
FMAX

FEED MAXIMUM (FMAX)

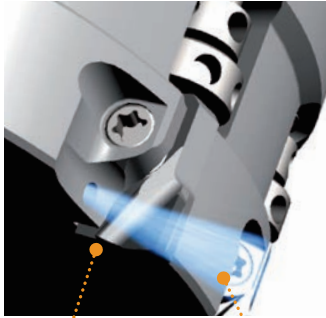
MILLING CUTTER FOR ULTRA EFFICIENT,
HIGH ACCURACY FINISHING



HIGH FEED MILLING
CUTTER FOR
FINISHING

FMAX

HIGH FEED MILLING CUTTER FOR FINISHING

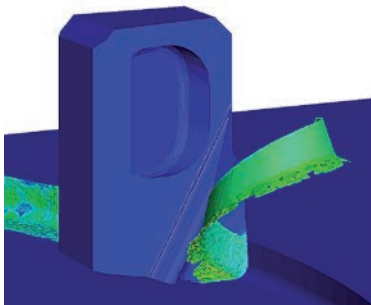


Body protector

Internal coolant

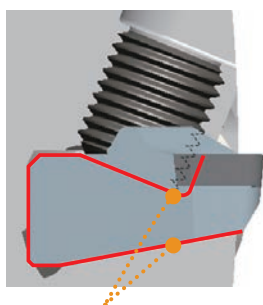
ULTRA HIGH EFFICIENCY MACHINING

The ultra fine pitch design is ideal for high efficiency machining ($F \geq 20\text{m/min}$). Internal coolant and a special chip breaker wall (body protector) provides ideal chip discharge performance.



*Graphical representation

The body protector on the rake face forms chip shapes ideal for disposal and disperses them away from the body. Internal coolant also aids this process. The body is compatible with all through centre coolant arbors.

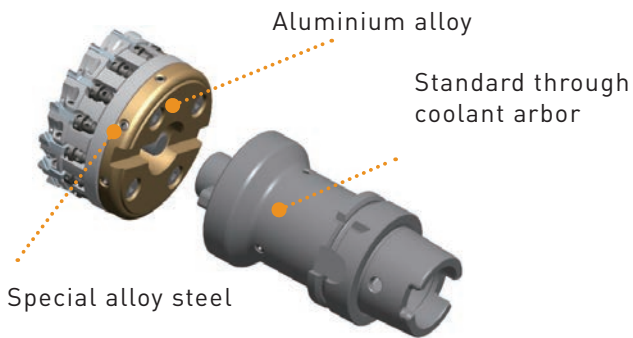


Dovetail Clamp

Angled face

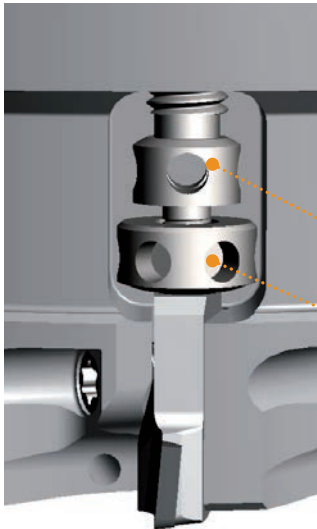
DESIGNED FOR HIGH SPEEDS

Anti-fly dovetail clamping mechanism.



LIGHT WEIGHT, HIGH RIGIDITY BODY

A special alloy steel and aluminium body combine to provide rigidity and light weight.



HIGH PRECISION, EASY SETTING

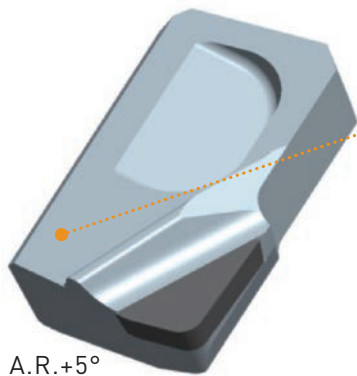
A combination of fine and ultra-fine pitch threads provides precise run-out adjustment ($\leq 5 \mu$).

