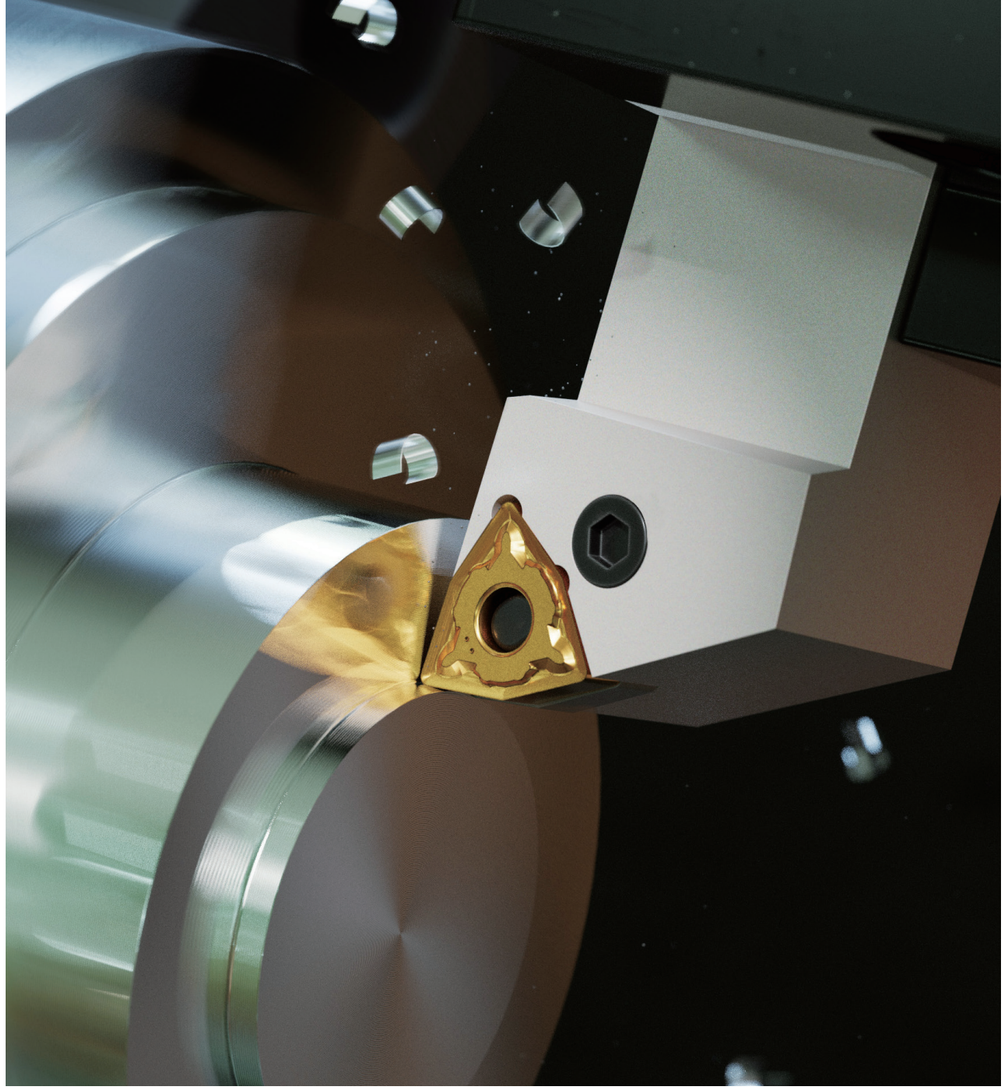
Unit : inch

Series	DC	LU	Designation	EDP 3700..	LF	OAL	DCON	DCSFMS	LS
WCMX 080412	2.000	6.000	YGWC3 - 2000S150F6000 - 08	0822	7.283	1.039	1.500	1.969	2.756
		10.000	YGWC5 - 2000S150F10000 - 08	0834	11.299	14.055			

* Clamping Torque (Nm) 3.0Nm

WCMX08	Screw	Wrench
Description	T154011D	TWFT15
EDP	18000186	18000035



TECHNICAL INFORMATION

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Technical Information

ISO 13399 Terms

AN	Clearance angle major	**INSD**	Insert diameter
APMX	Maximum depth of cut	**KAPR**	Tool cutting edge angle
AS	Clearance angle wiper edge	**KRINS**	Cutting edge angle major
B	Shank width	**KWW**	Keyway width
BS	Wiper edge length	**L**	Cutting edge length
CBDP	Connection bore depth	**LE**	Cutting edge effective length
CDX	Cutting depth maximum	**LF**	Functional length
CICT	Number of Inserts	**LH**	Head length
CW	Cutting width	**LS**	Shank length
CZC	Connection size code	**LU**	Usable length
DC	Cutting diameter	**LUX**	Usable length maximum
DCON	Connection diameter	**M**	Nose (or Wiper) Height
DCSFMS	Contact surface diameter machine side	**OAL**	Overall length
DCX	Cutting diameter maximum	**RE**	Corner radius
DMIN	Minimum bore diameter	**RMPX**	Maximum ramping angle
DMM	Shank diameter	**RPMX**	Rotational speed maximum
EPSR	Insert included angle	**S**	Insert thickness
H	Shank height	**TDZ**	Thread diameter size
HAND	Hand	**WF**	Functional width
IC	Inscribed circle diameter		

Technical Information

Hardness Conversion Table

HB	HRc	HRB	HV	N/mm²
199	15	93	199	667
203	16	94	201	680
208	17	95	210	696
212	18	95	218	706
216	19	96	222	716
223	20	97	227	755
229	21	98	235	775
233	22	99	241	794
240	23	100	247	824
245	24	100	252	838
250	25	101	255	853
255	26	102	258	870
262	27	103	262	880
264	28	103	271	892
271	29	104	277	941
277	30	105	285	971
290	31	106	292	990
300	32	107	303	1020
308	33	107	311	1035
314	34	108	320	1049
322	35	108	332	1089
331	36	109	342	1118
341	37	109	351	1157
348	38	110	361	1187
360	39	111	376	1236
373	40	111	388	1265
375	41	112	393	1314
388	42	113	406	1363
402	43	114	424	1390
415	44	114	438	1422
419	45	114	448	1447
430	46	115	458	1471
445	47	115	474	1520
456	48	116	490	1569
468	49	117	497	
469	50	117	505	
486	51	118	531	
504	52	118	549	
513	53	119	567	
534	54	120	589	
552	55		649	
572	56		694	
592	57		727	
601	58		746	
613	59			
627	60			
642	61			
658	62			
681	63			
695	64			
HB	HRc	HRB	HV	N/mm²

Technical Information

Formulas

Formulas

Cutting Speed (Vc)	Metric Vc = D × RPM × .0031 (m/min.)	Inch Vc = D × RPM × .262 (ft/min.)
	Metric Vc to Inch Vc Inch Vc = Metric Vc × 3.28 (ft/min.)	
	Inch Vc to Metric Vc Metric Vc = Inch Vc × .305 (m/min.)	

Turning Formulas

Spindle Speed (RPM)	Metric RPM = Vc × 318.3 ÷ D (rev./min.)	Inch RPM = Vc × 3.82 ÷ D (rev./min.)
Feed Rate (Vf = Table Feed)	Vf = Fn × RPM (mm/min. or in/min.)	
Feed per Revolution (Fn)	Fn = Vf ÷ RPM (mm/rev. or in/rev.)	
Metal Removal Rate (Q)	Metric Q = Vc × Fn × Ap (cm^3/min.)	Inch Q = Vc × Fn × Ap × 12 (in^3/min.)
Cutting Time	T = L ÷ Vf (min.)	

Milling Formulas

Feed per Revolution (Fn)	Fn = Vf ÷ RPM (mm/rev. or in/rev.) = Fz x Number of tooth (mm/rev. or in/rev.)	
Feed per Tooth (Fz)	Fz = Vf ÷ RPM ÷ Number of teeth (mm/rev. or in/rev.) = Fn ÷ Number of teeth (mm/rev. or in/rev.)	
Metal Removal Rate (Q)	Metric Q = Ap x Ae x Vf ÷ 1000 (cm^3/min.)	Inch Q = Ap x Ae x Vf (in^3/min.)
Cutting Time	T = L ÷ Vf (min.)	
Power Consumption (Pc)	Metric Pc = Ap x Ae x Vf x Kc x .000000017 (kW)	Inch Pc = Ap x Ae x Vf x Kc x .00000253 (Hp)

Drilling Formulas

Power Consumption (Pc)	Metric Pc = Fn x Vc x D x Kc x .0000042 (kW)	Inch Pc = Fn x Vc x D x Kc x .0000076 (Hp)
Torque (Mc)	Metric Mc = Pc x 9554.1 ÷ RPM (Nm)	Inch Mc = Pc x 5255 ÷ RPM (lbf ft)
Thrust (T)	T ≒ .5 x Kc x DC/2 x Fn x sin KAPR (N)	

Terms

N (RPM)	Spindle Speed (Revolution per minute)
Vc	Cutting Speed
D	Work Diameter
Vf	Feed Rate (Table Feed)
Fn	Feed per Revolution
Fz	Feed per Tooth
Ap	Depth of Cut
Q	Metal Removal Rate
L	Length of cut
T	Cutting Time (min.)

Recommended cutting conditions

Turning

Cutting Speed			Vc (ft/min)													
ISO	VDI	Sub Group	YG1010		YG1001		YG3010		YG3115		YG3115		YG3020		YG3030		YG801	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
P	1~5	Non - Alloyed Steel	-	-	-	-	750	1480	660	1410	590	1640	520	1250	430	1150	390	660
	6~9	Low - Alloyed Steel	-	-	-	-	590	1250	490	1150	560	1480	460	1050	430	920	230	660
	10~11	High - Alloyed Steel	-	-	-	-	200	660	300	590	200	980	200	430	230	360	-	-
M	12~13	Ferritic & Martensitic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14	Austenitic Stainless Steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	15~16	Grey Cast Iron	980	1480	820	1380	390	980	-	-	-	-	-	-	-	-	-	-
	17~18	Nodular Cast Iron	390	1150	390	980	390	920	-	-	-	-	-	-	-	-	-	-
N	21~30	Non - Ferrous Metals (Al)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	31~37	Superalloys & Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	38~41	Hard Materials	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Turning

Cutting Speed			Vc (ft/min)													
ISO	VDI	Sub Group	YG2025		YG211		YG213		YG214		YG401		YT100		YG100		YG10	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
P	1~5	Non - Alloyed Steel	-	-	-	-	-	-	-	-	-	-	492	1575	-	-	-	-
	6~9	Low - Alloyed Steel	-	-	-	-	-	-	-	-	-	-	524	1575	-	-	-	-
	10~11	High - Alloyed Steel	-	-	-	-	-	-	-	-	-	-	230	590	-	-	-	-
M	12~13	Ferritic & Martensitic	560	720	560	890	390	590	330	490	-	-	492	919	-	-	-	-
	14	Austenitic Stainless Steel	490	660	490	750	130	520	330	490	-	-	427	853	-	-	-	-
K	15~16	Grey Cast Iron	-	-	-	-	-	-	-	-	-	-	427	1476	-	-	-	-
	17~18	Nodular Cast Iron	-	-	-	-	-	-	-	-	-	-	328	1312	-	-	-	-
N	21~30	Non - Ferrous Metals (Al)	-	-	-	-	-	-	-	-	-	-	-	-	820	3940	820	2620
S	31~37	Superalloys & Titanium	-	-	-	-	-	-	-	-	100	300	-	-	-	-	-	-
H	38~41	Hard Materials	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Parting & Grooving

Cutting Speed			Vc (ft/min)			
ISO	VDI	Sub Group	YG602G (YG602)		YG603	
			Min	Max	Min	Max
P	1~5	Non - Alloyed Steel	390	590	-	-
	6~9	Low - Alloyed Steel	330	460	-	-
	10~11	High - Alloyed Steel	260	360	-	-
M	12~13	Ferritic & Martensitic	230	520	160	300
	14	Austenitic Stainless Steel	180	460	130	260
K	15~16	Grey Cast Iron	360	610	-	-
	17~18	Nodular Cast Iron	360	460	-	-
N	21~30	Non - Ferrous Metals (Al)	820	1440	-	-
S	31~37	Superalloys & Titanium	80	150	-	-
H	38~41	Hard Materials	80	160	-	-

Recommended cutting conditions

Nanocut

YG812 GRADE			Cutting Speed		Feed Rate (Fn)	
ISO	VDI	Sub Group	Vc (ft/min.)		Fn (in/rev.)	
			Min	Max	Min	Max
P	1~5	Non - Alloyed Steel	560	660	.0006	.001
	6~9	Low - Alloyed Steel	310	520	.0006	.001
	10~11	High - Alloyed Steel	280	310	.0006	.001
M	12~13	Ferritic & Martensitic	340	460	.0006	.001
	14	Austenitic Stainless Steel	310	430	.0006	.001
K	15~16	Grey Cast Iron	460	620	.0006	.001
	17~18	Nodular Cast Iron	460	620	.0006	.001
N	21~30	Non - Ferrous Metals (Al)	-	-	-	-
S	31~37	Superalloys & Titanium	30	250	.0006	..001
H	38~41	Hard Materials	-	-	-	-

Milling

Cutting Speed			Vc (ft/min)																			
ISO	VDI	Sub Group	YG012		YG712		YG713		YG622		YG612		YG602		YG613		YG501(G)		YG5020		YG50	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
P	1~5	Non - Alloyed Steel	590	920	560	980	660	980	460	1310	590	920	590	1250	330	690	-	-	-	-	-	-
	6~9	Low - Alloyed Steel	490	820	590	820	560	890	390	1050	490	820	390	980	230	590	-	-	-	-	-	-
	10~11	High - Alloyed Steel	260	490	330	460	280	480	230	560	260	490	230	490	130	290	-	-	-	-	-	-
M	12~13	Ferritic & Martensitic			-	-	-	-	-	-	390	660	390	660	230	590	-	-	-	-	-	-
	14	Austenitic Stainless Steel			-	-	-	-	-	-	430	820	430	820	230	660	-	-	-	-	-	-
K	15~16	Grey Cast Iron			-	-	-	-	390	890			390	820	-	-	520	980	660	1150	-	-
	17~18	Nodular Cast Iron			-	-	-	-	430	790			430	720	-	-	390	690	490	980	-	-
N	21~30	Non - Ferrous Metals (Al)			-	-	-	-	-	-			-	-	-	-	-	-	-	-	980	2620
S	31~37	Superalloys & Titanium			-	-	-	-	-	-	80	450	80	150	-	-	-	-	-	-	-	-
H	38~41	Hard Materials	230	340	-	-	-	-	130	330			130	260	-	-			-	-	-	-

