

Double-sided positive insert for semi-finishing to finishing





ACCELERATED MACHINING

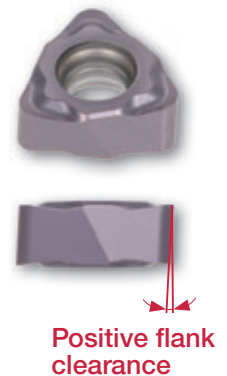
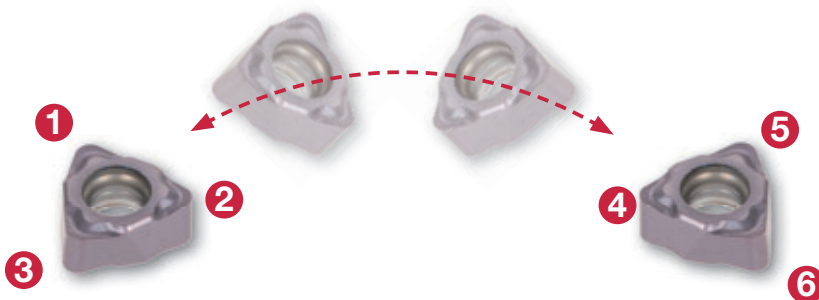


DoMini-Mill features the advantage of an economical **6-cornered double-sided insert with positive cutting edges** for profile milling of die & mold.

Multifunctional endmills for semi-finish or finishing operation with profile milling or plunging

Double sided with positive edge - innovative geometry

- The unique twisted peripheral shape provides positive flank clearance for double sided insert.
- Positive insert positioning and sharper cutting edge improves cutting action and surface finish.
- Highly economical insert with 6 cutting edges.

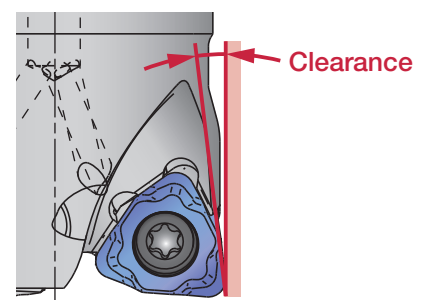


High stability

- Dove-tail clamping system maintains the rigidity for accurate 3 dimensional machining.
 - Improves reliability in plunging operations.
- Back clearance angle with wall surface avoids chip packing allowing smooth cutting even in machining of square wall.
- Optimized geometry of cutting edge offers resistance to chipping in machining of steel and hardened material.

