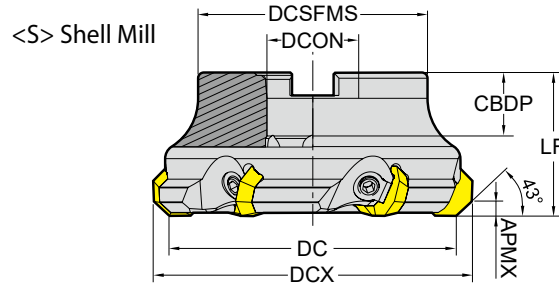


Milling - Face Milling - Cutter Cutters for OFER

Cutting Angle : 43°
8 Corner Positive



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

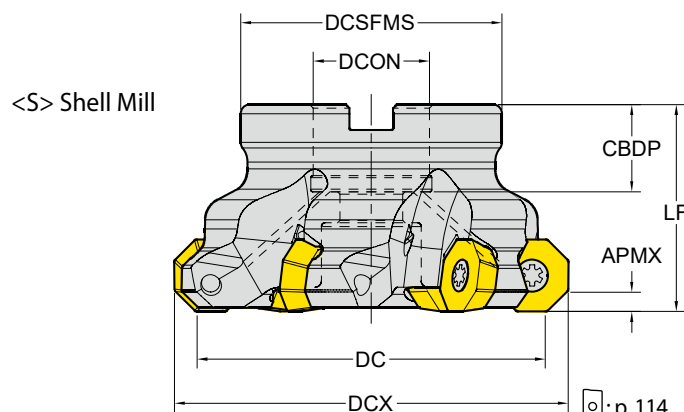
: p. 115

Unit:mm

Series	APMX	Designation	EDP 1700..	DC	DCX	ZEFP	LF	TYPE	DCON	CBDP	DCSFMS	PCD1	PCD2	
OFER 0704	5.0	F43 - OFER07 - D63Z4S22 - WOC	0484	63	75	4	45	Shellmill	22	22	48	-	-	X
		F43 - OFER07 - D80Z5S27 - WOC	0485	80	92	5	50		27	25	58	-	-	X
		F43 - OFER07 - D100Z6S32 - WOC	0486	100	112	6	50		32	26	80	-	-	X
		F43 - OFER07 - D125Z8S40 - WOC	0487	125	137	8	63		40	32	85	-	-	X
		F43 - OFER07 - D160Z9S40 - WOC	0488	160	172	9	63		40	32	110	66.7	-	X

Milling - Face Milling - Cutter Cutters for ODMT, ODMW

Cutting Angle : 43°
8 Corner Positive



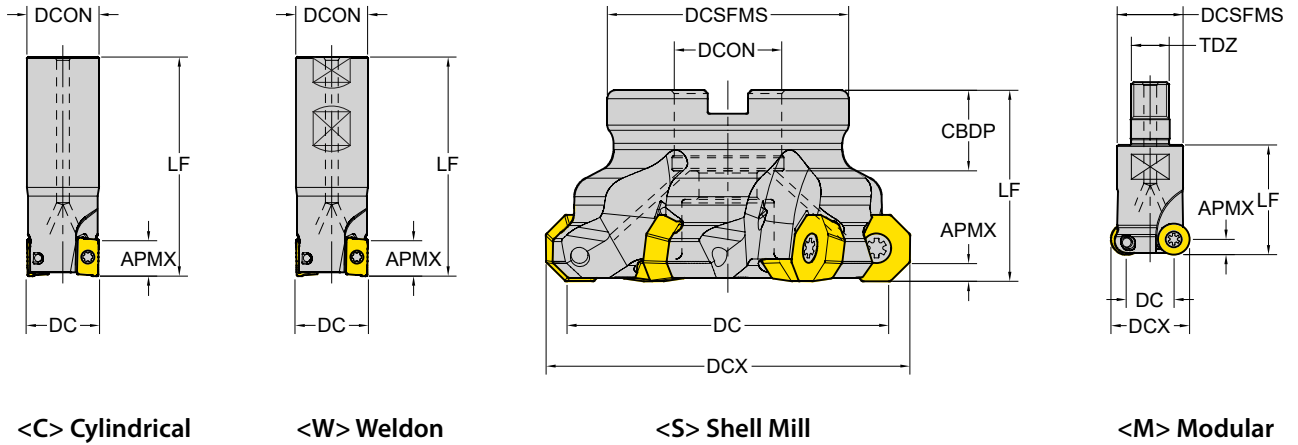
ZEFP : Effective Number of Cutting Edges
CICT : Number of Inserts
CBDP : Connection Bore Depth