Drilling

Cutting Speed			Vc (ft/min)					
ISO	VDI	Sub Group	YG602		YG713		YG613	
			Min	Max	Min	Max	Min	Max
P	1~5	Non - Alloyed Steel	590	1250	660	980	330	690
	6~9	Low - Alloyed Steel	390	980	560	890	230	590
	10~11	High - Alloyed Steel	230	490	280	480	130	300
M	12~13	Ferritic & Martensitic	390	660	460	720	230	590
	14	Austenitic Stainless Steel	430	820	430	820	230	660
K	15~16	Grey Cast Iron	390	820	390	850	-	-
	17~18	Nodular Cast Iron	430	720	430	750	-	-
H	38~41	Hard Materials	-	-	-	-	-	-

Technical Information

Material Groups

ISO		VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	Examples
P	1		Non - alloyed steel	~ .15% C	Annealed	125		S15C, C15, 1015
	2			~ .45% C	Annealed	190	13	S45C, C45, 1045
	3			~ .45% C	Quenched & Tempered	250	25	
	4			~ .75% C	Annealed	270	28	SK5, Ck75, 1080
	5			~ .75% C	Quenched & Tempered	300	32	
	6		Low - alloyed Steel		Annealed	180	10	SCM440, 42CrMo4, 410
	7				Quenched & Tempered	275	29	
	8				Quenched & Tempered	300	32	
	9				Quenched & Tempered	350	38	
	10		High - alloyed steel, and tool steel		Annealed	200	15	SKD, D2
	11				Quenched & Tempered	325	35	SKH, SUH, M42
M	12		Stainless Steel	Ferritic / Martensitic	Annealed	200	15	SUS 420, X40Cr13, 420
	13			Martensitic	Quenched & Tempered	240	23	
	14			Austenitic		180	10	SUS 316, 316, X5CrNiMo 17 12 2
K	15		Grey cast iron	Pearlitic / Ferritic		180	10	FC, GG, EN - GJL - 250
	16			Pearlitic (Martensitic)		260	26	
	17		Nodular cast iron	Ferritic		160	3	FCD, GGG, EN - GJS - 500 - 7
	18			Pearlitic		250	25	
	19		Malleable cast iron	Ferritic		130		FCMW, FCMP, GTS, GJMB350 - 10
	20			Pearlitic		230	21	
N	21		Aluminum - wrought alloy	Not Curable		60		SAE 1000, AlMg 1, 3.3315
	22			Curable	Hardened	100		SAE 7050, AlCuMg 1, 3.1325
	23		Aluminum - cast, alloyed	≤ 12% Si, Not Curable		75		ADC12, G - AlSi12, 3.2581
	24			≤ 12% Si, Curable	Hardened	90		C4BS, G - AlSi10Mg, 3.2381
	25			> 12% Si, Not Curable		130		
	26		Copper and copper alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		CuZn36Pb 3, 2.0375
	27			CuZn, CuSnZn (Brass)		90		CuZn 15, 2.0240
	28			CuSn, lead - free copper and electrolytic copper		100		G - CuZn40Fe, 2.0590
	29		Non - metallic materials	Duroplastic, Fiber Reinforced Plastic				CFRP
	30			Rubber, Wood, etc.				
S	31		Heat resistant super alloys	Fe Based	Annealed	200	15	X12 NiCrSi 36 - 16, 1.4864
	32				Aged	280	30	
	33			Ni or Co Based	Annealed	250	25	Inconel 718, NiCr20TiAl, 2.4631
	34				Aged	350	38	NiCu30Al, 2.4375
	35				Cast	320	34	G - X120Mn12, 1.3401
	36		Titanium alloys	Pure Titanium		400 Rm		
	37			Alpha + Beta Alloys	Hardened	1050 Rm		TiAl6V4, 3.7165
H	38		Hardened steel		Hardened	550	55	SK3
	39				Hardened	630	60	
	40		Chilled cast iron		Cast	400	42	
	41		Hardened cast iron		Hardened	550	55	

Technical Information

Material Groups

P | VDI 3323: **1** | Material Description: Non - alloyed steel | Composition / Structure / Heat Treatment: About .15% C, Annealed | HB: 125 | HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0037	STKM 12 C	St 37 - 2	-	4360 40 B	S235JR	E24 - 2	1311	Fe 360 B			16D	
1.0038	STKM 12 A	St 37 - 3	A57.36	4360 40 C	S275J2G3	E28 - 3	1312	Fe 360 D FF			ST14KP	
1.0045	SM 490 YA	S 355 JR	-	-	S 1207	E36 - 2	-	Fe 510 BFN				
1.0050	SS 50	St 50 - 2	A570 Gr. 50	4360 50 B	E 295	A50 - 2	2172	Fe 490			ST5PS	
1.0060	SM 58	St 60 - 2	A572 Gr. 65	4360 55 E	-	A60 - 2	1650	Fe 60 - 2			ST6PS	
1.0114		S 235 J0	-	En 40C	S 235 J0	E24 - 3		Fe 360 CFN				
1.0143		S 275 J0	-	-	S 275 J0	E28 - 3	1414	Fe 430 C				
1.0144	SM41C, SM400	St 44 - 3 N	A573 Gr. 81	4360 43C	S 275 J2 G3	E28 - 3	1412	Fe 430 D FF			ST14KP	
1.0149		Ro St 44 - 2	-	43C	S 275 J0 H	-	1412	Fe430C				
1.0301	S10C	C10	1010	045M10	C10	34C10, XC10		C10	F.1511	G10100	10	
1.0330	SPCC	St 12	-	DC 01	Fe P01	DC 01/Fe P01	1142	Fe P01			15KP	
1.0335	SPHE	D D 13 (StW 24)	A622(1008)	H S 3	D D 13	3C		FeP13			08KP	
1.0338	SPCE	St 4	A620(1008)	14491CR	Fe P04	Fe 14	1147	DC04/FeP04			08JU	
1.0345	SPV 50	P 235 GH	A516 Gr. 65	P 235 GH	P 235 GH	A 37 CP	1330	Fe E 235		K02503		
1.0401	S15C	C15	1015	080M15	-	C18RR, XC18	1350	C15, C16	F.1110	G10170	15	
1.0402	S20C	C22	1020	050 A 20	1 C 22	C20	1450	C 20	F.1120	G10200	20	
1.0425	SPV315	P265GH/HII				A42CP	1430	Fe4101KW		K02801	16K	
1.0443	SC 450	GS - 45	A2765 - 35	A1		E23 - 45M	1305					
1.0539		S355NH				TSE355 - 4	2134	Fe510B				
1.0545		S355N		4360 - 50E		E355R	2334	FeE355KG				
1.0546		S355NL		4360 - 50EE		E355FP	2135	FeE355KT				
1.0547		S355J0H		4360 - 50C		TSE355 - 3	2172	Fe510C				
1.0549		S355NLH					2135	Fe510D				
1.0553	SM 520 M	St52 - 3U	A14880 - 40	4360 - 50C		320 - 560M	1606	Fe510C				
1.0562	SM490A	St E 355	A633 Gr. C	P 355 N		FeE355KGN	2132	Fe E 355 KG		K12000	15GF	
1.0565		W St E 355		P 355 NH		P 355 NH	2106	Fe E 355 KW		K01600		
1.0566	SLA 37	T St E 355		P 355 NL1		P 355 NL1	2107	Fe E 355 KT				
1.0570	SM 50 YA	St 52 - 3	1	4360 - 50 C	S355JR	E36 - 3	2172	Fe 510 B			17G1S	
1.0715	SUM22	9SMn28	1213	230M07		S250	1912	CFSMn28	F.2111	G12130		
1.0718	SUM22L	9SMnPb28	12L13			S250Pb	1914	CF9SMnPb28	F.2112	G12134		
1.0721		10S20	1108	10S20		10S20		CF10S20	F.2121	G11080		
1.0722		10SPb20	11L08			10PbF2		CF10SPb20		G11084		
1.0736	SUM25	9SMn36	1215			S300		CF9Mn36	F.2113	G12150		
1.0737		9SMnPb36	12L14			S300Pb	1926	CF9SMnPb36	F.2114	G12144		
1.0972		S315MC		1501 - 40F30		E315D						
1.0976		S355MC		1501 - 43F35		E355D	2642	FeE355TM				
1.0982		S460MC		1501 - 50F45								
1.0984		S500MC				E490D	2662	FeE490TM				
1.0986		S500MC		1501 - 60F55		E560D		FeE560TM				
1.1121	S10C	Ck10	1010	040A10		XC10	1265	C10	F.1510	G10100	10	
1.1141	S15	Ck15	1015	040A15	32C	XC15	1370	C15	F.1110	G10150	15	
1.1151	S20C	C22E	1020	055M15		2C22	1450	C20	F.1120	G10230	20	
1.8900	S25C	StE380	A572 - 60	436055E			2145	FeE390KG				
		St44 - 2	A36	436043A		NFA35 - 501E28	1411					
		StE320 - 3Z		1501160			1421					

Technical Information

Material Groups

P

VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc
2	Non - alloyed steel	About .45% C, Annealed	190	13

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0501	S35C	C35	1035	080A32		1C35	1572	C35	F.113	G10350	35	
1.0503	S45C	C45	1045	060A47		XC42H1TS	1672	C45	F.114	G10450	45	
1.0511	S40C	C40	1040	080M40		1C40		C40	F.114.A	G10400	40	
1.0540	S 50 C	C50					1674	C50		G10500		
1.0551		GS - 52	A2770 - 36	A2		280 - 480M	1505					
1.0553	SM 520 M	St52 - 3U	A14880 - 40	4360 - 50C		320 - 560M	1606	Fe510C				
1.0577		S 355 J 2 G 4	A738	Fe 510 D 2 FF		A52FP	2107					
1.0726		35S20	1140	212M36	8M	35MF6	1957			G11400	40	
1.0727		45S20	1146			45MF4	1973			G11460		
1.1157		40Mn4	1039	150M36	15	40M5				G10390	40G	
1.1158	S25C	C25E	1025	070M25		XC25		C25	F.1120	G10250	25	
1.1166	SMn433H	34Mn5	1536						TOJB	G15360		
1.1167	SMn438(H)	36Mn5	1335	150M36		40M5	2120	36Mn6	F.1203	G13350	35G2	
1.1170	SCMn1	28Mn6	1330	150M28	14A	20M5		C28Mn	28Mn6	G13300	30G	
1.1178	S 30 C	C30E		080M30		XC32		C30	2C30	G10300		
1.1180		C35R	1035	080A35		3C35	1572		F.1135	G10350		
1.1181	S35C	C35E	1035	080A35		XC38	1572	C36	F.1130	G10340	35	
1.1191	S45C	Ck45	1045	080A46		XC45	1672	C45	F.1140		45	
1.1206	S 50 C	C50E	1050	080M50		2C50	1674	C50		G10500	50	
1.1213	S50C	Cf53	1050	070M55		XC48HTS	1674	C53		G10500	50	

P

VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc
3	Non - alloyed steel	About .45% C, Annealed	250	25

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0481	SG365	17 Mn 4/P 295 GH	A516 Gr. 70	224 - 460B	P 295 GH	A 48 CP	2102	Fe E 295	A47RCI	K03501	14G2	
1.0501	S35C	C35	1035	080A32		1C35	1572	C35	F.1130	G10350	35	
1.0503	S45C	C45	1045	060A47		XC42H1TS	1672	C45	F.1140	G10450	45	
1.0614		C76D	1074			XC75				G10750		
1.0616		C86D	1086			XC80		C85		G10860		
1.0618		C92D	1095			XC90				G10950		
1.0726		35S20	1140	212M36	8M	35MF6	1957			G11400	40	
1.1157		40Mn4	1039	150M36	15	40M5				G10390	40G	
1.1165	SMn433H	30Mn5	1036	120M36		35M5		30Mn5	F.8211	K13300	30G2	
1.1167	SMn438(H)	36Mn5	1335	150M36		40M5	2120	36Mn6	F.1203	G13350	35G2	
1.1186	S40C	C40E	1040	060A40		2C40		C40		G10400		
1.1191	S45C	Ck45	1045	080M46		2C45	1672	C45	F.1140		45	
1.1201	S50C	C45R	1049	080M46		3C45	1660	C45	F.1145		38HM	
1.1213	S50C	Cf53	1050	070M55		XC48HTS	1674	C53		G10500	50	
1.7242	SCM 418 H	18CrMo4										
1.7337		16CrMo4 - 4	A387 Gr.12					A18CrMo45KW		K11564	15CM	
1.7362	SCMV 6	12CrMo195		3606 - 625		Z10CD5 - 05		16CrMo205		K41545		
		17MnV6	A572 - 60	436055E		NFA35 - 501E36	2142					

Technical Information

Material Groups

P

VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc
4	Non - alloyed steel	About .75% C, Annealed	270	28

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0603	S 70 C - CSP	C67	107	080A67		XC65		C67		G10700		
1.0605		C75	1075	144980HS				C75		G10740	75	
1.1203	S55C	Ck55	1055	060A57		2C55	1655	C55	F.1150	G10550	55	
1.1209		C55R	1055	070M55		3C55		C55	F.1155	G10550		
1.1221	S58C	Ck60	1060	060A62	43D	2C60	1678	C60	F.1150	G10640	60	
1.1231	S 70 C - CSP	C67E	1070	060A67		XC68	1770	C70	F.5103	G10700	65GA	
1.1248	C 75	C75E	1074	060A78		XC75	1774	C75	F.5107	G10800	75(A)	
1.1269	SK 5 - CSP	C85E	1086			XC90		C90		G10900	85(A)	
1.1274	SUP4	Ck 101	1095	060 A 96	C 100S	XC100	1870	C100	F.5117	G10950		
1.1545	SK 3	C 105 W1	W1	BW 2	C 105U	Y1 105	1880	C 100 KU	F.5118		U10A	
1.1663	SK 2	C125W	W112			Y2120					U13	

P

VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc
5	Non - alloyed steel	About .75% C, Quenched & Tempered	300	32

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0070		St 70 - 2	1055	Fe690 - 2FN	-	A70 - 2	1655	Fe 690	F.1150		55	
1.0535	S55C	C55	1055	070M55		1C55	1655	C55		J05000	55	
1.0601	S58C	C60	1060	060A62	43D	1C60		C60		G10600	60(G)	
1.1203	S55C	Ck55	1055	060A57		2C55	1655	C55	F.1150	G10550	55	
1.1221	S58C	Ck60	1060	060A62	43D	2C60	1678	C60	F.1150	G10640	60	
1.1274	SUP4	Ck 101	1095	060 A 96	C 100S	XC100	1870	C100	F.5117	G10950		
1.1545	SK 3	C 105 W1	W1	BW 2	C 105U	Y1 105	1880	C 100 KU	F.5118		U10A	
1.1663	SK 2	C125W	W112			Y2120					U13	
1.5120		38MnSi4										
1.5710	SNC236	36NiCr6	3135	640A35	111A	35NC6						
1.7701		51CrMoV4						51CrMoV4				