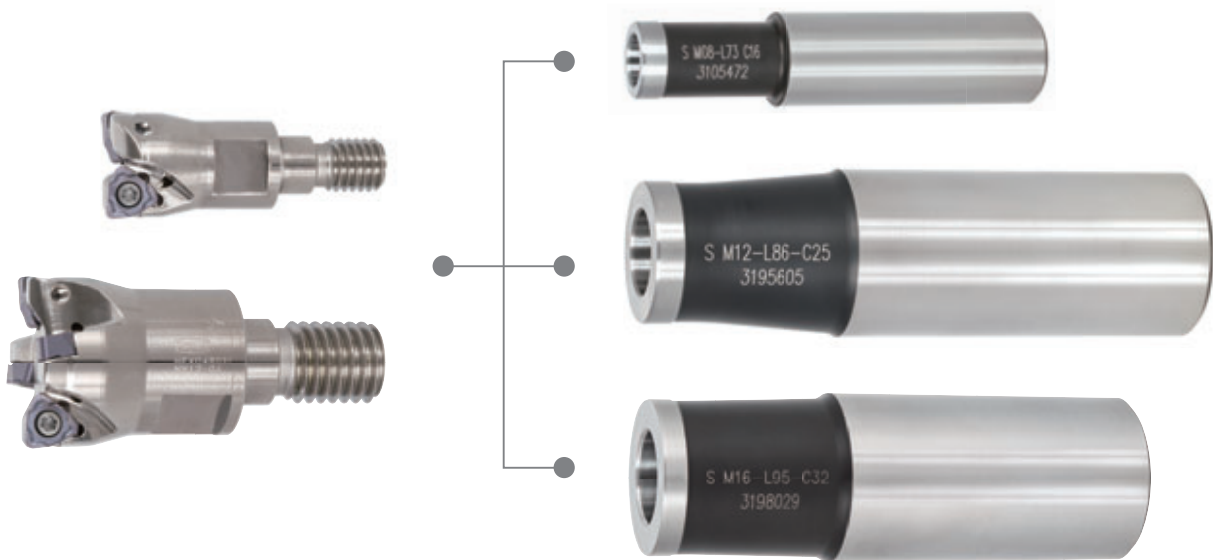


Dove-tail clamping system



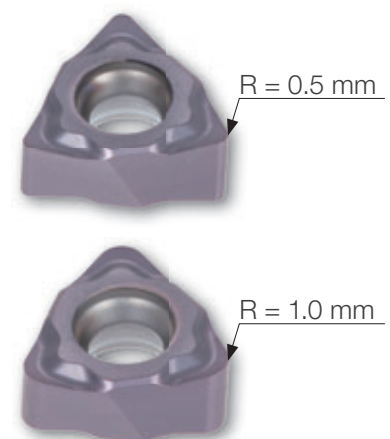
High versatility

- Modular style endmills with metric and TungMeister thread allows flexibility to be used with various type of shanks or holder in TungHold and TungMeister series.
- Combinations of shank lengths and shank material guarantees versatility in machining operations.



Inserts

- H-class insert with high accuracy provides minimized runout.
- 2 sizes of corner radii available for various type of machining.
 - R = 0.5 mm: Suitable for general purpose with low depth and width of cut
 - R = 1.0 mm: Ideal for hardened steel machining due to improved corner strength
- AH110 grade with PremiumGTec and high wear resistance is ideal for hardened material machining.



