

NPA

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www.taegutec.com



New Product Announcement No. 2016-06



DUETBALL

New ML Chip Former for Lower Cutting Force



M



new

ML



KEY POINT

TaeguTec's new DUETBALL line ML type chip former for the mold and die, aerospace and power generation industries is now available!

The new ML type insert designed with a high positive rake angle generates low cutting resistance for longer tool life.

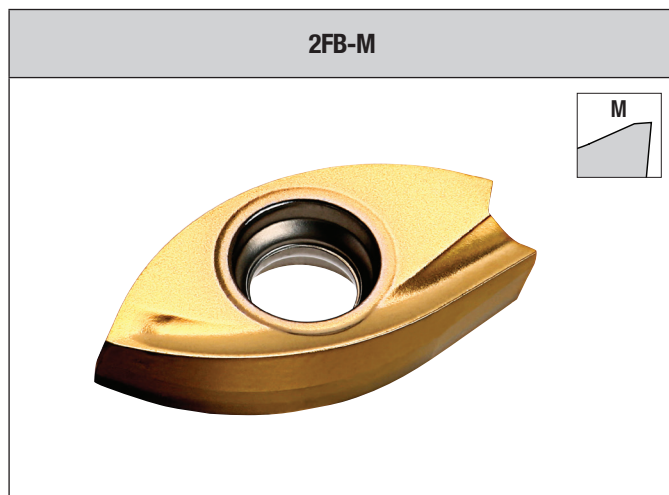
To better serve the market place, the **DUETBALL** insert line now comes in two types; the current M type and the new ML type to suit the widest range of metals (P,K,M & S). The M type is suitable for general purpose machining of steel and cast iron while the new ML type is suitable for more difficult-to-cut materials as well as high temperature alloys and stainless steel.

The ML type insert is available in 16, 20 and 25mm sizes.

Features

- A proper cutting edge design for blade machining
- A high positive rake angle for reduced cutting force
- Adapted to low power consumption machines
- Smooth cutting and minimal vibration with long tool life
- Suitable for high temperature alloys, stainless steel as well as difficult-to-cut materials
- Enables excellent surface finish

DUETBALL insert information



General purpose



Light cutting operations / difficult-to-cut materials



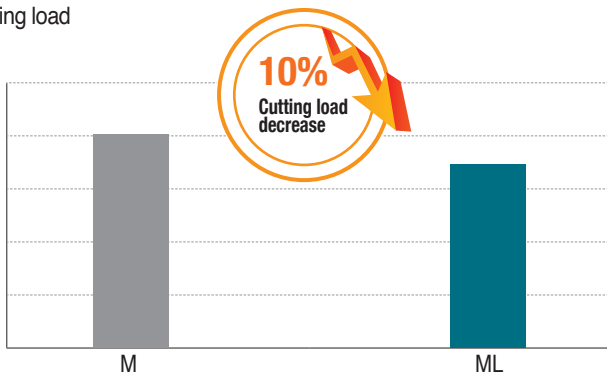
Cutting load comparison test (M vs ML)

2FB 200

Material: Turbine blade material B50A947A4

Cutting conditions: V=250m/min, Fz=0.2mm/tooth, ap=9mm, ae=2.5mm, Dry

Cutting load (%)



Availability

In stock

Price

Available in the GAL system

Sincerely,
TaeguTec



Cho Yeo-myeong
Rotating Product Manager

Sincerely,
TaeguTec



Lee Jae-wook
Milling Product Manager

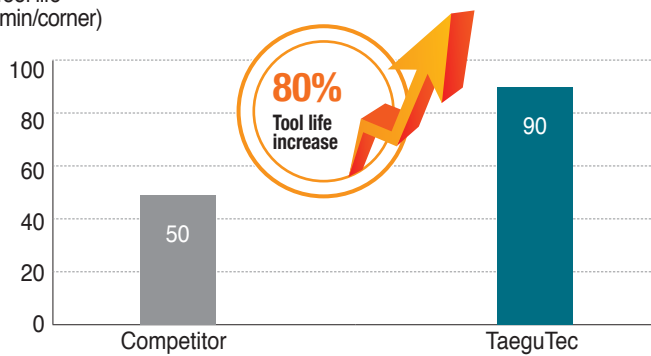
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Case study 1

		Competitor	TaeguTec
Workpiece material		Stainless steel (ST12T)	
Insert		D20 PVD coated	2FB 200-ML TT8080
Cutting speed	V (m/min)	230	230
Feed rate	Fz (mm/tooth)	0.16	0.16
Depth of cut	ap (mm)	5-10	5-10
Tool life (min/corner)		50	90