Technical Information

Material Groups

P — VDI 3323: 6 — Low - alloyed Steel — Annealed — HB 180 — HRc 10

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0116		St 37 - 3	A570 Gr. 36	4360 - 40C	S 235 J2 G3	E24 - 3	1312	Fe 360 D1(2)	AE235D		ST3KP	
1.0904	SKH 1, SKT 4	55Si7	9255	250A53	45	55S7	2085	55Si8	56Si7	G92550	55S2	
1.0961	SUP 7	60SiCr7	9262			60SC6		60SiCr8	60SiCr8	G92620		
1.2067		100Cr6	L3	BL3		Y100C6			100Cr6			
1.2108		90CrSi5	L1				2092	105WCR5				
1.2210		115CrV3	L2			100C3		107CrV3KU	F.520L		11KHF	
1.2241		51CrV4										
1.2330	SCM435TK	35CrMo4	4135	708A37		34CD4	2234	35CrMo4			35KHM	
1.2419	SKS31	105WCr6		105WC13		105WC13	2140	10WCr6			CWG	
1.2510	SKS3	100MnCrW4	O1	BO1		90 MWCV 5	2140	95 MnWCr 5 KU	F.5220		9KHVG	
1.2542		45WCrV7	S1	BS1			2710	45WCrV8KU			5C W25F	
1.2550		60WCrV7	S1			55WC20	2710	58WCr9KU			5KHV2SF	
1.2713	SKT4	55NiCrMoV6	L6			55NCDV7			F.520S		5C NM	
1.2721		50NiCr13	L6			55NCV6	2550		F.528			
1.2842		90MnCrV8	O2	BO2		90MV8				T31502	9G2F	
1.3501		100Cr2	E50100									
1.3505	SUJ2	100Cr6	52100	2S135	31	100C6	2258	100Cr6	F.1310		SC C 15	
1.5024		46Si7				45S7		46SI7	F.1451			
1.5025		51Si7	9259H		50Si7	51S7	2090	50Si7	F.1450			
1.5026		55Si7			56Si7	55S7	2085	55Si7	F.1440	G92550	55S2	
1.5027		60Si7	9260	251A60	60Si7	60S7		60Si7	F.1441	G92600	60S2	
1.5028	SUP7	65Si7	9260H									
1.5415	STFA 12	15Mo3	A204Gr.A	1503 - 243B		15D3	2912	16Mo3(KG)	F.2601	K11820		
1.5419	SCPH11	20Mo4	4419	1503 - 243 - 430			2512	G20Mo5		G44190		
1.5423	SB450M	16Mo5	4520	1503 - 245 - 420				16Mo5(KG)	F.2602	K11522		
1.5622		14Ni6	A350 - LF5			16N6		14Ni6(KG)	F.2641			
1.5732	SNC415(H)	14NiCr10	3415			14NC11		16NiCr11				
1.5752	SNC815(H)	14NiCr14	3310	655M13	36A	12NC15					20X2H4A	
1.6511	SUP10	36CrNiMo4	9840	816M40	110	40NCD3		36NiCrMo4(KB)			40C N2MA	
1.6523	SNCM220(H)	21NiCrMo2	8620	805M20	362	20NCD2	2506	20NiCrMo2			20C GNM	
1.6546	SNCM240	40NiCrMo2 - 2	8740	311 - Tyre7				40NiCrMo2(KB)			38C GNM	
1.6566		17NiCrMo6 - 4										
1.6587		17CrNiMo6		820A16		18NCD6		14NiCrMo13				
1.6657		10NiCrMo13 - 4						14NiCrMo131				
1.7015	SCr415(H)	10Cr3	5015	523M15		12C3				G50150	15C	
1.7033	SCr430(H)	34Cr4	5132	530A32	18B	32C4		34Cr4(KB)		G51300	35C	
1.7035	SCr440(H)	41Cr4	5140	530M40	18	42C4	2245	41Cr4		G51400	40H	
1.7131	SCR 415	16MnCr5	5115	527M17		16MC5	2511	16MnCr5		G51150	12KHN2	
1.7139		16MnCrS5					2127				18HG	
1.7176	SUP9(A)	55Cr3	5155	527A60	48	55C3	2253	55Cr3			50C GA	
1.7218	SCM420	25CrMo4	4130	CDS110		25CD4	2225	25CrMo4(KB)			20C M	
1.7220	SCM432	34CrMo4	4135	708 A 37		35CD4	2234	34CrMo4			35C M	
1.7223	SNB22 - 1	41CrMo4	4142					41CrMo4			40C FA	
1.7225	SCM 440 (H)	42CrMo4	4140	708 M 40	42 CrMo 4	42 CD 4	2244	42 CrMo 4	F.1252		38HM	
1.7228		55NiCrMoV6G		823M30	33		2512	653M31				
1.7262	SCM415(H)	15CrMo5				12CD4	2216	12CrMo4				
1.7321		20mOcR4					2625					
1.7335	SCM415(H)	13CrMo4 - 4	A182 - F11	1501 - 620		15CD4 - 5	2216	14CrMo45			12C M	
1.7361		32CrMo12		722M24	40B	30CD12	2240	30CrMo12	F.124A			
1.7380		10CrMo9 - 10	A182F22	1501 - 622		12CD9 - 10	2218	12CrMo9			12KH8	

INDEXABLE CUTTING TOOLS

Technical Information

Material Groups

P — VDI 3323: 6 — Low - alloyed Steel — Annealed — HB 180 — HRc 10

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.7715		14MoV6 - 3		1503 - 660 - 440				13MoCrV6				
1.8159	SUP 10	50CrV4	6150	735A50	47	50CrV4	2230	50CrV4		G61500	50C GFA	
1.8161		58CrV4										
1.8509	SACM 645	41CrAlMo7	A355A	905M39	41B	40CAD6 - 12	2940	41CrAlMo7				
1.8523		39CrMoV13 - 9		897M39	40C			36CrMoV12				

P — VDI 3323: 7 — Low - alloyed Steel — Quenched & Tempered — HB 275 — HRc 29

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.5415	STFA 12	15Mo3	A204Gr.A	1503 - 243B		15D3	2912	16Mo3(KG)	F.2601	K11820		
1.5423	SB450M	16Mo5	4520	1503 - 245 - 420				16Mo5(KG)	F.2602	K11522		
1.5622		14Ni6	A350 - LF5			16N6		14Ni6(KG)	F.2641			
1.5732	SNC415(H)	14NiCr10	3415			14NC11		16NiCr11				
1.5752	SNC815(H)	14NiCr14	3310	655M13	36A	12NC15					20X2H4A	
1.5755	SNC236	31NiCr14		653M31		18NC13	2534		F.1270			
1.6565	SNCM447	40NiCrMo6	4340	817M40	24	35NCD6	2541	35NiCrMo6(KB)			38C 2N2MA	
1.6587		17CrNiMo6		820A16		18NCD6		14NiCrMo13				
1.6657		10NiCrMo13 - 4						14NiCrMo131				
1.6957		26NiCrMoV14 - 5										
1.7015	SCr415(H)	10Cr3	5015	523M15		12C3				G50150	15C	
1.7262	SCM415(H)	15CrMo5				12CD4	2216	12CrMo4				
1.7335	SCM415(H)	13CrMo4 - 4	A182 - F11	1501 - 620		15CD4 - 5	2216	14CrMo45			12C M	
1.7380		10CrMo9 - 10	A182F22	1501 - 622		12CD9 - 10	2218	12CrMo9			12KH8	
1.7715		14MoV6 - 3		1503 - 660 - 440				13MoCrV6				
1.7733		24CrMoV55				20CDV6		21CrMoV511				
1.7755		GS - 45CrMoV10 - 4										
1.8070		21CrMoV511						35NiCr9				

P — VDI 3323: 8 — Low - alloyed Steel — Quenched & tempered — HB 300 — HRc 32

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.1730		C45W3	C45W			XC48						
1.2332	SCM(440)	47CrMo4	4142	708M40	19A	42CD4	2244	42CrMo4				
1.5736	SNC 631 (H)	36NiCr10	3435			30NC11						
1.6523	SNCM220(H)	21NiCrMo2	8620	805M20	362	20NCD2	2506	20NiCrMo2			20C GNM	
1.7033	SCr430(H)	34Cr4	5132	530A32	18B	32C4		34Cr4(KB)		G51300	35C	
1.7218	SCM420	25CrMo4	4130	CDS110		25CD4	2225	25CrMo4(KB)			20C M	
1.8515		32CrMo12		722M24	40B	30CD12	2240	32CrMo12	F.124A			

Technical Information

Material Groups

P | VDI 3323: 9 | Material Description: Low - alloyed Steel | Composition / Structure / Heat Treatment: Quenched & Tempered | HB: 350 | HRc: 38

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0904	SKH 1, SKT 4	55Si7	9255	250A53	45	55S7	2085	55Si8		G92550	55S2	
1.0961	SUP 7	60SiCr7	9262			60SC6		60SiCr8		G92620		
1.2067		100Cr6	L3	BL3		Y100C6		100Cr6				
1.2419	SKS31	105WCr6		105WC13		105WC13	2140	10WCr6			C WG	
1.2542		45WCrV7	S1	BS1			2710	45WCrV8KU			5C W25F	
1.2713	SKT4	55NiCrMoV6	L6			55NCDV7			F.520S		5C NM	
1.4882		X50CrMnNiNbN219				Z50CMNNb21 - 09						
1.5120		38MnSi4										
1.5710	SNC236	36NiCr6	3135	640A35	111A	35NC6						
1.5755	SNC236	31NiCr14		830m31		18NC13	2534		F.1270			
1.6511	SUP10	36CrNiMo4	9840	816M40	110	40NCD3		36NiCrMo4(KB)			40C N2MA	
1.6546	SNCM240	40NiCrMo2 - 2	8740	311 - Tyre7				40NiCrMo2(KB)			38C GNM	
1.7035	SCr440(H)	41Cr4	5140	530M40	18	42C4	2245	41Cr4		G51400	40H	
1.7176	SUP9(A)	55Cr3	5155	527A60	48	55C3	2253	55Cr3			50C GA	
1.7220	SCM432	34CrMo4	4135	708Aa37		35CD4	2234	34CrMo4			35C M	
1.7223	SNB22 - 1	41CrMo4	4142					41CrMo4			40C FA	
1.7225	SCM 440 (H)	42CrMo4	4140	708 M 40	42 CrMo 4	42 CD 4	2244	42 CrMo 4	F.1252		38HM	
1.7361		32CrMo12		722M24	40B	30CD12	2240	30CrMo12	F.124A			
1.8159	SUP 10	50CrV4	6150	735A50	47	50CrV4	2230	50CrV4	51CrV4	G61500	50C GFA	
1.8161		58CrV4										
1.8509	SACM 645	41CrAlMo7	A355A	905M39	41B	40CAD6 - 12	2940	41CrAlMo7				
1.8523		39CrMoV13 - 9		897M39	40C			36CrMoV12				

P | VDI 3323: 10 | Material Description: High - alloyed steel, and tool steel | Composition / Structure / Heat Treatment: Annealed | HB: 200 | HRc: 15

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.0347	SPCD	RR St 3	A619	CR 3	Fe P03	F 13		DC03/FeP03			08JU	
1.0723	SUM32	15S22		210A15			1922		F.210F			
1.2080	SKD1	X210Cr12	D3	BD3	X210Cr12	Z200C12		X205Cr12KU		T30403	KH12	
1.2162	SCR 420 H	21MnCr5				20MC5						
1.2311		40CrMnMo7				40CMD8		35cRmO8KU				
1.2312		40CrMnMoS8.6	P20+S			40CMD8S						
1.2316		X36CrMo17			X38CrMo16							
1.2343	SKD 6	X38CrMoV5 - 1	H11	BH11		Z38CDV5		X37CrMoV51KU		T20811	4C 5MFS	
1.2344	SKD61	X40CrMoV5 - 1	H13	BH13		Z40CDV5	2242	X40CrMoV511KU	F.5318	T20813	4C 5MF1S	
1.2363	SKD12	X100CrMoV5 - 1	A2	BA2		Z100CDV5	2260	X100CrMoV51KU	F.5227		9KH5VF	
1.2379	SKD11	X155CrVMo121	D2	BD2		Z160CDV12	2310	X165CrMoW12KU		T30402	KH12MF	KRUPP2379
1.2436	SKD 2	X210CrW12	D4(D6)	BD6		Z200CD12	2312	X215CrW121KU	F.5213		KH12	

Technical Information

Material Groups

P | VDI 3323: 10 | Material Description: High - alloyed steel, and tool steel | Composition / Structure / Heat Treatment: Annealed | HB: 200 | HRc: 15

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.2510	SKS3	100MnCrW4	O1	BO1		90 MWCV 5	2140	95 MnWCr 5 KU	F.5220		9KHVG	
1.2581	SKD5	X30WCrV9 - 3	H21	BH21		Z30WCV9		X30WCrV93KU	F.526	T20821	3C 2W8F	
1.2601		X165CrMoV12					2310	X160CrMoV12			KH12MF	
1.2606	SKD 62	X37CrMoW51	H12	BH12		Z35CWDV5		X35CrMoW05KU	F.537	T20812	5C NM	
1.2764		X19NiCrMo4										
1.2767		X45NiCrMo4				45NCD16		40NiCrMoV8KU				
1.2842		90MnCrV8	O2	B02		90MV8		90MnVCr8KU		T31502	9G2F	
1.3243	SKH55	S6 - 5 - 2 - 5	T15			KCV06 - 05 - 05 - 04 - 02	2723	HS6 - 5 - 2 - 5			R6M5K5	
1.3249	SKH 3	S18 - 1 - 2 - 5	T4	BT4		Z80WKCV18 - 05 - 04					R18K5F2	
1.3343	SKH51, SKH9	S6 - 5 - 2	M2	BM2		Z85WDCV	2722	HS652	F.5604		R6M5	
1.3348	SKH 58	S2 - 9 - 2	M7			Z100DCWV09 - 04 - 02	2782	HS292	F.5607			
1.3355	SKH 2	S18 - 0 - 1	T1	BT1		Z80WCV18 - 4 - 01					R18	
1.4718	SUH1	X45CrSi9 - 3	HNV3	401S45	52	Z45CS9		X45CrSi8	F.322		40C 9S2	
1.5662	SL9N60(53)	X8Ni9	ASMA353	502 - 650		9Ni		X10Ni9	F.2645			
1.5680		12Ni19	2515	12Ni19		Z18N5						

P | VDI 3323: 11 | Material Description: High - alloyed steel, and tool steel | Composition / Structure / Heat Treatment: Quenched & Tempered | HB: 325 | HRc: 35