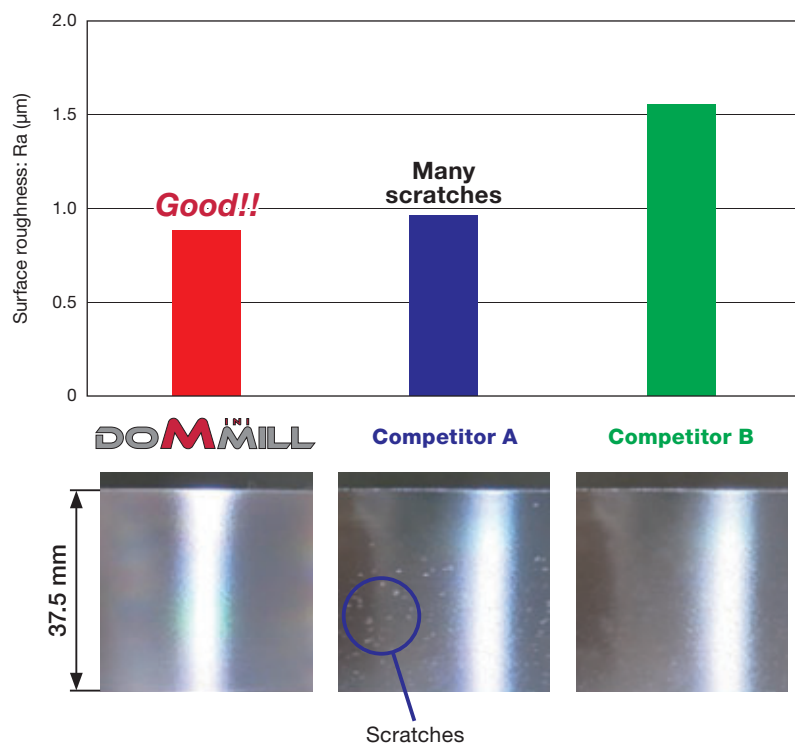
WXHU04-MJ



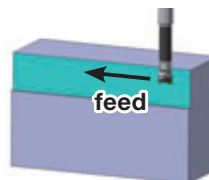
CUTTING PERFORMANCE

Surface finish

P Carbon steel

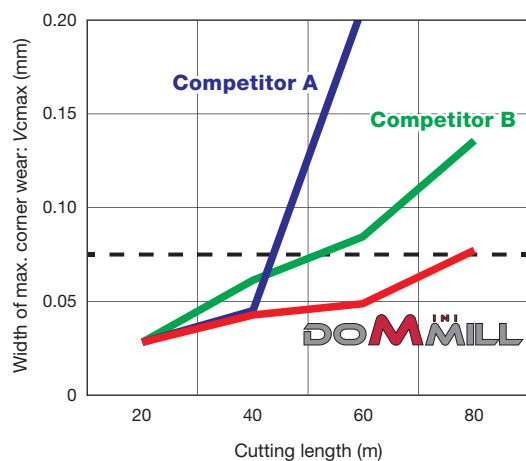


Cutter : HFWX04M016M08R02
($\phi D_c = 16 \text{ mm}$, $z = 2$)
Insert : WXHU040305R-MJ
Workpiece material : SCM440 / 42CrMo4 (302HB)
Cutting speed : $V_c = 300 \text{ m/min}$
Feed per tooth : $f_z = 0.15 \text{ mm/t}$
Depth of cut : $a_p = 0.15 \text{ mm}$
Width of cut : $a_e = 0.5 \text{ mm}$

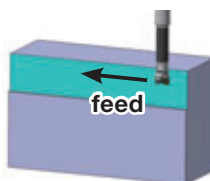


Tool life

H Hardened steel



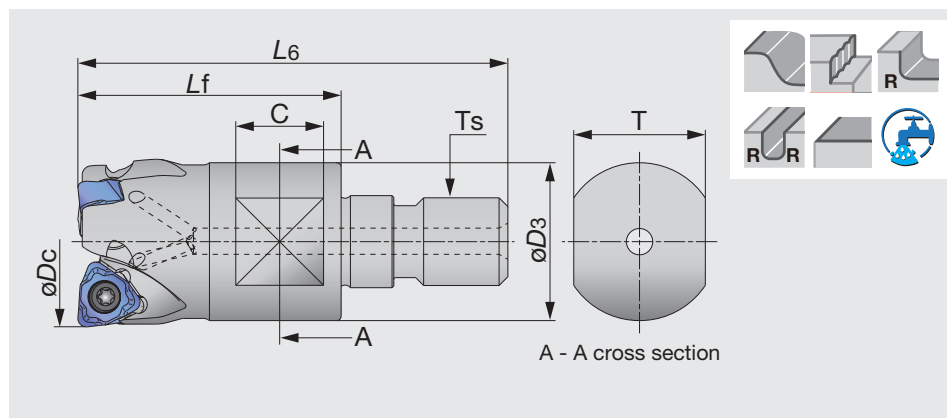
Cutter : HFWX04M016M08R02 ($\phi D_c = 16 \text{ mm}$, $z = 2$)
Insert : WXHU040305R-MJ
Workpiece material : SKD11 / X153CrMoV12 (58.5HRC)
Cutting speed : $V_c = 100 \text{ m/min}$
Feed per tooth : $f_z = 0.15 \text{ mm/t}$
Depth of cut : $a_p = 0.15 \text{ mm}$
Width of cut : $a_e = 0.2 \text{ mm}$