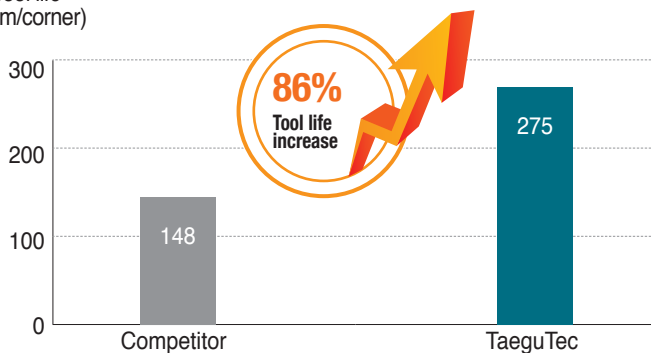
Tool life
(min/corner)



Case study 2

		Competitor	TaeguTec
Workpiece material		Turbine blade material B50A947A4	
Insert		D20 PVD coated	2FB 200-ML TT9080
Cutting speed	V (m/min)	250	250
Feed rate	Fz (mm/tooth)	0.2	0.2
Depth of cut	ap (mm)	9	9
Width of cut	ae (mm)	2.5	2.5
Tool life (m/corner)		148	275

Tool life
(m/corner)

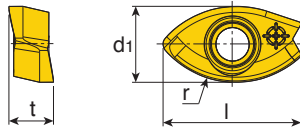


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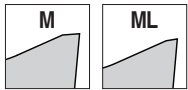
DUETBALL

2FB

Insert



Size	Dimension (mm)					
	l	d ₁	t	ap	r	
160	12.4	6.8	3.7	8.0	8.0	
200	14.9	8.2	4.8	10.0	10.0	
250	18.9	10.2	5.9	12.5	12.5	
300	22.1	11.8	6.9	15.0	15.0	
320	23.9	12.8	7.5	16.0	16.0	



Insert	Designation	Recommended machining conditions		Coated				
		Feed (mm/tooth)	ap (mm)	TT9080	TT8080	TT8020	TT7800	TT2510
	2FB 160-M	0.07-0.30	2.0-6.5	●	●	●	●	●
	200-M	0.08-0.35	3.0-8.0	●	●	●	●	●
	250-M	0.08-0.35	3.5-10.0	●	●	●	●	●
	300-M	0.08-0.40	4.0-12.5	●	●	●	●	●
	320-M	0.08-0.40	4.5-13.0	●	●	●	●	●
new	2FB 160-ML	0.05-0.28	2.0-6.5	●	●	●		
	200-ML	0.07-0.32	3.0-8.0	●	●	●		
	250-ML	0.07-0.32	3.5-10.0	●	●	●		

● : Standard items

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Recommended cutting conditions

Cutting speed: Vc(m/min)

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Coated					
						TT9080	TT7800	TT8080	TT8020	TT2510	
P	Non-alloy steel, < 0.25%C	Annealed	420	125	1	220-370	160-270	170-250	150-210		
		>= 0.25%C Annealed	650	190	2	180-310	140-210	130-220	120-200		
	cast steel, free cutting steel	< 0.55%C Quenched and tempered	850	250	3	115-195	90-160	90-170	70-140		
		>= 0.55%C Annealed	750	220	4	130-210	100-170	100-190	90-150		
	Low alloy steel and cast steel (less than 5% of alloying elements)	Quenched and tempered	1000	300	5	115-175	80-140	70-160	60-130		
			600	200	6	175-265	140-200	150-220	130-170		
		Annealed	930	275	7	130-215	90-160	110-190	70-150		
			1000	300	8	105-185	70-150	80-160	60-110		
	High alloy steel, cast steel and tool steel	Quenched and tempered	1200	350	9	95-160	60-110	70-120	50-100		
			680	200	10	85-155	60-90	70-110	50-80		
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	115-270		90-200	75-170		
		Martensitic	820	240	13	100-230		70-160	60-130		
		Austenitic	600	180	14	120-275		100-210	80-180		
K	Gray cast iron (GG)	Ferritic		160	15						
		Pearlitic		250	16						
	Cast iron nodular (GGG)	Ferritic		180	17						
		Pearlitic		260	18						
	Malleable cast iron	Ferritic		130	19						
		Pearlitic		230	20						
N	Aluminum - wrought alloy	Not cureable		60	21						
		Cured		100	22						
	Aluminum- <=12% Si cast, alloyed	Not cureable		75	23						
		Cured		90	24						
	>12% Si Copper alloys	>1% Pb Free cutting		130	25						
		Brass		90	27						
	Non-metallic	Electrolitic copper		100	28						
		Duroplastics, fiber plastics			29						
	S	High temp. alloys	Fe based	Annealed		200	31	40-80		30-65	
				Cured		280	32	30-60		20-45	
Ni or Co based			Annealed		250	33	35-70		25-50		
			Cured		350	34	30-60		20-40		
Titanium, Ti alloys		Cast			320	35	35-65		20-45		
				Rm 400		36	90-130		60-100		
		Alpha+beta alloys cured	Rm 1050		37	35-70		25-55			
H	Hardened steel	Hardened		55HRC	38	40-75			70-180		
		Hardened		60HRC	39	30-55			50-130		
	Chilled cast iron	Cast		400	40						
	Cast iron nodular	Hardened		55HRC	41						

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel