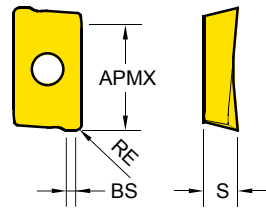


Milling - Shoulder Milling - Inserts
APGT - Shoulder Milling Positive (2 Corner)



Series	APMX	IC	S
APGT 1035	9	6.7	3.6
APGT 1604	14	9.4	5.3

EDP 1200..

●: Stock item ○: Order made item

H20	P15	P25	P30	P30	P30	P40	K10	N15
P20			K30	M30	M30	M40		
			S30	S30	S30	S40		
YG012	YG712	YG713	YG622	YG612	YG602	YG613	YG5020	YG50
								● 0730
								● 0428
								● 0798

APGT

Designation

RE (mm)

Fz (mm/tooth)

BS (mm)

APGT 100305 - AL	0.5	0.05 ~ 0.25	1.4
APGT 160408 - AL	0.8	0.05 ~ 0.25	1.7
APGT 160430 - AL	3.0	0.05 ~ 0.25	0.2

NEW

-AL
Aluminium



TURNING

PARTING & GROOVING










MILLING

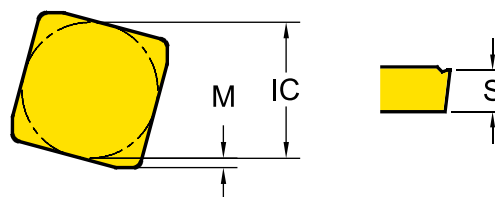
DRILLING

TECHNICAL INFORMATION

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

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

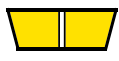



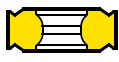


3 - Tolerance Class



Symbol	Inner Circle IC (mm)	Nose Height M (mm)	Thickness S (mm)
C	± 0.025	± 0.013	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.025	± 0.13
H	± 0.013	± 0.013	± 0.025
K*	± 0.05~0.15*	± 0.013	± 0.025
M*	± 0.05~0.15*	± 0.08~0.2*	± 0.13
U*	± 0.08~0.25*	± 0.13~0.38*	± 0.13

* 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	

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	

5 - Insert Size

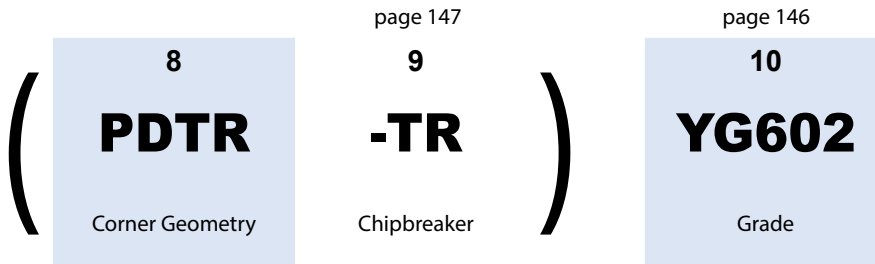
* No Standard for milling insert size

6 - Insert Thickness

* No Standard for milling insert thickness

Milling - Code System

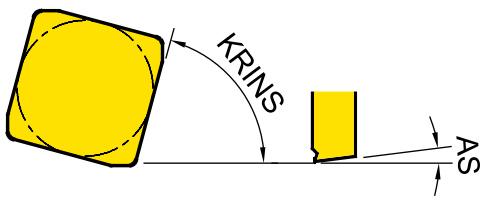
Insert ISO Code System



7 - Corner Radius (RE)

Symbol	Corner Radius - RE(mm)	Symbol	Corner Radius - RE(mm)
04	0.4	16	1.6
08	0.8	20	2.0
12	1.2	24	2.4

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

*Refer to page. 147 for -AL, -ST, -TR... types

8-1 - Cutting Edge Angle (KRINS)

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

8-3 - Edge Condition

Symbol	Edge Condition
F	Sharp
E	Round
T	Chamfer
S	Chamfer and Round

8-2 - Wiper Edge Clearance (AS)