Small-radius cutter for finishing operation

MODULAR HEAD - METRIC THREAD

DoMini-Mill HFWX04***M



Designation	ϕD_c	z	L6	Lf	C	T	D3	Ts	Kg	Insert
HFWX04M016M08R02	16.00	2	42.0	25.0	8.0	10.0	12.8	M8	0.03	WXHU04**
HFWX04M020M10R03	20.00	3	49.0	30.0	10.0	15.0	17.8	M10	0.05	WXHU04**
HFWX04M025M12R04	25.00	4	52.0	30.0	10.0	17.0	20.8	M12	0.09	WXHU04**

For details of metric shank, please refer to TungFlex series in TR413 TungHold

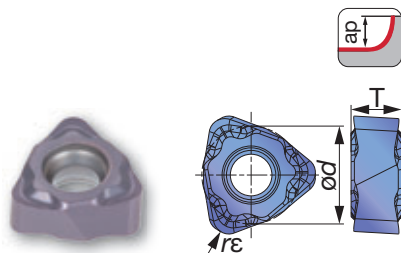
SPARE PARTS



Clamping screw	Wrench
SR34-514	T-7F

INSERT

WXHU-MJ



Designation	Max. ap	IC dia	T	rε	AH110	
WXHU040305R-MJ	0.5	6.35	3.18	0.5	●	●
WXHU040310R-MJ	1	6.35	3.18	1	●	●
					P	H

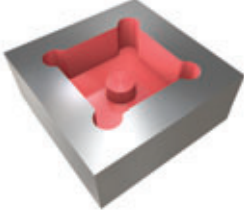
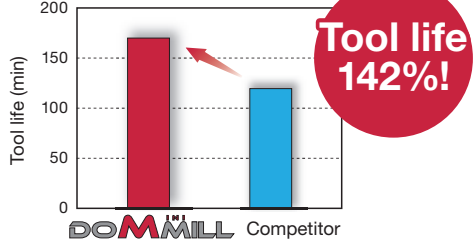
* For plunging, depth up to 2 mm is possible.

● First choice

STANDARD CUTTING CONDITIONS

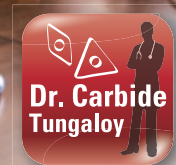
ISO	Workpiece materials	Hardness (HB)	Grades	Cutting speed Vc (m/min)	Feed per tooth fz (mm/t)
P	High carbon steel (S45C / C45, S55C / C55, etc.)	200 - 300	AH110	100 - 300	0.1 - 0.3
	Alloy steel (SCM440 / 42CrMo4, SCr145, etc.)	150 - 300	AH110	100 - 300	0.1 - 0.3
	Prehardened steel (NAK80, PX5, etc.)	-	AH110	100 - 300	0.05 - 0.3
H	Hardened steel	(SKD61 / X40CrMoV5-1, etc.)	AH110	80 - 130	0.1 - 0.3
		(SKD11 / X153CrMoV12, etc.)	AH110	50 - 100	0.05 - 0.15

PRACTICAL EXAMPLES

Workpiece type		Mold	Mold
Cutter		HFWX04M020M10R03 (ø20 mm, z = 3)	HFWX04M025M12R04 (ø25 mm, z = 4)
Insert		WXHU040310R-MJ	WXHU040310R-MJ
Grade		AH110	AH110
Workpiece material		2738 (28 – 32 HRC) 	DIN 1.2344 (50 – 52HRC) 
Cutting conditions	Cutting speed : V_c (m/min)	195	274
	Feed per tooth: f_z (mm/t)	0.16	0.14
	Feed speed : V_f (mm/min)	1500	2000
	Depth of cut : a_p (mm)	0.25	0.11
	Width of cut : a_e (mm)	0.35	-
	Machining	Profiling	Profiling
	Coolant	Wet (internal, 40bar)	Dry
	Machine	Vertical M/C	Vertical M/C
Results		 DoMini-Mill increased tool life by 42% because of lower cutting force compared to competitor's tool and grade with high wear resistance. 5 hours machining! New PremiumGTec grade with improved wear resistance achieved long tool life.	

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