: p. 114

Unit():mm

Series	APMX	Designation	EDP 1700..	DC	DCX	ZEFP	LF	TYPE	DCON	CBDP	DCSFMS	PCD1	PCD2	
ODMT ODMW 0605	3.5	F43 - ODMT06 - D63Z5S22	0001	63	73	5	40	Shellmill	22	20	50	-	-	●
		F43 - ODMT06 - D80Z6S27	0002	80	90	6	50		27	23	56	-	-	●
		F43 - ODMT06 - D100Z7S32	0003	100	110	7	50		32	26	78	-	-	●
		F43 - ODMT06 - D125Z8S40	0004	125	135	8	63		40	28	89	-	-	●

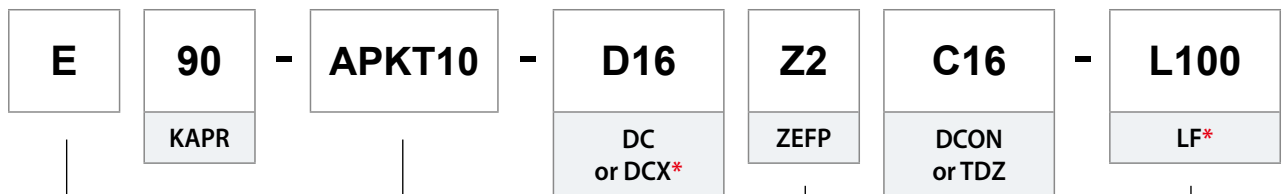
Code Keys - Milling Cutters



Cutting Angle
(90°)

Cutter Diameter
(Ø16)

Connection Type and Size
C - Cylindrical W - Weldon
S - Shell Mill M - Modular
(Cylindrical Ø16)



Cutter Type
E - Endmill Type
F - Facemill Type
M - Modular Type

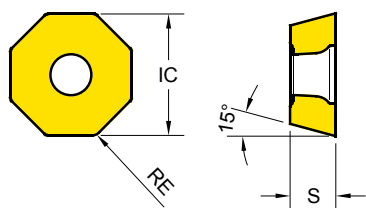
Insert Series
(APKT 10)

Number of Teeth
(Z=2)

Functional Length
(100mm)

Milling - Face Milling - Inserts
ODMT, ODMW - Face Milling Positive (8 Corners)

Series	IC	S
ODM* 0605	15.9	5.6



EDP 1200..

●: Stock item ○: Order made item

P25	P30	P20	P30	P40	K15	K15
M30	K30			M35	S30	H15
S20						

ODMT ODMW	Designation	RE (mm)	Fz (mm/tooth)	BS (mm)	YG602	YG622	YG712	YG713	YG603	YG501	YG5020
	ODMT 060508	0.8	0.21 ~ 0.35		● 0030						
ODMT General											
	ODMW 060508	0.8	0.26 ~ 0.40		● 0031						
ODMW Hard Materials											

Cutting Speed			Vc (m/min.)													
ISO	VDI	Sub Group	YG602		YG622		YG712		YG713		YG603		YG501		YG5020	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
P	1~5	Non-Alloyed Steel	140	380	140	400	170	300	150	280	90	230	-	-	-	-
	6~9	Low-Alloyed Steel	120	300	120	320	180	250	130	235	70	210	-	-	-	-
	10~11	High-Alloyed Steel	70	150	70	170	100	140	90	130	60	100	-	-	-	-
M	12~13	Ferritic & Martensitic	120	200	-	-	-	-	-	-	80	180	-	-	-	-
	14	Austenitic Stainless Steel	130	250	-	-	-	-	-	-	100	200	-	-	-	-
K	15~16	Grey Cast Iron	120	250	120	270	-	-	-	-	-	-	180	350	200	350
	17~18	Nodular Cast Iron	130	220	130	240	-	-	-	-	-	-	120	270	150	300
N	21~30	Non-Ferrous Metals (Al)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	31~37	Superalloys & Titanium	25	45	-	-	-	-	-	-	20	40	-	-	-	-
H	38~41	Hard Materials	40	80	40	100	-	-	50	100	-	-	50	90	-	-