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

8-4 - Feed Direction

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

Milling Grades and Chipbreakers

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																							
	YG612	612					612												612						
	YG622	622									622														
	YG602	602					602				602								602						
	YG613	613					613																		
	YG501										501														
CVD	YG5020										5020														
Uncoated	YG50														50										

TECHNICAL INFORMATION	<p>NEW</p> <p>YG012</p> <p>H10 - H30</p> <p>P10 - P30</p>	 <p>PVD - TiAlN</p>	<p>Optimized Milling Grade for Pre-Hardened & Hardened steel</p> <ul style="list-style-type: none"> Applied Extreme Oxidation PVD layer and Crack-free Substrate Excellent Cutting performance for Die & Mold application
	<p>YG712</p> <p>P10 - P30</p>	 <p>PVD - TiAlCrN</p>	<p>Milling Grade for Medium of Steel Application</p> <ul style="list-style-type: none"> Superior wear resistance and excellent toughness in high speed machining Coating layer with high hardness and oxidation resistance
	<p>YG713</p> <p>P15 - P25</p>	 <p>PVD - TiAlN</p>	<p>Milling Grade for General Steel Application</p> <ul style="list-style-type: none"> Multi-layer TiAlN structure realizes stronger crater and flank wear resistance Fine-grained carbide and balanced substrate
	<p>YG622</p> <p>P20 - P35</p> <p>K20 - K40</p>	 <p>PVD - AlCrN</p>	<p>Optimized Grade for High Alloyed or Prehardened Steel</p> <p>Excellent for High Temperature Hardness and Oxidation Resistance at High Speed</p>
	<p>NEW</p> <p>YG612</p> <p>P20 - P40</p> <p>M20 - M40</p> <p>S20 - S40</p>	 <p>PVD - TiAlN</p>	<p>Specialized Multi-Nano Coated Grade with high wear resistance and chipping resistance</p> <ul style="list-style-type: none"> Special Multi-Nano coating prevent crack and providing predictable tool life Special universal Grade can achieve stable tool life in any workpiece

Milling Grades and Chipbreakers

Milling Grades

<p>YG602</p> <p>P20 - P35 M20 - M40</p> <p>K20 - K40 S15 - S25</p>	<p>PVD - TiAlN</p>	<p>Universal grade for General Milling Application</p> <ul style="list-style-type: none"> • Ultra Dense PVD Coating with optimal thermal resistance & strength • Sub-Micron substrate designed for demanding application
<p>YG613</p> <p>P30 - P50</p> <p>M30 - M40</p>	<p>PVD - TiAlN</p>	<p>Milling Grade for Stainless Steel Application</p> <ul style="list-style-type: none"> • 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
<p>YG501</p> <p>K05 - K25</p>	<p>PVD - TiAlN</p>	<p>Hard Milling grade for Cast Iron</p> <ul style="list-style-type: none"> • Substrate especially designed for high wear resistance • Excellent wear resistance in cast iron milling application
<p>YG5020</p> <p>K01 - K30</p>	<p>CVD - TiCN - Al₂O₃</p>	<p>CVD Milling grade for Cast Iron</p> <ul style="list-style-type: none"> • CVD coating for Excellent wear resistance • Improved Toughness for chipping resistance
<p>YG50</p> <p>N05 - N20</p>	<p>Uncoated</p>	<p>Uncoated Milling Grade for Aluminium</p> <ul style="list-style-type: none"> • Submicron carbide substrate for high wear resistance • Preventing built up edge with shining surface

Milling Chipbreakers

<p>-AL</p>		<ul style="list-style-type: none"> • For Aluminum • Very Sharp Geometry
<p>-ST</p>		<ul style="list-style-type: none"> • For Stainless Steel, Super Alloy • Sharp Geometry
<p>-GN (General Type)</p>		<ul style="list-style-type: none"> • First Choice for General Application
<p>-TR</p>		<ul style="list-style-type: none"> • For Hardened Steels • Reinforced Geometry
<p>...W / ...N</p>		<ul style="list-style-type: none"> • For Hardened Material and Cast Irons