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.2080	SKD1	X210Cr12	D3	BD3	X210Cr12	Z200C12		X205Cr12KU		T30403	KH12	
1.2344	SKD61	X40CrMoV5 - 1	H13	BH13		Z40CDV5	2242	X40CrMoV511KU	F.5318	T20813	4C 5MF1S	
1.2363	SKD12	X100CrMoV5 - 1	A2	BA2		Z100CDV5	2260	X100CrMoV51KU	F.5227		9KH5VF	
1.2436	SKD 2	X210CrW12	D4(D6)	BD6		Z200CD12	2312	X215CrW121KU	F.5213		KH12	
1.2581	SKD5	X30WCrV9 - 3	H21	BH21		Z30WCV9		X30WCrV93KU	F.526	T20821	3C 2W8F	
1.2601		X165CrMoV12					2310	X160CrMoV12			KH12MF	
1.2714	SKT 4	55NiCrMoV7	6F3/L6			55NiCrMoV7			F.520S		5KHNV	
1.3202		S12 - 1 - 4 - 5		BT15				HS12 - 1 - 5 - 5				
1.3207		S10 - 4 - 3 - 10		BT42		Z130WKCDV						
1.3243	SKH55	S6 - 5 - 2 - 5	T15			KCV06 - 05 - 05 - 04 - 02	2723	HS6 - 5 - 2 - 5			R6M5K5	
1.3246		S7 - 4 - 2 - 5	M35			Z110WKCDV07 - 05 - 04		HS7 - 4 - 2 - 5				
1.3247	SKH 51	S2 - 10 - 1 - 8	M42	BM42		Z110DKCWV09 - 08 - 04		HS2 - 9 - 1 - 8			R2AM9K5	
1.3255	SKH 3	S18 - 1 - 2 - 5	T4	BT4		Z80WKCV18 - 05 - 04					R18K5F2	
1.3343	SKH51, SKH9	S6 - 5 - 2	M2	BM2		Z85WDCV	2722	HS652	F.5604		R6M5	
1.3348	SKH 58	S2 - 9 - 2	M7			Z100DCWV09 - 04 - 02	2782	HS292	F.5607			
1.3355	SKH 2	S18 - 0 - 1	T1	BT1		Z80WCV18 - 4 - 01					R18	
1.4718	SUH1	X45CrSi9 - 3	HNV3	401S45	52	Z45CS9		X45CrSi8	F.322		40C 9S2	
1.4935	SUH 616	X20CrMoWV121	422							S42200		
1.5680		12Ni19	2515	12Ni19		Z18N5						

Technical Information

Material Groups

M — VDI 3323 12

Material Description: Stainless steel
Composition / Structure / Heat Treatment: Ferritic / Martensitic, Annealed
HB: 200
HRc: 15

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.4000	SUS403	X6Cr13	403	403S17		Z6C13	2301	X6Cr13	F.3110	S40300	08C 13	ATI 410S
1.4001		X7Cr14	410 S	403S7		Z8C13	2301		F.8401		08C 13	
1.4002	SUS 405	X6CrAl13	405	405S17		Z6CA13	2302	X6CrAl13		S40500		
1.4005	SUS416	X12CrS13	416	416S21		Z11CF13	2380	X12CrSC13	F.3411	S41600		ATI 416
1.4006	SUS410	X12Cr13	410	410S21	56A	Z10C13	2302	X12Cr13	F.3401	S41000	12C 13	ATI 410
1.4016	SUS430	X6Cr17	430	430S15	X8Cr17	Z8C17	2320	X8Cr17	F3113	S43000	12C 17	ATI 430
1.4027	SCS 2	GX20Cr14		420C29		Z20C13M					20C 13L	
1.4028	SUS420J2	X30Cr13	420	420S45		Z30C13	2304			S42020	20C 13	
1.4034	SUS420J2	X46Cr13		420S45		Z40C14		X40Cr14	F.3405			
1.4057	SUS431	X19CrNi17 - 2	431	431S29	57	Z15CN16 - 02	2321	X16CrNi16	F.3427	S43100	20C 17N2	431 (HT)
1.4086		GX120Cr29		452C11								
1.4104	SUS430F	X12CrMoS17	430F	420S37		Z10CF17	2383	X10CrS17	F.3117	S43020		
1.4112	SUS 440 B	X90CrMoV18	440B							S44003	95KH18	
1.4113	SUS434	X6CrMo17	434	434S17		Z8CD17 - 01	2325	X8CrMo17		S43400		AL 434
1.4313	SCS5	X3CrNi13 - 4	CA6 - NM	425C11		Z4CND13 - 04M	2385	(G)X6CrNi304		J91540		
1.4340		GX40CrNi274								J92615		
1.4417		X2CrNiM0Si195	S31500				2376			S39215		
1.4418		X4CrNiMo165				Z6CND16 - 04 - 01	2387					APX4
1.4510	SUS430LX	X6CrTi17	XM8			Z4CT17		X6CrTi17	F.3115	S43035	08C 17T	430Ti
1.4511	SUS430LK	X6CrNb17				Z4CNb17		X6CrNb17	F.3122			AXC525
1.4512	SUH409	X6CrTi12	409	LW19		Z3CT12		X6CrTi12		S40900		
1.4720		X20CrMo13										
1.4724	SUS 405	X10CrA113	405	403S17		Z10C13		X10CrA112	F.311		10C 13SJU	
1.4742	SUS430	X10CrA118	430	439S15	60	Z10CAS18		X8Cr17	F.3113	S43000	15C 13SJU	
1.4747	SUH4	X80CrNiSi20	HNV6	443S65	59	Z80CSN20 - 02		X80CrSiNi20	F.320B	S65006		
1.4749		X18CrN28	446								15KH28	
1.4762	SUH446	X10CrA124	446			Z10CAS24	2322	X16Cr26		S44600		
1.4871	SUH35,SUH36	X53CrMnNiN21 - 9	EV8	349S54		Z52CMN21 - 09		X53CrMnNiN219		S63008	55C 20G9AN4	
		X10CrNi15	429									
		X12CrNi18 - 9	302	302S31		Z10CN18 - 09	2330					

M — VDI 3323 13

Material Description: Stainless steel
Composition / Structure / Heat Treatment: Martensitic, Quenched & Tempered
HB: 240
HRc: 23

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.4000	SUS403	X6Cr13	403	403S17		Z6C13	2301	X6Cr13	F.3110	S40300	08C 13	ATI 410S
1.4001		X7Cr14	410 S	403S7		Z8C13	2301		F.8401		08C 13	
1.4006	SUS410	X12Cr13	410	410S21	56A	Z10C13	2302	X12Cr13	F.3401	S41000	12C 13	ATI 410
1.4016	SUS430	X6Cr17	430	430S15	X8Cr17	Z8C17	2320	X8Cr17	F.3113	S43000	12C 17	ATI 430
1.4021	SUS 420J1	X20Cr13	420	420S37		Z20C13	2303	14210	F.5261	S42000	20C 13	ATI 420
1.4027	SCS 2	GX20Cr14		420C29		Z20C13M					20C 13L	
1.4031	SUS 420 J2	X40Cr13	420			Z40C14	- 2304		F.3404	S42080	40C 13	
1.4034	SUS420J2	X46Cr13		420S45		Z40C14		X40Cr14	F.3405			
1.4057	SUS431	X19CrNi17 - 2	431	431S29	57	Z15CN16 - 02	2321	X16CrNi16	F.3427	S43100	20C 17N2	431 (HT)
1.4104	SUS430F	X12CrMoS17	430F	420S37		Z10CF17	2383	X10CrS17	F.3117	S43020		
1.4113	SUS434	X6CrMo17	434	434S17		Z8CD17 - 01	2325	X8CrMo17		S43400		AL 434
1.4313	SCS5	X3CrNi13 - 4	CA6 - NM	425C11		Z4CND13 - 04M	2385	(G)X6CrNi304		J91540		
1.4544		A 700	321	S.524		Z 10 CNT 18 11		X6CrNiTi1811		J92630	08C 18N12T	
1.4546		X5CrNiNb18 - 10	348	347S31				X6CrNiNb1811		J92640		ATI 348
1.4871	SUH35,SUH36	X53CrMnNiN21 - 9	EV8	349S54		Z52CMN21 - 09		X53CrMnNiN219		S63008	55C 20G9AN4	
1.4922		X20cRmV12 - 1					2317	x20cRmOnl1201				
1.4923		X22CrMoV121										Jethete X20

INDEXABLE CUTTING TOOLS

Technical Information

Material Groups

M — VDI 3323 14

Material Description: Stainless steel
Composition / Structure / Heat Treatment: Austenitic
HB: 180
HRc: 10

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.4301	SUS 304	X5CrNi18 - 10	304	304S15		Z5CN18 - 09	2332		F.3551	S30409	08C 18N10	
1.4305	SUS303	X10CrNiS18 - 10	303	303S21	58M	Z8CNF18 - 09	2346	X10CrNiS18.09	F.3508	S30300	30C 18N11	ATI 303
1.4306	SCS19	X2CrNi1911	304L	304C12	X3CrNi1810KD	Z2CN18 - 09	2352	GX2CrNi1910	F.3503	S30403	03KH18N11	ATI 304L
1.4308	SUS304L	GX6CrNi18 - 9	CF - 8	304C15	58E	Z6CN18 - 10M	2333					CF - 8
1.4310	SUS 301	X10CrNi18 - 8	301	301S21		Z12CN17 - 07	2331	X2CrNi1807	F.3517	S30100	07KH16N6	ATI 301
1.4311	SUS304LN	X2CrNiN18 10	304LN	304S62		Z2CN18 - 10	2371	X2CrNiN1810	F.3541	S30453	03KH18N11	
1.4312	SCS12	GX10CrNi188	305	302C25		Z10CN18 - 9M					10C 18N9L	ATI 305
1.4350	SUS304	X5CrNi18 - 9	304	304S15	58E	Z6CN18 - 09	2332	X5CrNi1810	F.3551	S30400		ATI 304
1.4362		X2CrNiN234	S32304			Z2CN23 - 04AZ	2327			S32304		ATI 2304TM
1.4371		X3CrMnNiN18887	202	284S16		Z8CMN18 - 08 - 05						
1.4401	SUS316	X5CrNiMo17 - 12 - 2	316	316S13		Z3CND17 - 11 - 01	2347	X5CrNiMo17 12 2	F.3534	S31600	08KH17H13M2T	ATI 316
1.4404	SUS316L	X2CrNiMo17 - 13 - 2	316L	316S11		Z2CND17 - 12	2348	X2CrNiMo1712	F.3533	S31603		ATI 316L
1.4406	SUS316LN	X2CrNiMoN17122	316LN	316S61		Z2CND17 - 12AZ		X2CrNiMoN1712	F.3542	S31653	07C 18N	ATI 316LN
1.4408	SCS14	GX6CrNiMo18 - 10	CF - 8M	316C16			2343	X7CrNiMo2010	F.8414	J92900	10G2S2MSL	
1.4410	SCS 14 A	GX10CrNiMo18 - 9				Z5CND20 - 12M	2328			S32750		
1.4429	SUS316LN	X2CrNiMoN17 - 13 - 3	316Ln	316S62		Z2CND17 - 13AZ	2375	X2CrNiMoN17133	F.3543		03KH16N15M3	
1.4435	SUS316L	X2CrNiMo18143	316L	316S11		Z3CND17 - 12 - 03	2375	X2CrNiMo17 13 2	F.3533	S31603	03C 17N14M3	
1.4436	SUS316	X3CrNiMo17 - 13 - 3	316	316S19		Z6CND18 - 12 - 03	2343	X5CrNiMo17 12 2	F.3543	S31600		
1.4438	SUS317L	X2CrNiMo18164	317L	317S12		Z2CND19 - 15 - 04	2367	X2CrNiMo18 16 4	F.3539	S31703		ATI 317L
1.4439		X2CrNiMoN17135	(s31726)			Z3CND18 - 14 - 06AZ						
1.4440		X2CrNiMo18 - 16										
1.4449	SUS317	X5CrNiMo17133	317	317S16				X5CrNiMo1815		S31700		ATI 317
1.4460	SUS 329 J1	X8CrNiMo275	329				2324			S32900		10RE51
1.4462	SUS329J3L	X2CrNiMoN2253		318S13		Z3CND22 - 05Az	2377			S31803		ATI 2205TM
1.4500		X7NiCrMoCuNb2520				23NCDU25 - 20M				J95150		
1.4521	SUS444	X2CrMoTi18 - 2	443444				2326	X2CrMoTiNb18 2	F.3123			
1.4539		X1NiCrMoCuN25205				Z2NCDU25 - 20	2562			N08904		ATI 904L
1.4541	SUS321	X14CrNiTi18 - 10	321	321S31		Z6CNT18 - 10	2337	X6CrNiTi18 11	F.3523	S32100	06C 18N10T	ATI 321
1.4542	SUS630	X5CrNiCuNb174	630			Z7CNU15 - 05						UGIMA 4542
1.4545		Z7CNU15.05	15 - 5PH							S15500		ATI 15 - 5
1.4547		X1CrNiMoN20187	S31254				2378			S31254		Uranus B25 6Mo
1.4550	SUS347	X6CrNiNb18 - 10	347	347S17	58F	Z6CNNb18 - 10	2338	X6CrNiNb18 11	F.3552	S34700	08C 18N12B	ATI 347
1.4552	SCS 21	GX7CrNiNb18 - 9				Z4CNNb19 - 10M				J92710		
1.4568	SUS 631	X 7 CrNiAl 17 7		316S111		Z 9 CAN 17 - 7	2388	Z8CNA17 - 07		S17700	09C 17NJU1	17 - 7PH
1.4571	SUS 316Ti	X6CrNiMoTi17 - 12 - 2	316Ti	320S31	58J	Z6NDT17 - 12	2350	X6CrNiMoTi17 12	F.3535		10C 17N13M2T	ATI 316Ti
1.4581	SCS 22	GX5CrNiMoNb18		318C17		Z4CNDNb18 - 12M						
1.4583		X6CrNiMoNB18 - 12	318	303S21		Z15CNS20 - 12		X15CrNiSi2 12				
1.4585		GX7CrNiMoCuNb1818						X6CrNiMoTi17 12		J94651		
1.4821		X20CrNiSi254				Z20CNS25 - 04				S44635		
1.4823		GX40CrNiSi274								J92605		
1.4828	SCS17	X15CrNiSi20 - 12	309	309S24	58C	Z15CNS20 - 12			F.8414	S30900	20C 20N14S2	ATI 309
1.4833	SUS 309 S	X6CrNi2213	309S	309S13		Z15CN24 - 13				J93400		
1.4845	SUH310	X12CrNi25 - 21	310S	310S24		Z12CN25 - 20	2361	X6CrNi2520	F.331	S31008	20C 23N18	ATI 310S
1.4878	SUS321	X12CrNiTi18 - 9	321	321S20	58B	Z6CNT18 - 12(B)	2337	X6CrNiTi1811	F.3553	S32100		ACX315
1.4891		X5CrNiNb18 - 10	Ss30415				2372					
1.4893		X8CrNiNb11	S30815				2368					
1.4948		X6CrNi1811	304H	304S51		Z5CN18 - 09	2333			S30480		
1.4980		X5NiCrTi2515	660				2570			S66286		Incoloy A 286
		X5NiCrN3525										
		X2CrNiMoN18134	S31753									
		X2CrNiMoN25227										