Milling Grades and Chipbreakers

Milling Grades

Milling Grades	P Steel					M Stainless steel				K Cast iron				N Non-ferrous				S Superalloys				
	P05	P15	P25	P35	P45	M05	M15	M25	M35	K05	K15	K25	K35	N05	N15	N25	N35	S05	S15	S25	S35	
PVD	YG602		602				602				602								602			
	YG622		622								622											
	YG712		712																			
	YG713		713																			
	YG603			603				603														603
	YG501										501											
CVD	YG5020									5020												
Uncoated	YG50													50								

<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>YG622</p> <p>P20 - P40</p> <p>K20 - K40</p>	<p>PVD - AlCrN</p>	<p>Optimized Grade for High Alloyed or Prehardened Steel</p> <p>Excellent hot hardness and oxidation resistance at high speed</p>
<p>YG712</p> <p>P10 - P30</p>	<p>PVD - AlTiCrN</p>	<p>General Milling Grade for Steel</p>
<p>YG713</p> <p>P15 - P25</p> <p>H20-H30</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>YG603</p> <p>P35 - P45 M30 - M40</p> <p>S30</p>	<p>PVD - TiAlN</p>	<p>Tough Milling grade for Stainless Steel</p> <ul style="list-style-type: none"> • New coating layer with high toughness and lubrication on ultra fine grain substrate with high toughness. • The toughest substrates provides excellent cutting performance in stainless steel

TURNING

PLANING & GROOVING

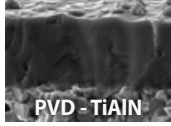
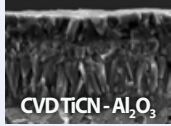
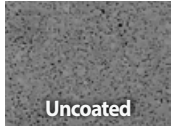
MILLING

DRILLING






THEIR QUALITY INFORMATION

Milling Grades and Chipbreakers

Milling Grades

<p>YG501</p> <p>K05 - K25</p> <p>H05 - H25</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>General Inserts (No Description)</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

Milling - Code System

Insert ISO Code System

TURNING

PARTING & GROOVING

MILLING

DRILLING

THERMAL SPRAY COATING

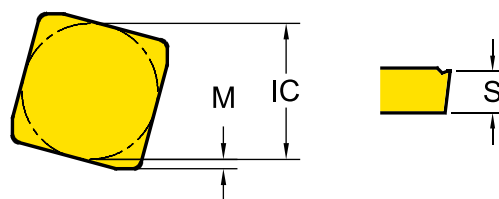


1 - Shape

Symbol	Shape	Diagram
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)	Diagram
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 (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		

5 - Insert Size

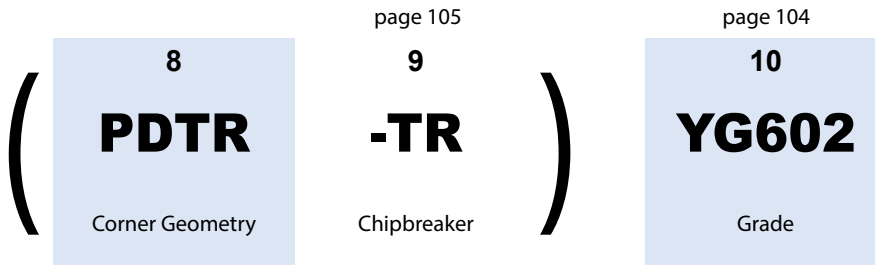
* No Standard for milling insert size

6 - Insert Thickness

* No Standard for milling insert thickness

Milling - Code System

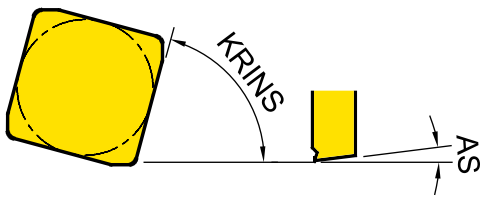
Insert ISO Code System



7 - Corner Radius (RE)

Symbol	Thickness - S (mm)	Symbol	Thickness - S (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. 105 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	Rounded
T	Chamfered
S	Chamfered and Rounded

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