Fine pitch adjustment screw

Ultra-fine micro adjustment nut

ECONOMY, MULTI-USE

A re-grinding allowance of up to 0.6 mm is possible on both the peripheral and bottom cutting edges.



New PCD grade for machining aluminium alloy

BENEFITS

- Light Weight, High Rigidity Body
- Designed for high speeds
- New PCD grade for machining aluminium alloy
- Economy, Multi-use

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HIGH FEED MILLING CUTTER FOR FINISHING

FACE MILLING



Finishing



Fig.1
ø80

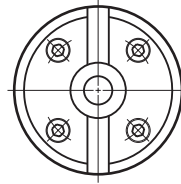
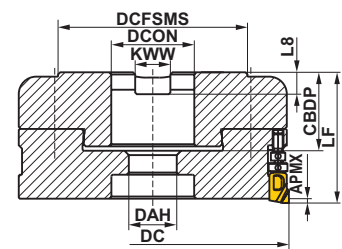
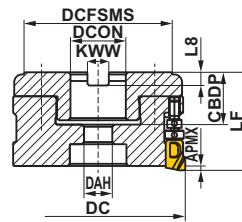
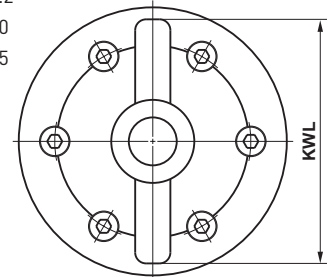


Fig.2
ø100
ø125



KAPR :90° GAMP :+5°
CH :0° GAMF :0°

ARBOR TYPE

Type	Geometry	Stock	Teeth Dimensions (mm)									Tool Weight (kg)	APMX (mm)	RMPX (min-1)	Type (Fig.)	
			DC	LF	DCON	CBDP	DAH	DCFSMS	KWW	L8	KWL					
Fine Pitch	FMAX-080B14R	★	14	80	45	27	24	13	68	9.5	6	—	1.09	3	24500	1
	FMAX-100B18R	★	18	100	50	32	32	17	79	12.7	8	45	1.81	3	22000	2
	FMAX-125B24R	★	24	125	60	40	36	22	88	15.9	10	56	3.27	3	19600	2

* 2mm or less is the recommended maximum depth of cut for ultra high efficiency machining.


SPARE PARTS

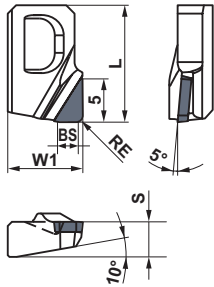
Tool Holder Number	Insert Clamp Screw	Micro Adjustment Nut	Large Adjustment Screw	Balance Adjustment Screw	Cutter Clamp Bolt	Wrench	Adjustment Pin
FMAX-080B14R	TSS04505S	KSN2	KSS2	HSS05005G	HSCX12030H	TKY10T	RKY25S
FMAX-100B18R				HSS06006G	HSCX16035H		
FMAX-125B24R				HSS08008G	HSCX20035H		

* Clamp Torque TSS04505S=3.5 Nm

* Please refer to the manual included for instructions how to seat the insert and adjust the run out.

INSERTS

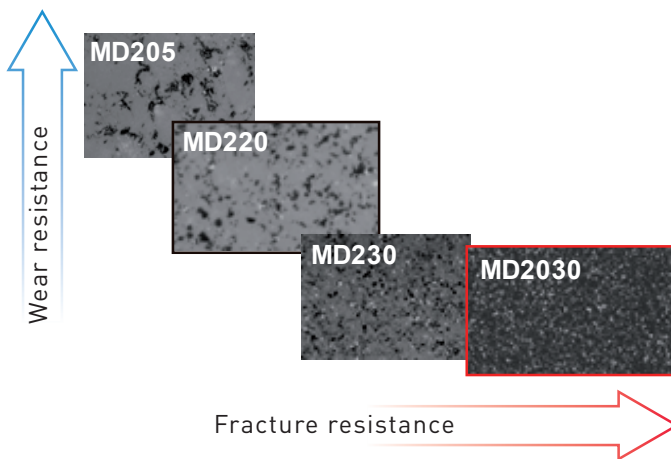
Shape	Order Number	Grade	Stock	Dimensions (mm)				
				L	W1	S	BS	RE
	GOER1408PXR2	MD2030	●	14.0	9.0	4.2	2.0	0.8