Technical Information

Material Groups

K — VDI 3323 15

Material Description: Grey cast iron | Composition / Structure / Heat Treatment: Pearlitic / Ferritic | HB: 180 | HRc: 10

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.6010	FC100	GG10	A48 20 B	Grade 100	GJL - 100	Ft 10 D	0100	G10	FG10		Sc 10	
.6015	FC150	GG15	A48 25 B	Grade 150	GJL - 150	Ft 15 D	0115	G15	FG15		Sc 15	
.6020	FC200	GG20	A48 30 B	Grade 220	GJL - 200	Ft 20 D	0120	G20	FG20	W06020	Sc 20	
.6025	FC250	GG25	A48 40 B	Grade 260	GJL - 250	Ft 25 D	0125	G25	FG25		Sc 25	
.6660		GGL - NiCr 20 2	1050/700/7	Grade F2	GJLA - XNiCr 20 - 2	L - NC 202	0523	-		F41002		Ni - Resist 2
1.4449	SUS317	X5CrNiMo17133	317	317S16				X5CrNiMo1815		S31700		ATI 317

K — VDI 3323 16

Material Description: Grey cast iron | Composition / Structure / Heat Treatment: Pearlitic (Martensitic) | HB: 260 | HRc: 26

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.6025	FC250	GG25	A48 40 B	Grade 260	GJL - 250	Ft 25 D	0125	G25	FG25		Sc 25	
.6030	FC300	GG30	A48 45 B	Grade 300	GJL - 300	Ft 30 D	0130	G30	FG30		Sc 30	
.6035	FC350	GG35	A48 50 B	Grade 350	GJL - 350	Ft 35 D	0135	G35	FG35		Sc 35	
.6040	FC400	GG40	A48 60 B	Grade 400	GJL - 400	Ft 40 D	0140	G40	FC40		Sc 40	

K — VDI 3323 17

Material Description: Nodular cast iron | Composition / Structure / Heat Treatment: Ferritic | HB: 160 | HRc: 3

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.7033	FCD350 - 22L	GGG35.3	-	350/22L40	GJS - 350 - 22 - LT	FGS 370 - 17	0717 - 15	-				
.7040	FCD400	GGG40	60 - 40 - 18	SNG 420 - 12	GJS - 400 - 15	FCS 400 - 12	0717 - 02	GS 400 - 12	FG E38 - 17	F32800	Vc 42 - 12	
.7043	FCD 370	GGG4.3	60 - 40 - 18	SNG 370 - 17	GJS - 400 - 18 - LT	FGS 370 - 17	0717 - 12	GSO 42 - 17			Vc 42 - 12	
.6040	FC400	GG40	A48 60 B	Grade 400	GJL - 400	Ft 40 D	0140	G40	FC40		Sc 40	

K — VDI 3323 18

Material Description: Nodular cast iron | Composition / Structure / Heat Treatment: Pearlitic | HB: 250 | HRc: 25

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.7050	FCD500	GGG50	80 - 55 - 06	SNG 500 - 7	GJS - 500 - 7	FGS 500 - 7	0727 - 02	GS 500 - 7	FG E50 - 7	F33100	Vc 50 - 2	
.7060	FCD600	GGG60	80 - 55 - 06	SNG 600 - 3	GJS - 600 - 3	FGS 600 - 3	0732 - 03	GS 600 - 3	FG E60 - 2		Vc 60 - 2	
.7070	FCD700	GGG70	100 - 70 - 03	SNG 700 - 2	GJS - 700 - 2	FGS 700 - 2	0737 - 01	GS 700 - 2	FG S70 - 2	F34800	Vc 70 - 2	
.7652	FCDA - NiMn 13 7	GGG NiMn 13 - 7	-	Grade S6	GJSA - XNiMn 13 - 7	FGS Ni13 Mn7	0772	-				Nodumag
.7660		GGG NiCr 20 - 2	A436 D2	Grade S2	GJSA - XNiCr 20 - 2	FGS Ni20 Cr2	0776	-				Ni - Resist D - 2

Technical Information

Material Groups

K — VDI 3323 19

Material Description: Malleable cast iron | Composition / Structure / Heat Treatment: Ferritic | HB: 130 | HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.8135	FCMW330	GTS - 35	32510	B 340 - 12	GJMB350 - 10	MN 35 - 10	0815	GMN 35	GTS35		Kc 35 - 10	

K — VDI 3323 20

Material Description: Malleable cast iron | Composition / Structure / Heat Treatment: Pearlitic | HB: 230 | HRc: 21

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.8145	FCMW370	GTS - 45	A220 - 40010	P 440 - 7	GJMB450 - 6	MN 450	0852	GMN 45				
.8155	FCMP490	GTS - 55	50005	P 510 - 4	GJMB - 550 - 4	MP 50 - 5	0854	GMN 55			Kc 60 - 3	
.8165	FCMP590	GTS - 65	70003	P 570 - 3	GJMB - 650 - 2	MN 650 - 3	0856	GMN 65				
.8170	FCMP690	GTS - 70	90001	P 690 - 2	GJMB - 700 - 2	MN 700 - 2	0862	GMN 70			Kc 70 - 2	

Technical Information

Material Groups

N — VDI 3323: 21

Material Description: Aluminum - wrought alloy
Composition / Structure / Heat Treatment: Not Curable
HB: 60
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
3.0205		Al99	Al99									
3.0255	(A1050)	Al99.5	1000	L31		A59050C					D1	
3.3315		AlMg1										

N — VDI 3323: 22

Material Description: Aluminum - wrought alloy
Composition / Structure / Heat Treatment: Curable, Hardened
HB: 100
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
3.1325		AlCuMg1									AD35	
3.1655	A2011	AlCuSiPb										
3.2315		AlMgSi1									AK9	
3.4345		AlZnMgCuO,5	7050	L86		AZ4GU/9051		811 - 04				
3.4365	7075	AlZnMgCu1,5	7075	7075		7075		AlZn5.8MgCuCr			B95	

N — VDI 3323: 23

Material Description: Aluminum - cast, alloyed
Composition / Structure / Heat Treatment: ≤ 12% Si, Not Curable
HB: 75
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
3.2163		G - AlSi9Cu3									VAL8	
3.2382		GD - AlSi10Mg										
3.2383		G - AlSi0Mg(Cu)	A36.2	LM9			4253					
3.2581		G - AlSi12										
3.3561		G - AlMg5										
3.5101		G - MgZn4sE1Zr1	ZE41	MAG5								
3.5103		MgSE3Zn27r1	EZ33	MAG6		G - TR3Z2						
3.5812		G - MgAl8Zn1	AZ81	NMAG1								
3.5912		G - MgAl9Zn1	AZ91	MAG7								
			A356 - 72	2789		NFA32 - 201						
	A5052		356.1	LM25			4244				AK7	
		G - AlSi12	A413.2	LM6			4261					
	ADC12	G - AlSi12(Cu)	A413.1	LM20			4260				AK12	
	A6061	GD - AlSi12	A413.0				4247					
	A7075	GD - AlSi8Cu3	A38.1	LM24			4250					

Technical Information

Material Groups

N — VDI 3323: 24

Material Description: Aluminum - cast, alloyed
Composition / Structure / Heat Treatment: ≤ 12% Si, Curable, Hardened
HB: 90
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.1871		G - AlCu4TiMg										
3.1754		G - AlCu5Ni1,5										
3.2371		G - AlSi7Mg	4218B								AK8	
3.2373	C4BS	G - AlSi9MGWA	SC64D			A - S7G	4251				AK9	
3.2381		G - AlSi10Mg									AK12	
3.5106		G - MgAg3SE2Zr1	QE22	mag12								
		G - ALMG5	GD - AlSi12	LM5		A - SU12	4252					

N — VDI 3323: 26

Material Description: Copper and Copper Alloys (Bronze / Brass)
Composition / Structure / Heat Treatment: Cutting alloys, PB>1%
HB: 110
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.0375		CuZn36Pb3									LS60 - 2	
2.1090		G - CuSn75pb	C93200			U - E7Z5pb4						
2.1096		G - CuSn5ZnPb	c83600	LG2								
2.1098		G - CuSn2Znpb	C83600									
2.1182		G - CuPb15Sn	C23000	LB1		U - pb15E8						

N — VDI 3323: 27

Material Description: Copper and copper alloys (Bronze / Brass)
Composition / Structure / Heat Treatment: CuZn, CuSnZn (Brass)
HB: 90
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.0240	C2300	CuZn15									L90	
2.0321		CuZn37	C27200	cz108		CuZn36,CuZn37		C2700			L63	
2.0590		G - CuZn40Fe										
2.0592		G - CuZn35Al1	C86500	U - Z36N3		HTB1						
2.0596		G - CuZn34Al2	C86200	HTB1		U - Z36N3					LTs23AD	
2.1293		CuCrZr	C18200	CC102		U - Cr0 - 8Zr						

N — VDI 3323: 28

Material Description: Copper and copper alloys (Bronze / Brass)
Composition / Structure / Heat Treatment: CuSn, lead - free copper and electrolytic copper
HB: 100
HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.0060		E - Cu57										
2.0966		CuAl10Ni5Fe4	C63000	Ca104		U - A10N					BrAD	
2.0975		G - CuAl10Ni	B - 148 - 52									
2.1050		G - CuSn10	c90700	CT1								
2.1052		G - CuSn12	C90800	pb2		UE12P						
2.1292		G - CuCrF35	C81500	CC1 - FF								

Technical Information

Material Groups

S | VDI 3323: 31 | Material Description: Heat resistant super alloys | Composition / Structure / Heat Treatment: Fe Based, Annealed | HB: 200 | HRc: 15

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.4558	NCF 800 TB	X2NiCrAlTi3220	N08800	NA15								
1.4562		X1NiCrMoCu32287	N08031									
1.4563		X1NiCrMoCuN31274	N08028			Z1NCDU31 - 27 - 03	2584				EK77	
1.4864	SUH330	X12NiCrSi36 - 16	330	NA17		Z12NCS37 - 18				N08330		
1.4865	SCH15	GX40NiCrSi38 - 18		330C40				XG50NiCr3919		J94605		
1.4958		X5NiCrAlTi3120										

S | VDI 3323: 32 | Material Description: Heat resistant super alloys | Composition / Structure / Heat Treatment: Fe Based, Aged | HB: 280 | HRc: 30

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.4977		X40CoCrNi2020				Z42CNKDWNb						

S | VDI 3323: 33 | Material Description: Heat resistant super alloys | Composition / Structure / Heat Treatment: Ni or Co Based, Annealed | HB: 250 | HRc: 25

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.4360		NiCu30Fe		NA13		NU30				N04400		Monel400
2.4603		NiCr 30 FeMo	5390A			NC22FeD						Hastelloy G - 30
2.4610		NiMo16cR16Ti								N26455		HastelloyC - 4
2.4630		NiCr20Ti		HR5,203 - 4		NC20T				N06075		Nimonic75
2.4631	NCF 80A	NiCr20TiAl		Hr40		NC20TA				N07080	KHN77TYuR	Nimonic 80A
2.4642	NCF 690	NiC29Fe				Nnc30Fe				N06690		Inconel 690
2.4856		NiCr22Mo9Nb		NA21		NC22FeDNb				N06625		Inconel 625
2.4858		NiCr21Mo		NA16		NC21FeDU				N08825	KHN38VT	Incoloy 825

S | VDI 3323: 34 | Material Description: Heat resistant super alloys | Composition / Structure / Heat Treatment: Ni or Co Based, Aged | HB: 350 | HRc: 38

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.4375		NiCu30Al	4676	NA18		NU30AT				N05500		Monelk500
2.4662		NiFe35Cr14MoTi	5660			ZSNCDT42				N09901		Incoloy 901
2.4668		NiCr19Fe19NbMo	5383	HR8		NC19eNB				N07718		Inconel 718
2.4670		S - NiCr13A16MoNb	5391	Mar - 46		NC12AD						Nimocast 713
2.4694		NiCr16fE7TiAl								N07751		Inconel 751
2.4955		NiFe25Cr20NbTi										
2.4964		CoCr20W15Ni	5772			KC20WN						Haynes 25
		CoCr22W14Ni	AMS 5772			KC22WN						

INDEXABLE CUTTING TOOLS

Technical Information

Material Groups

S | VDI 3323: 35 | Material Description: Heat resistant super alloys | Composition / Structure / Heat Treatment: Ni or Co Based, Cast | HB: 320 | HRc: 34

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.4669		NiCr15Fe7TiAl				NC15TNbA				N07750		Inconel X750
2.4685		G - NiMo28								N10665		Hastelloy B
2.4810		G - NiMo30										Hastelloy C
2.4973		NiCr19Co11MoTi	AMS 5399			NC19KDT					VT5 - 1	
3.7115		TiAl5Sn2								R54520	VT1 - 00	ATI Grade 6

S | VDI 3323: 36 | Material Description: Titanium alloys | Composition / Structure / Heat Treatment: Pure Titanium | HB: 400 Rm | HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
2.4674		NiCo15Cr10MoAlTi	AMS 5397							N13100		IN 100
3.7025		Ti1	R50250	2TA1						R50250		ATI 30 CP Gr. 1
3.7225		Ti1pd	R52250	TP1						R52250		

S | VDI 3323: 37 | Material Description: Titanium alloys | Composition / Structure / Heat Treatment: Alpha + Beta Alloys, Hardened | HB: 1050 Rm | HRc:

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
3.7124		TiCu2		2TA21 - 24								
3.7145		TiAl6Sn2Zr4Mo2Si	R54620							R54620		
3.7165		TiAl6V4	AMS R56400	TA10 - 13		T - A6V					VT6	
3.7185		TiAl4Mo4Sn2		TA45 - 51								
3.7195		TiAl3V2.5								R56320		ATI 3 - 2.5
		TiAl4Mo4Sn4Si.5										
		TiAl5Sn2.5	AMS R54520	TA14/17		T - A5E						
		Ti6Al4VELI	AMS R56401	TA11								

Technical Information

Material Groups

H

VDI 3323: 38

Material Description: Hardened steel

Composition / Structure / Heat Treatment: Hardened

HB: 550

HRc: 55

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
1.1231	S 70 C - CSP	Ck 67	1070	060 A 67	C 67S	XC 68	1770	C 70	F.5103		70	
1.1248	C 75	Ck 75	1078, 1080	060 A 78	C 75S	XC 75	1774	C 75	F.5107		75	
1.1274	SUP 4	Ck 101	1095	060 A 96	C 100S	XC100	1870	C100	F.5117			
1.1545	SK 3	C 105 W1	W1	BW 2	C 105U	Y1 105	1880	C 100 KU	F.5118		U10A	
1.2762		75CrMoNiW67	-	-	-	-	-	-				
1.3401	SCMnH1	GX120Mn12	A128(A)			Z120M12	2183	GX120Mn12	F.8251		110G13L	
1.4021	SUS 420 J1	X 20 Cr 13	420	420 S 37	X 20 Cr 13	Z 20 C 13	2303	X 20 Cr 13	F.5261		20KH13	ATI 420
1.4109	SUS 440 A	X 65 CrMo 14	440 A	-	X 70 CrMo 15	Z 70 D 14	-	-				ATI 440A
1.4112	SUS 440 B	X 90 CrMoV 18	440 B	409 S 19	X 90 CrMoV 18	Z 2 CND 18 05	2327	X CrTi 12				
1.4125	SUS 440 C	X 105 CrMo 17	440 C	-	X 105 CrMo 17	Z 100 CD 17	-	X 105 CrMo 17			95KH18	ATI 440C
1.6746		32NiCrMo14 - 5	-	832M31	32nlcRmO145	35NCD14	-	-				
1.7176	SUP9(A)	55Cr3	5155	527A60	48	55C3	2253	55Cr3				
1.7225	SCM 440 (H)	42CrMo4	4140	708 M 40	42 CrMo 4	42 CD 4	2244	42 CrMo 4	F.1252		38HM	

H

VDI 3323: 40

Material Description: Chilled cast iron

Composition / Structure / Heat Treatment: Cast

HB: 400

HRc: 42

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.9620		GX260NiCr42	A532 IB	Grade 2 A	GJN - HV520	FB Ni4 Cr2 BC	0512	-		F45001		Ni - Hard2
.9625		GX330NiCr42	A532 IA	Grade 2 B	GJN - HV550	FB Ni4 Cr2 HC	0513	-		F45000		Ni - Hard1
.9630		GX300 CrNiSi 9 5 2	A532 ID	Grade 2 C	GJN - HV600	FB Cr9 Ni5	0457	-		F45003		Ni - Hard 4
.9640		GX300CrMoNi1521	-	-	-	-	-	-		F45005		
.9650		GX260Cr27	-	Grade 3 D		-	0466	-				
.9655		GX300CrNMo271	-	Grade 3 E		-	-	-			20C 25N20S2	
1.4841	SUH 310	X15CrNiSi25 - 20	310	314S31	X 15 CrNiSi 25 20	Z15CNS25 - 20	-	-		S31400		Cronifer 2520

H

VDI 3323: 41

Material Description: Hardened cast iron

Composition / Structure / Heat Treatment: Hardened

HB: 550

HRc: 55

Mat'l No.	JIS	DIN	AISI/ASTM/ SAE	BS	EN	AFNOR	SS	UNI	UNE / IHA	UNS	GOST	Brands
.9635		GX300 CrMo 15 3	-	-	-	-	-	-				
.9645		GX260 CrMoNi 20 21	-	-	-	-	-	-		F45007		

Application Guide

Steel Guide

Grade Recommendation based on Workpiece Material Condition

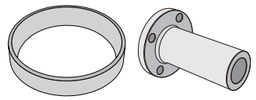
HARD

YG3115

YG3020

YG3030

TOUGH

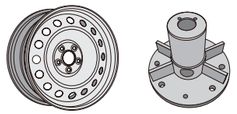


Pre Machined Condition

No Outer Skin / Scale

Uniform hardness on material

Has stable machining condition

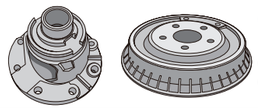


Welded Condition

Soft / No Outer Skin / Scale

Weld Bead Could be of Different Hardness than Actual Part

Stock on Part could even except weld Seam during Machining causing shock loads

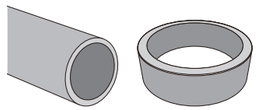


Cast Condition

Hard Outer Skin

Could have Sand Inclusion, - if Green Sand Cast

Component could have uneven Stock during machining

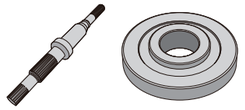


Hot Rolled Condition

Soft / No Outer Skin / Scale

Usually heat treated before machine to reduce Hardness

Component could have uneven Stock During Machining



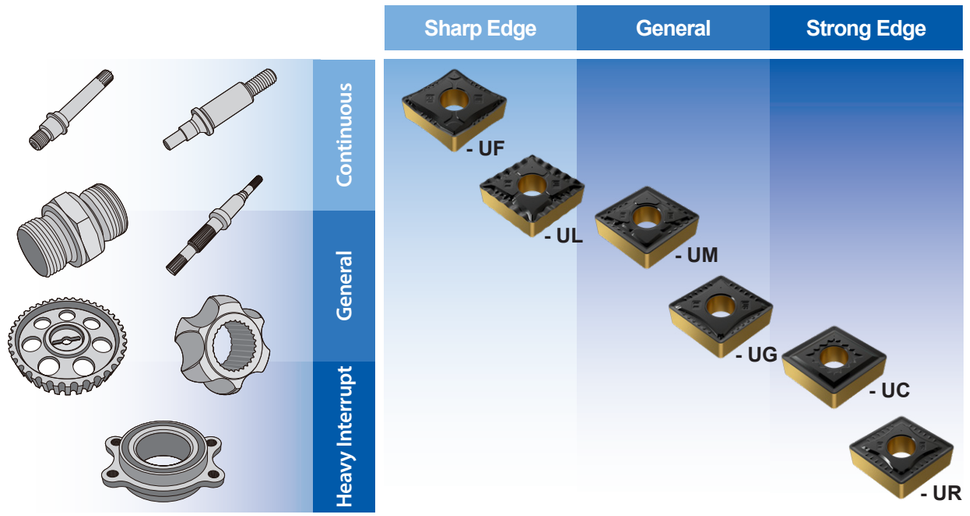
Forged Condition

Soft Outer Skin

Usually heat treated before machine to reduce Hardness

Component could have uneven Stock during machining

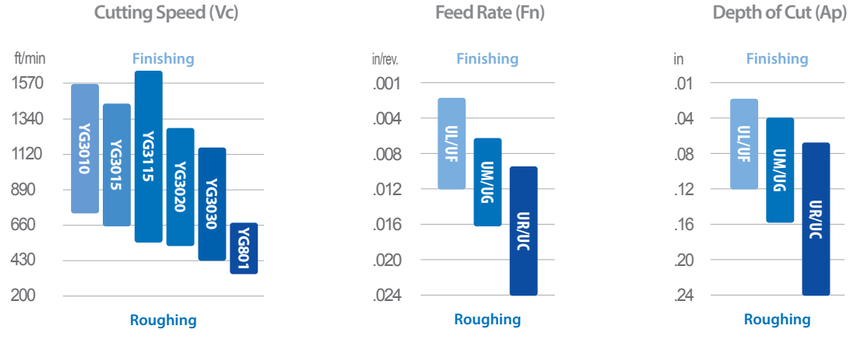
Chipbreaker, Feed Rate and Depth of Cut



Application Guide

Steel Guide

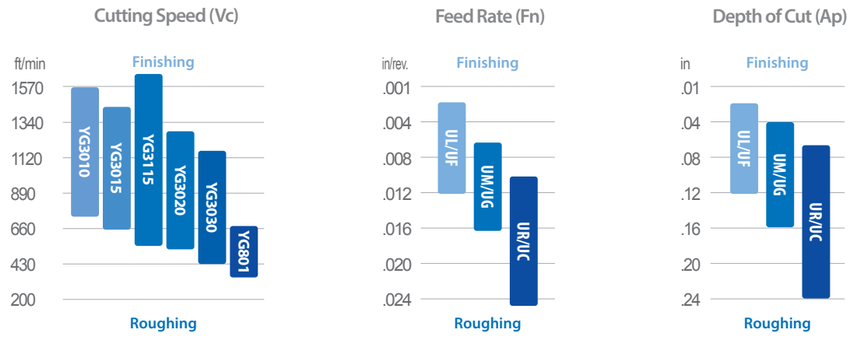
P	Non Alloy Steel, About .15% C (Low Carbon Steel)									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
1	S15C	CK15	1.0401	1015	1350	XC18	C15	F.1110	080M15	15



First Choice Grade and Value

YG3030 - Vc 280m/min (980 ft/min)

P	Non Alloy Steel, About .45% C (Medium Carbon Steel)									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
2~3	S45C	C45	1.0503	1045	1672	XC42H1TS	C45	F.1140	060A47	45



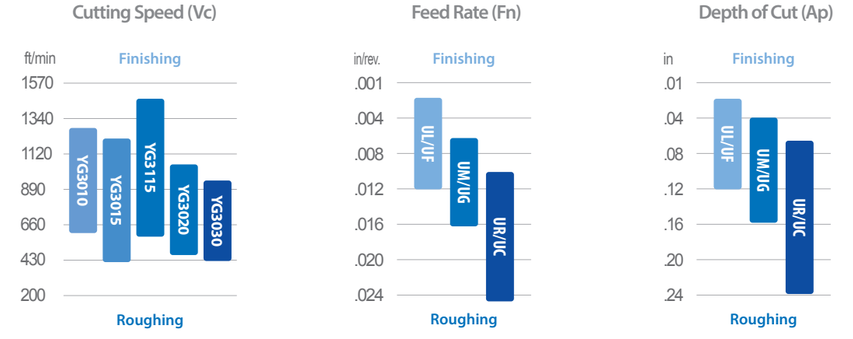
First Choice Grade and Value

YG3115 - Vc 330m/min (1,080ft/min)

Application Guide

Steel Guide

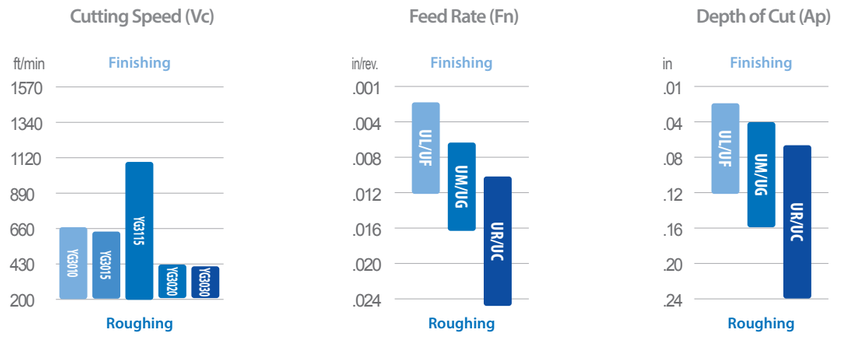
P	Low - alloyed Steel									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
6~9	SCM440	42CrMo4	1.7225	4140	2244	42 CD 4	42CrMo4	F.1252	708M40	38HM



First Choice Grade and Value

YG3020 - Vc 240m/min (790ft/min)

P	High Alloyed Steel, and Tool Steel									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
10~11	SKD11	X155CrVMo121	1.2379	D2	2310	Z160CDV12	X165CrMoW12KU	F.5318	BD2	KH12MF



First Choice Grade and Value

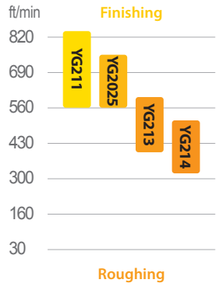
YG3115 - Vc 150m/min (490ft/min)

Application Guide

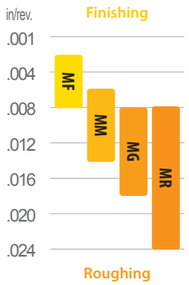
Stainless steel Guide

M	Ferritic / Martensitic Stainless									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
12~13	SUS430	X6Cr17	1.4016	430	2320	Z8C17	Z8C17	F.3113	430S15	12C17

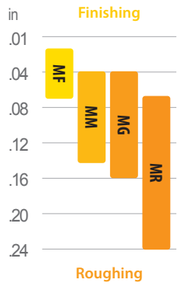
Cutting Speed (Vc)



Feed Rate (Fn)



Depth of Cut (Ap)



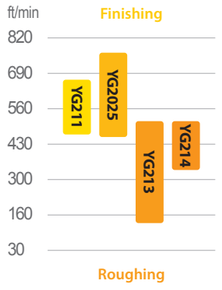
First Choice Grade and Value

Ferritic Stainless steel
YG213 - Vc 160m/min (520ft/min)
YG2025 - Vc 190m/min (620ft/min)

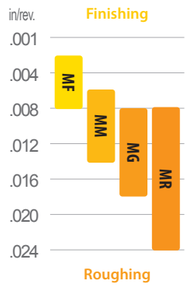
Martensitic
YG213 - Vc 130m/min (430ft/min)
YG2025 - Vc 160m/min (520ft/min)

M	Austenitic Stainless steel									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
14	SUS304	X5CrNi18 9	1.4350	304	2332	Z6CN18 09	X5CrNi18 10	F.3551	304S15	03KH18N11

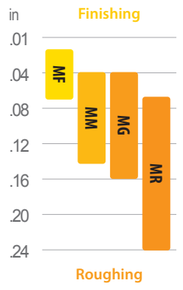
Cutting Speed (Vc)



Feed Rate (Fn)



Depth of Cut (Ap)



First Choice Grade and Value

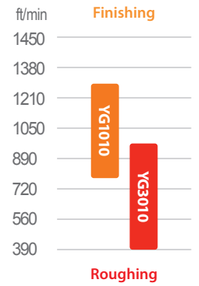
YG2025 - Vc 190m/min (620ft/min)

Application Guide

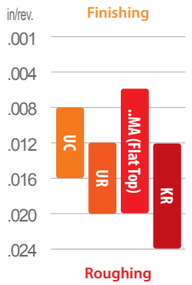
Cast iron Guide

K	Grey cast iron									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
15~16	FC250	GG25	.6025	A48 40 B	0125	Ft 25 D	G25	FG25	Grade 260	Sc 25

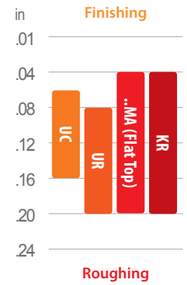
Cutting Speed (Vc)



Feed Rate (Fn)



Depth of Cut (Ap)

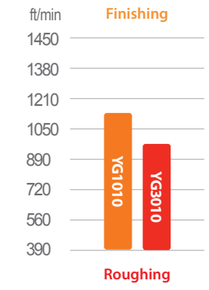


First Choice Grade and Value

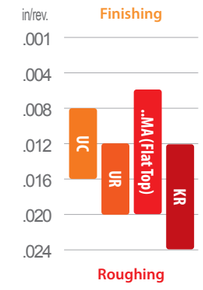
YG1010 - Vc 320m/min (1,050ft/min)

K	Nodular cast iron									
VDI	JIS	DIN	Mat'l No.	AISI/ASTM	SS	AFNOR	UNI	UNE	BS	GOST
17~18	FCD500	GGG50	.7050	80 - 55 - 06	.7050	FGS 500 - 7	GS 500 - 7	FGE50-7	SNG 500 - 7	Vc 50 - 2

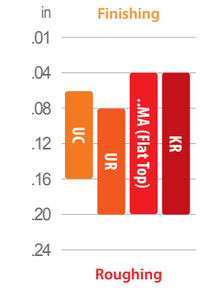
Cutting Speed (Vc)