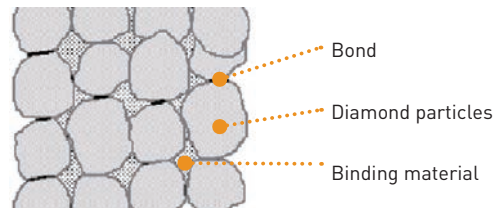
FEATURES OF NEW PCD GRADE MD2030

Diamond sintered grade containing ultra microparticle diamond

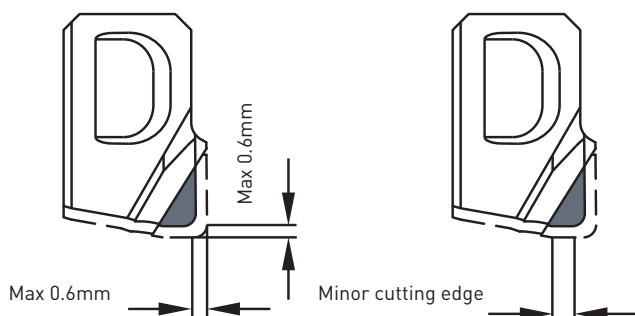
- Optimized for milling
- Improved fracture resistance during interrupted cutting.
- Offers a highly stable cutting edge that prevents burrs and gives an excellent surface finish.



BOND OF DIAMOND PARTICLES



Diamond particles provide a highly stable cutting edge because of the strong bonding.



Remanufacturing

- The maximum material to be re-ground is 0.6 mm.
 - Use similar inserts after regrinding to maintain balance.
 - Problems may occur if the cutter isn't balanced correctly.
 - After re-grinding, the minor edge will reduce in size and may affect surface finishes.
 - Check the diameter offset after fitting re-ground inserts.
- * Please contact us about the optimum regrinding conditions.