Feed Rate (Fn)



Depth of Cut (Ap)



First Choice Grade and Value

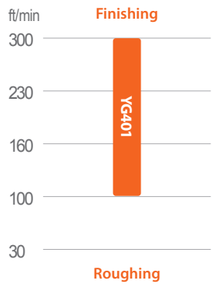
YG1010 - Vc 230m/min (750ft/min)

Application Guide

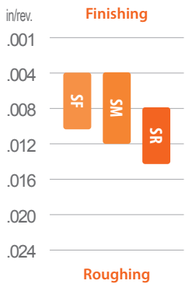
HRSA Guide

S	Superalloys & Titanium Alloys									
VDI	DIN	Mat'l No.	AISI/ASTM	AFNOR	BS	UNS	Brands	UNE	BS	GOST
31~37	NiCr19Fe19NbMo	2.4668	5383	NC19eNB	HR8	N07718	Inconel 718	F.3113	430S15	12C17

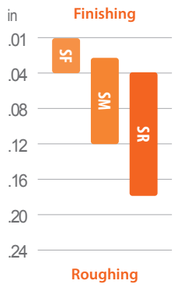
Cutting Speed (Vc)



Feed Rate (Fn)



Depth of Cut (Ap)



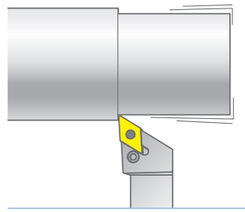
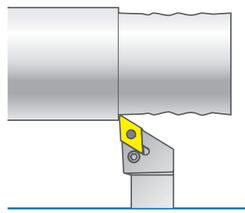
First Choice Grade and Value

YG401 - Vc 50m/min (160ft/min)

Application Guide

Surface Roughness Guide

Trouble Shooting

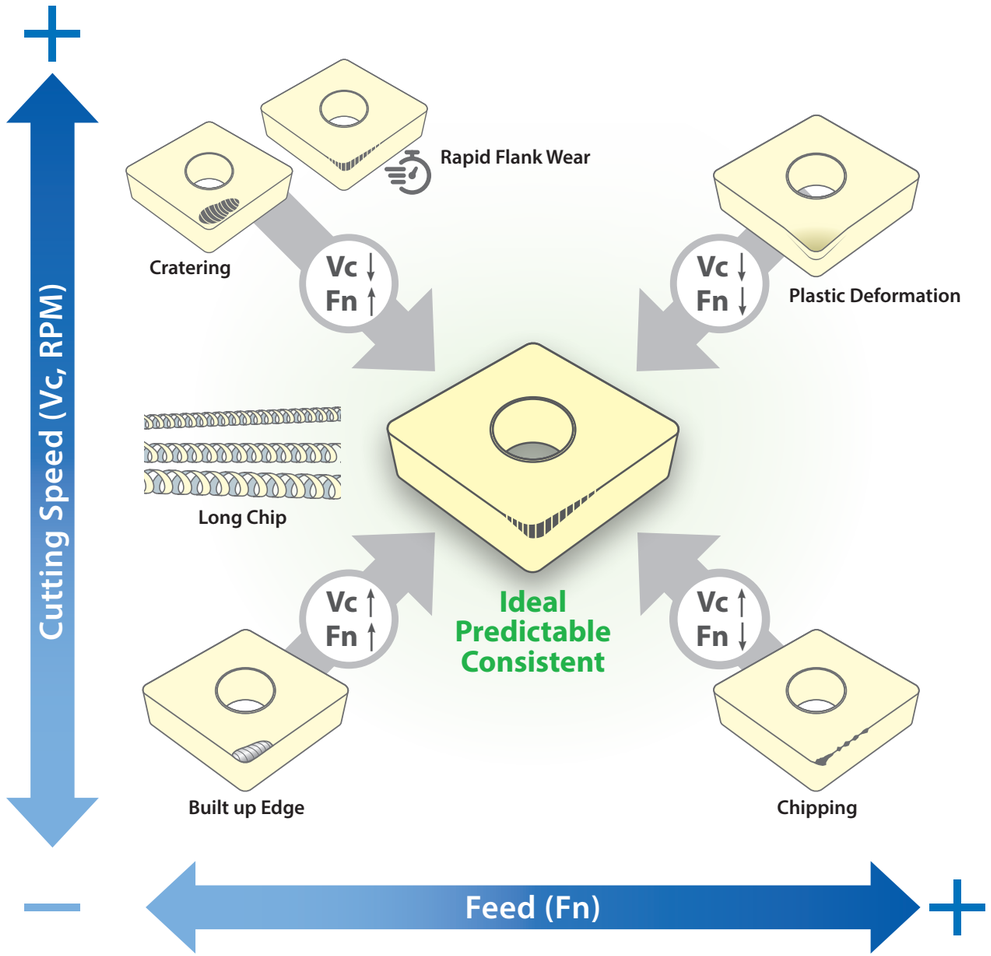
Pattern	Reasons	Solutions
Vibration		- Lower depth of cut (ap) - Use sharper chipbreaker
	- High radial or tangential force - Unstable condition - Feed is too low	- Lead/entry angle of tool - Reduce the overhang (larger and shorter tool) - Increase feed rate to generate proper axial force
Bad Surface		
	- Work material is damaged by chips - Feed is too high for corner radius	- Different chipbreaker - Lower depth of cut (ap) - Lower feed - Larger corner radius

Theoretical Surface Roughness

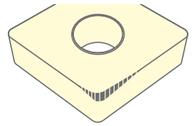
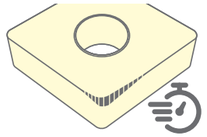
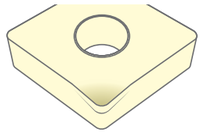
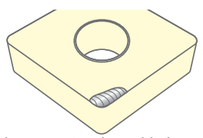
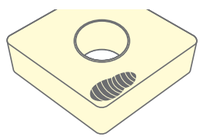
Ra / Rz µm (µ inch)	Insert Corner Radius Code ISO					
	02 (0)	04 (1)	08 (2)	12 (3)	16 (4)	24 (6)
	Feed Rate mm/rev (inch/rev)					
16 / 64	.002	.003	.004	.005	.006	.007
64 / 256	.004	.006	.008	.010	.011	.014
128 / 512	.006	.008	.011	.014	.016	.019
250 / 1000	-	.011	.016	.019	.022	.027
320 / 1280	-	-	.018	.022	.025	.031

Trouble Shooting

Trouble Shooting Guide map

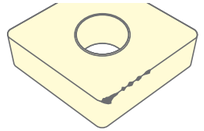
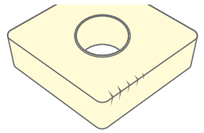
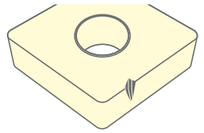
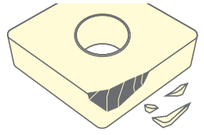
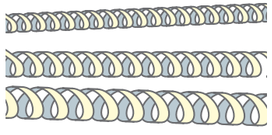


Trouble Shooting

Pattern	Reasons	Solutions
General Flank Wear  Flank face near by corner is abrased	- The most ideal wear - Consistent and predictable - General wear behavior when machining condition is normal	
Rapid Flank Wear  Looks same as general flank wear, but happens quickly	**Grade** - Not enough wear resistance - Too tough grade **Heat** - Cutting speed is too high - Not enough coolant	- More wear resistant grade - Reduce the cutting speed (Vc, SFM, RPM or SFPM) - Optimize coolant - Increase Feed (Fn) if feed is low
Plastic Deformation  Deformed Edge	- Excess thermal load - Excess mechanical load	- Reduce cutting temperature - More wear resistant grade - Reduce the cutting speed (Vc, SFM, RPM or SFPM) - Lower feed (Fn) - Lower depth of cut (ap) - Optimize coolant
Built up Edge  Workpiece material is welded on the cutting edge	- Sticky materials (low carbon steel, Stainless steel, non - ferrous metal, heat resistant super alloys) - Too low cutting speed	- Increase cutting speed - Lower feed rate - Sharper chipbreaker & geometry - Use high pressure coolant - Use PVD grade - Use Positive Insert
Cratering 	**Heat** - Cutting speed is too high - Too tough grade	- Reduce cutting temperature - Lower cutting speed (Vc, SFM, RPM or SFPM) - Adjust Feed (Fn) - Harder grade

Application Guide

Trouble Shooting

Pattern	Reasons	Solutions
Chipping 	- Unstable machining condition (Vibration) - Grade is too hard / brittle - Cutting edge is too sharp	- Focus on stabilizing cutting condition - Reduce overhang (shorter and bigger tool) - Tougher grade - Tougher chipbreaker
Thermal Crack 	- Thermal stress due to rapid change of temperature	- Tougher grade - Lower cutting speed (Vc, SFM, RPM or SFPM) - Lower feed (Fn) - Sharper chipbreaker - Change coolant / dry cut
Notching 	- Improved edge strength work piece has hardened skin	- More wear resistant grade - Reduce the cutting speed (Vc, SFM, RPM or SFPM) - Adjust Feed (Fn) - Lower depth of cut (ap) - Optimize coolant - Go for tougher chipbreaker
Breakage (Mechanical Fracture) 	- Mechanical load is too heavy (feed or depth is too high) - Heavy interrupted cut - Grade is too hard for work material - Unstable machining (vibration) - Cutting speed is too low - Impurities in work material	- Lower feed (Fn)or depth of cut (ap) - Tougher grade - Reduce overhang and check stability of tool and work material - Higher cutting speed (Vc, SFM, RPM or SFPM)
Long Chip 	- Feed is too low for chip breaking - Depth of cut is too shallow for corner radius - Chip area (Fn x Ap) too low	- Higher feed - Sharper chipbreaker - Higher depth of cut - Select a smaller corner radius

Technical Information

Comparison Chart - Turning Chipbreakers

Negative Inserts

ISO	Application	YG-1	SANDVIK	ISCAR	KENNAMETAL	Seco	Walter	Mitsubishi	Kyocera	Tungaloy	Sumitomo	Taegutec	Korloy
P	Super Finish	**SF**	-	SF	FF (G - class), WF, UF	FF1, FF2	FP5, FV5	PK (G - class), FY, FH, FS	DP (G - class), GP WQ	01, TF	FA, FL, FB	FA	VL
	Finish	**UF**	QF	F3P, NF	FN	MF2	NF4, NF3	FP, C	PP, GP DP, XF, XP	TS, TSF, ZF, 11, NS, NM, CB	LU, FE, SU	FLP, FA, FS, GG - FU, FX, FLP, FG, FM	VF, VB
	Semi Finish	**PSF**	XF	NF, TF	FN	MF2	MP3	FP, FH	HQ	TSF	NSU	FG, FM	VQ
		UL	PF, XF		FN, MN	MF3	NS6	C (Cermet)	CQ, VC, PP	AS	SE	MLP, FC, FT	VQ, VC
		UM			-	MF5	MP3	SH, SA, LP	PQ, CJ, VF, XQ	ZM, AM	SX		LP
	Medium	**UG**	PM, QM, XM	PP, TF, M3P, M4PW	MN	M3, M5, MR3	NM4, MP5, MU5, NM6	MA, MH, MP MV	GS, PS, PG	TM AM, DM, ZM	GU (□UG□), GE, UX	MLP, MC, MGP, PC, MM	VM, MP
	Rough	**UC**	PR	GN	MR, RP	MR4, M5, M6	MG -	MG - , None C/B	XS	TH, THS	UZ	MT, MGP, MG -	B25
		UR	XMR	R3P, NR	RN	MR3, MR6	NR4, RP5, RP7	RP, GH	PT, GT, PH	TU, TRS, TUS	MU, ME, MX	RGP, RT, RX	HR, GR
	Wiper	**PWM**	WF, WR WMX, WM	WF, WG	FW, MW, RW	W - M3, W - MF2, W - MF5, M6, W - R4	NF, NM	SW, MW	WP, WF, WQ, WE	AFW, FW, ASW, SW	LUW, SEW, GUW	WS, WA, WT	VW, LW
M	Finish	**MF**	MF	SF, F3M, NF	FF, FP	MF1	NF4, FM5	SH, LM	MQ, SQ	SF, SA	SU, EF	EA, SF	VP2, MP
	Medium	**MM**	MM	M3MW, TF, M3M	MP, UP	MF4	MM5(NM4)	MS, GM	TK, MS	SM, SS	GU	EM, ML	HS, MM
		MG		VL, PP	MR		RM5, NR4	MM, ES	SG, SX	S, TA	EX, EG		
	Rough	**MR**	MR, XMR, MRR	GN, R3M, NR	P, RP	M5, M6 MR7, RR6	NRS	GH, RM	MU	TH, SH, TU	MU, HM, EM	ET	GS, RM
K	Finish	**UC**	KF,	M3P, GN	T - 20, FN, MT	MF3, MF5, M4	NM, MK5	LK, MA	None C/B, C	CF	UZ	MT	MP
	Medium	**UG**	KM,	GN, A	UN(RP), T - 20	M5	NM5, RK5	MK, GK	KQ, KG	CM, None C/B	GZ	MG -	B25, MK
	Rough	**..MA**	KR, KRR	NR, A	MR, S - 20, … MA, T - 20	MR7	MV7, RK7	RK, - MA	- MA, GC, KH, ZS	CH	(□UX□)	KT, RT	- MA, RK
S	Super Finish	**SF**	SF	SF	FS (G - class) LF (G - class)	MF1	NF4	FJ(G - class)	MQ	-	EF	EA, SF	VP1
	Medium	**SM**	NGP, SM	PP, TF, VL	MS, GP, P, UN	MF4	NMS, NMT	MJ(G - class), MS	SQ, MS, MU, TK	HRM HMM	EX	EM MGS, MP, MK	VP3
	Rough	**SR**	SR, SMR	MR	RP	MR3, MR4	NRS, NRT	RS, GJ	SG, SX	SA	MU	ET	VP4