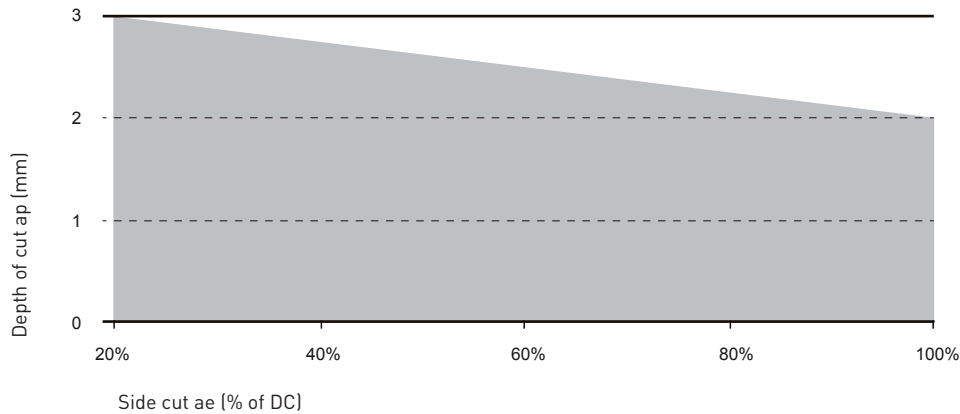
FMAX

RECOMMENDED CUTTING CONDITIONS

Work Material	Characteristics	Grade	Cutting Speed vc (m/min)	Width of Cut ae (mm)	Depth of Cut ap (mm)	Feed (mm/tooth)
N Aluminium Alloy	Si ≤12.5%	MD2030	2500 (2000—3000)	≤0.2 DC*	≤2 (0.5—3)	0.08 (0.05—0.2)
				≤0.5 DC*	≤2 (0.5—2.5)	
				≤0.8 DC*	≤2 (0.5—2.0)	
	Si >12.5%	MD2030	600 (400—800)	≤0.2 DC*	≤2 (0.5—3)	0.08 (0.05—0.2)
				≤0.5 DC*	≤2 (0.5—2.5)	
				≤0.8 DC*	≤2 (0.5—2.0)	

* Please adjust the depth of cut in accordance with the width of cut.

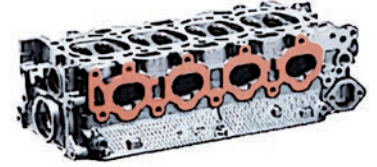
EFFECTIVE CHIP DISPOSAL RANGE



APPLICATION EXAMPLE

Finishing of cylinder head exhaust side with high feed.

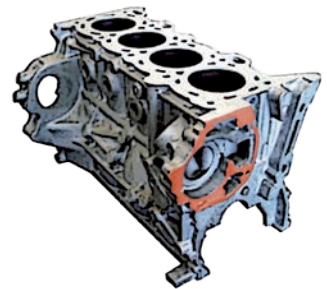
Cutter Body	FMAX-100B18R
Insert (Grade)	GOER1408PXFR2(MD2030)
Workpiece	Aluminium Alloy
Revolution (min ⁻¹)	8000
Cutting Speed (m/min)	2513
Feed (mm/tooth)	0.2
Table Feed (mm/min)	28800
Depth of Cut (mm)	1.5
Width of Cut (mm)	50
Cutting mode	Wet
Machine	Horizontal type
Results	More than double table feed provided increased efficiency. FMAX provided improved stability and achieved good surface finishes.



APPLICATION EXAMPLE

Finishing of engine block side flansch.

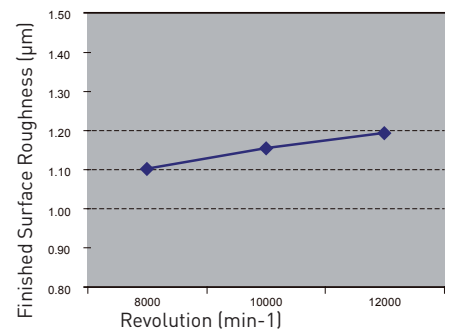
Cutter Body	FMAX-080B14R
Insert (Grade)	GOER1408PXFR2 (MD2030)
Workpiece	Aluminium Alloy
Revolution (min ⁻¹)	8000
Cutting Speed (m/min)	2011
Feed (mm/tooth)	0.13
Table Feed (mm/min)	14.560
Depth of Cut (mm)	2.5
Width of Cut (mm)	20
Cutting mode	Wet
Machine	Horizontal type
Results	More than double table feed provided increased efficiency. FMAX provided improved stability and achieved good surface finishes.



APPLICATION EXAMPLE

Finished Surface Roughness (RZ) chart in relation to revolution.

Cutter Body	FMAX-125B24R
Insert (Grade)	GOER1408PXFR2 (MD2030)
Workpiece	ADC12 cylinder head
Revolution (min ⁻¹)	8000 – 12000 min ⁻¹
Cutting Speed (m/min)	3140 – 4710
Feed (mm/tooth)	0.08
Table Feed (mm/min)	15360 – 23040
Depth of cut (mm)	2.0
Width of Cut (mm)	68 x 3 passes
Cutting mode	Internal through coolant 4MPa
Machine	Horizontal type
Results	The FMAX cutter offered a smooth finishing operation with predictable wear and no burr. Even at high revolution the FMAX cutter achieves a high quality surface roughness.



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