Positive Inserts

ISO	Application	YG-1	SANDVIK	ISCAR	KENNAMETAL	Seco	Walter	Mitsubishi	Kyocera	Tungaloy	Sumitomo	Taegutec	Korloy
P	Finish	**PF**	PF	PF, F3P	FP	FF1	FP4	SV, FP	GP	PSF, PF	FB, LU	FA, FG	VL, VF
		UF	PF, UF UM	PF, F3P SM, 14	11, UF	F1	FP4, PS5	SMG(G - class), FV, LP	CF, PF, DP, PP, VF	01, TSF	FP, SU, SC	FX, GT - SL, GT - SA, GT - SM	VL
	Medium	**PM**	SM, M3P	MF	MF2, F2	MP4	MV	HQ, GK	PSS, PS	SU, SC	FM, PC, MT	MP	
		UG	PM, XM, XF	SM, M3P	LF, FP (Posi)	M5	FP6, PM5, E47	MP	XQ, XP	PM, TM 23, 24	MU, LB, SF	MT, PMR -	HMP
M	Finish	**MF**	MF, MMC	PF, SM, M3M, 14	11, UF, GT - LF, FP	F1, F2	FM4	FM, LM	MQ	PSF, PSS, PS	FC, SI LU, SU	FG, SA	VP1
	Medium	**MM**	MM	M3M, SM	MP, MF	M3	MM4, RM4	MM		PM	MU		VL
K	Medium	**UG**	KM, KR	SM, 14	MT, T - 20, MP, C	M5	F2, FK6, MK4, RK6	MK, None C/B	None C/B	CM, None C/B	MU, None C/B	PC, MT	MP, C25
S	Super Finish	**SF**	GT - UM		GT - HP, LF	GT - F1	GT - PF2	FS(G - class) LS(G - class)				GT - FGS, SA	VP1
	Finish	**SM**	MF, UM	SM,PF,F3M,14	FP, LF	F1, F2	PF4, PS5	FS - P(G - class) LS - P(G - class)	MQ	PSF	SI	FG	VL
	Medium	**SR**	MM	M3M, SM		MF2	PM5	LS, MS		PSS, PS		PC	MP
N	Finish	**AL**	AL	AS	HP	AL	MN2	AZ	AP, AH	AL, PP	AG	GT - SA, FL	AK, AR

Technical Information

Comparison Chart - Turning Grades

CVD Coated

ISO	YG-1	ISCAR	SANDVIK	SECO	PRAMET	KENNAMETAL	TUNGALOY	MITSUBISHI	WALTER	TAEGUTEC	KORLOY	SUMITOMO	KYOCERA
P	**YG3010**	IC8150 IC9150 IC9015	GC4415 GC4305 GC4315	TP0501 TP1500 TP1501	T9310 T9315	KCP05B KCP05 KCPK05 KCP10B KCP10	T9205 T9105 T9215 T9115	UE6105 UE6110 MY5015 MC6015	WPP10G WPP01 WPP05S WPP10S	TT8105B TT8115B TT8105 TT8115	NC3215	AC8015P AC810P AC700G	CA510 CA515 CA5505 CA5515
	YG3115	IC8150 IC9150	GC4315 GC4415	TP1501 TP1500	T9315	KCP10 KCP10B	T9115 T9215	MC9015 MC6115 UE6110	WPP10 WPP10S	TT8115 TT8115B	NC3215	AC8015P AC8020P AC810P	CA515 CA5515
	YG3020	IC8250 IC9250	GC4425 GC4325	TP2500 TP2501	T9325	KCP25 KCP25B	T9225 T9125	MC6025 UE6020	WPP20G WPP20S WMP20S	TT8125B TT8125 LC225P	NC3120 NC3225	AC8025P AC820P	CA025P CA525 CA5525
	YG3030	IC8350 IC9350	GC4235 GC2135 GC4035	TP3500 TP3501	T9335	KCP30B KCP30 KCP40B KCP40	T9235 T9135	MC6035 UE6035 UH6400	WPP30G WPP30S WKP30S		NC3030 NC5330	AC8035P AC830P	CA530 CA5535
M	**YG3030**	IC6015 IC6025 IC9300 IC520M IC4050 IC635	GC2015 GC2025 GC2035 GC235	TM1501 TM2501 TM3501	T7325 T7330 T7335	KCM15B KCM15 KCM25B KCM25 KCM35B KCM35	T6120 T6020 T6130 T6030	MC7015 MC7025 US7020 US735 UH6400	WMP20S	TT9215 TT9225 TT9235	NC9115 NC9125 NC9135 NC5330	AC6020M AC610M AC6030M AC630M AC6040M AC830P	CA6515 CA6525
	YG2025	IC9025 IC9325	GC2220	TM2501 TM2000		KCM25	T6120 T9125	MC7025 US7020		TT9225 TT5100		AC6020M AC6030M	CA6525
K	**YG1010** **YG1001**	IC5005 IC5010 IC4028 IC8150	GC3205 GC3210 GC3215	TK0501 TK1501	T5305 T5315	KCK05 KCK05B KCK15 KCK15B KCK20 KCK20B KCPK05	T5105 T515 T5115 T1215 T1115 T5125 T5020	MC5005 UC5105 MC5015 UC5115 MY5015	WKK10S WKK20S WAK30 WKP30S WKK10 WKK20	TT3005 TT7005 TT7310 TT7015	NC6310 NC6315 NC5330	AC4010K AC405K AC4015K AC415K AC420K AC8025P	CA310 CA315 CA320 CA4505 CA4515

PVD Coated

P	**YG801**	IC807 IC830 IC507 IC908	GC1025	TP1030 TP1020	T6310 T8430 T8345	KU10T KCU10 KT315 KU25T KC5010	AH330 AH725 AH730 SH725 SH730	VP10RT MS6015 VP15TF VP20MF VP20RT UP20M	WTA43 WTA41	TT4410 TT9020 TT4430 TT9080 TT8080	PC5300 PC5400 PC3035	AC1030U	PR930 PR1225 PR1535 PR1725
M	**YG211**	IC3028 IC907	GC1105 GC1115 GC2015	TS2000 TS2050	T6310 T8315	KCU10 KCU5010	AH120 AH140 AH630 AH645	VP10RT	WSM21 WSM01 WSM10S	TT5030	PC8105 PC8110	SC520U AC1030U	
	YG401	IC807						MP9005		TT5080	PC8115	AC5005S	
	YG213	IC908	GC2025	CP200 CP500	T8330 M6330	KCU25 KCU5025	SH725 AH7025	VP15TF VP20MF VP20RT UP20M MP7025	WSM20S	TT9080	PC5300 PC8120 PC9030	AC530U	PR930 PR1225 PR1535 PR1725
	YG214	IC330 IC830	GC2035	CP600	T8430		SH730 GH330 GH730 AH4035		WSM30S	TT8080 TT8020	PC5400		
S	**YG401**	IC804 IC806 IC830 IC807 IC908	GC1025 GC1105 GC1125	TS2000 TS2050 TS2500 TH1000 CP200	M6330 T6310	KCS10 KCU10 KCU25 KC5010 KC5025 KCS10B	AH110 AH120 AH905	MP9005 VP05RT MP9015 VP10RT MP9025 VP20RT MV9005	WSM01 WSM10S WSM20S WSM21 WSM30S	TT3010 TT3020 TT5080 TT5030	PC8105 PC8110 PC8115 PC5300 PC5400	AC5015S SC5025S AC510U AC520U AC5005S	PR005S PR015S PR1535 PR1125 PR1305 PR1310

Non Coated

N	**YG10**	IC20	H13A H10F	KX		K313 K68		HTi10	WK1		H01 H05	H1	KW10

Cermet

P10	**YT100**	IC30N	CT5005 CT5015 CT525 GC1525	TP1030 CMP CM	TT010 TT310	KT5020 KT125 KT150	GT730 GT530 NS520 NS720	UP35N	TN60 TN610 TN620 TN90	CT3000	CN1500 CN2500 CC125	T1500A T1000A T2500Z	TN60 TN610 TN620 TC40N

Technical Information

Comparison Chart - Milling Grades

ISO	YG-1	SANDVIK	SECO	KENNAMETAL	ISCAR	WALTER	TUNGALOY	MITSUBISHI	TAEGUTEC	KORLOY	SUMITOMO	KYOCERA	HITACHI	DIJET
P	**YG712**	GC4220 GC1130	T250M MP3000	KC715M KC522M KC635M		WKP25S WKP25 WAM10	T3130 GH330	MP8010 MP6120 MP6130 MP9120	TT7070 TT7080 TT7030	PC3700 PC3600 PC3500	ACP2000 ACZ310	PR730	CY9020 JP4020 TB6045	JC5003
	YG713	GC4230 GC4330	T350M F25M	KC525M	IC950 IC1008	WAM20 WAM30	AH710 AH120 T3225			PC210F	ACP200 ACZ330	PR830 PR630	JP4120 CY250	JC5015
	YG602	GC1030 GC4240	F30M	KC725M KC735M	IC900 IC808 IC908 IC330	WKP35G WKP35S	T3130 AH3035 AH110	VP15TF VP20RT MP9130	TT9030 TT9080	NC5330 PC5300 NCM325 NC5350	ACP3000	PR1025 PR1225	PTH30E JS4060 JP4160	JC5030 JC5040
	YG613	GC4340 GC1040	F40M T60M	KCPM20 KC935M KCPM40	IC830 IC928	WKP45S WKP45X WSP45S	AH725 AH730 GH330 AH130 AH140	FH7020 VP30RT F7030	TT8020 TT8025 TT8080	NC5340 PC5400 NCM335	ACP300 ACZ350	PR1525 PR1230 PR660	JM4160 PTH40H	
M	**YG602**	GC2030 GC1030	F25M	KC635M KC522M KC725M	IC330	WAM30 WXM35 WSM35	AH725 AH120 GH110 AH730	VP15TF MP7130 MP7030	TT9030 TT9080	PC210F PC5300 NCM325 NC5350	XCU2500 ACM100 ACP200 ACM300	PR1025 PR1225 PR1525 PR630	JX1015 TB6020 CY250 GX2160 JX1045	JC5003 JC5015 JC5030
	YG613	GC2040	F30M F40M	KC722	IC928 IC328	WSP45	AH140 GH340	MP9030 MP7140 VP30RT	TT8080 TT8020	PC9530 NCM335 PC5400	ACP300 ACZ350 ACP400	PR660 PR1535 PR660	TB6045 JX1060 TB6060	JC5040
K	**YG5020**	GC3220 GC1020	MK1500 MP1500	KC915M	DT7150 IC5100 IC418	WAK15	T1015	VP15TF	TT6290 TT7515 TT6800	NC5330 PC8110	XCK2000	PR1510 PR510		JC5003
	YG501	GC3040	MK2050 MK2000	KCK15 KC520M	IC910 IC810	WKK25S WKP25	T1115 T1215 AH120	MP8010 MC5020	TT6080 TT6030	PC6510 NC5340	ACK200 ACZ310	PR1210 PR905		JC5015
	YG622		MK3000			WKP35	GH110	VP20RT		NC5350 PC5300	ACK300	CA420M		
S	**YG602**	GC1025 GC1040	F40M MM4500	KC510M KCU30M	IC328 IC408	WSM35S		VP15TF VP30RT	TT9030 TT8020 TT9540	PC5300 PC5400 PC9540	AC520U	CA6535 PR620	ACS05E	
	YG613	S30T S40T	MS2500	KC725M	IC903	WSM45S WSM45X		MP9130	TT8080 TT3540	UPC845		PR660 PR1535		
	YG012	GC1130 GC1030	MP1500 MP3000		IC1008			VP15TF						

ISO ↔ ANSI

ISO	ANSI
CC.. 060201	CC.. 21.50
CC.. 060202	CC.. 21.5.5
CC.. 060204	CC.. 21.51
CC.. 060208	CC.. 21.52
CC.. 09T301	CC.. 32.50
CC.. 09T302	CC.. 32.5.5
CC.. 09T304	CC.. 32.51
CC.. 09T308	CC.. 32.52
CC.. 120402	CC.. 43.5
CC.. 120404	CC.. 431
CC.. 120408	CC.. 432
CC.. 120412	CC.. 433
CN.. 090308	CN.. 322
CN.. 090312	CN.. 323
CN.. 090408	CN.. 332
CN.. 090412	CN.. 333
CN.. 120401	CN.. 430
CN.. 120402	CN.. 43.5
CN.. 120404	CN.. 431
CN.. 120408	CN.. 432
CN.. 120412	CN.. 433
CN.. 120416	CN.. 434
CN.. 160608	CN.. 542
CN.. 160612	CN.. 543
CN.. 160616	CN.. 544
CN.. 190608	CN.. 642
CN.. 190612	CN.. 643
CN.. 190616	CN.. 644
CN.. 190624	CN.. 646
CN.. 250924	CN.. 866
DC.. 070202	DC.. 21.5.5
DC.. 070204	DC.. 21.51
DC.. 070208	DC.. 21.52
DC.. 11T301	DC.. 32.50
DC.. 11T302	DC.. 32.5.5
DC.. 11T304	DC.. 32.51
DC.. 11T308	DC.. 32.52
DC.. 11T312	DC.. 32.53
DN.. 110404	DN.. 331
DN.. 110408	DN.. 332
DN.. 150404	DN.. 431
DN.. 150408	DN.. 432
DN.. 150412	DN.. 433
DN.. 150604	DN.. 441
DN.. 150608	DN.. 442
DN.. 150612	DN.. 443
SC.. 09T304	SC.. 32.51
SC.. 09T308	SC.. 32.52
SC.. 120408	SC.. 432
SD.. 1203	SD.. 42
SC.. 120412	SC.. 433
SD.. 120420	SD.. 435
SD.. 1504	SD.. 53
SE.. 1203	SE.. 42

ISO	ANSI
SN.. 090304	SN.. 321
SN.. 090308	SN.. 322
SN.. 120404	SN.. 431
SN.. 120408	SN.. 432
SN.. 120412	SN.. 433
SN.. 120416	SN.. 434
SN.. 150612	SN.. 543
SN.. 190612	SN.. 643
SN.. 190616	SN.. 644
SN.. 190624	SN.. 646
SN.. 250724	SN.. 856
SN.. 250924	SN.. 866
SP.. 1203	SP.. 42
SP.. 120308	SP.. 422
SP.. 1504	SP.. 53
TC.. 110204	TC.. 21.51
TC.. 110208	TC.. 21.52
TC.. 16T302	TC.. 32.5.5
TC.. 16T304	TC.. 32.51
TC.. 16T308	TC.. 32.52
TN.. 160404	TN.. 331
TN.. 160408	TN.. 332
TN.. 160412	TN.. 333
TN.. 220404	TN.. 431
TN.. 220408	TN.. 432
TN.. 220412	TN.. 433
TN.. 220416	TN.. 434
TP.. 1603	TP.. 32
TP.. 160308	TP.. 322
TP.. 2204	TP.. 43
VB.. 110301	VB.. 220
VB.. 110302	VB.. 22.5
VB.. 110304	VB.. 221
VB.. 110308	VB.. 222
VB.. 160402	VB.. 33.5
VB.. 160404	VB.. 331
VB.. 160408	VB.. 332
VC.. 110301	VC.. 220
VC.. 110302	VC.. 22.5
VC.. 110304	VC.. 221
VC.. 110308	VC.. 222
VC.. 160402	VC.. 33.5
VC.. 160404	VC.. 331
VC.. 160408	VC.. 332
VN.. 160404	VN.. 331
VN.. 160408	VN.. 332
VN.. 160412	VN.. 333
WN.. 060404	WN.. 331
WN.. 060408	WN.. 332
WN.. 060412	WN.. 333
WN.. 080404	WN.. 431
WN.. 080408	WN.. 432
WN.. 080412	WN.. 433
WN.. 080416	WN.. 434

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