

**DORMER  PRAMET**

**ALUMINIUM  
WHEEL MACHINING**

**2019**



 **PRAMET**



Aluminium wheels are now standard on most cars as they offer both cosmetic and performance advantages. Interest in these type of wheels is growing, leading to an increase in consumption of cutting tools. This leaflet highlights which inserts we have available for aluminium wheel machining.

## FEATURES & BENEFITS

- Sharp and stable insert geometry (high quality machined surface)
- Polished insert face decreases cutting temperature
- Highly wear resistant substrate and the best choice for extremely high cutting speeds

## WHY CHOOSE DORMER PRAMET?

The technological process of wheel production is similar between numerous production facilities and countries. Also, cutting tool manufacturers apply the same inserts shapes and nose radiuses for the required applications.

Indexable inserts can be easily tested and applied to existing end users' standard ISO holders or ISCAR holders type GIDA (particularly for S-LCMF0830MO-AL1:H05). This can be done without any additional end user investment.

Aluminium wheel production requires a large consumption of inserts (thousands of pieces). Dormer Pramet can offer additional support via custom designed holders according to end-user requirements.



## GRADE

The most used grade is the uncoated H05, which is primarily for machining non-ferrous metal alloys, as well as machining group K and H materials.

Grade Identification	Area of Application	Feed	Cutting speed	Resistance to adverse Working Conditions	Substrate	Coating	Colour	Coolant benefit	General	Parting off	Threading	Heavy roughing
<b>H05</b>	N10 - N30				Submicron H			++	✓			

## RECOMMENDED CUTTING CONDITIONS

In the tables below we outline our recommended and safe cutting conditions. This is vitally important, especially when customers temporarily use much higher cutting speeds for face machining (mirror and internal of the contact face) with fixed RPM of the workpiece.

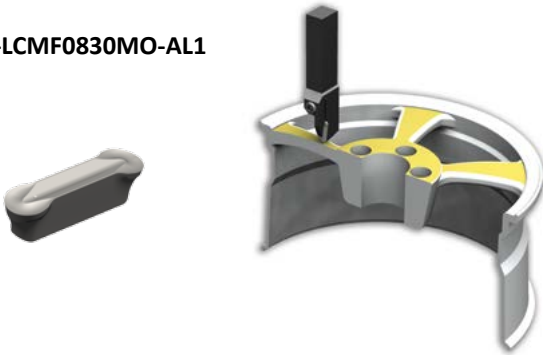
N					
		$f$	$a_p$	durability	<b>H05</b>
	I	0,05	0,5	15	560
	II	0,08	0,5	15	500
	III	0,10	0,5	15	470
	I	0,10	1,5	15	410
	II	0,15	1,5	15	405
	III	0,20	1,5	15	410
	I	0,20	2,5	15	380
	II	0,30	2,5	15	345
	III	0,40	2,5	15	345
	I	0,40	5,0	15	295
	II	0,60	5,0	15	265
	III	0,80	5,0	15	250

$V_{15}$  [m/min]

CORRECTION $V_c$					
Subgroup	N1	N2	N3	N4	
$k_{vHB}$	Alloy type			$k_{vx}$	
	Electrotechnical aluminium			2,00	N1
	Al alloys formed, unhardened HB 60			1,50	
	Al alloys formed, hardened HB100			<b>1,00</b>	
	Al alloys cast, unhardened HB75			0,90	N2
	Al alloys cast, hardened HB90			0,65	
	Al alloys cast, unhardened HB 130 >12% Si			1,0 PKD / 0,20	
	Highly machinable alloys (>1%Pb)			0,90	N3
	Brass and lead bronze (<1%Pb)			0,75	
	Other brass HB <90			0,60	
	Other brass HB >90			0,54	
	Bronze electrolytic Cu			0,40	N4
	Hard and very hard bronze			0,6 PKD / 0,20	
	$k_{VT(GM)}$		$k_{VT}$		$k_{VT}$
10		1,10	30	0,84	
15		1,00	45	0,76	
20		0,93	60	0,71	
$k_{vx}$	Skin of forging and casting			0,70 - 0,80	
	Internal turning			0,75 - 0,85	
	Interrupted cut			0,80 - 0,90	
	Stable machine conditions			1,05 - 1,20	
	Unstable machine conditions			0,85 - 0,95	
$k_{vi}$	Insert shape			$k_{vBD}$	
	S..., C..., W...			1,00	
	T..., D..., K...			0,95	
	V..., L... (parting and grooving)			0,88	
	R..., L... (heavy roughing)			1,10	

## MIRROR MACHINING

S-LCMF0830MO-AL1



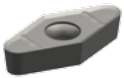
## EXTERNAL MACHINING

S-LCMF0830MO-AL1



## INTERNAL MACHINING

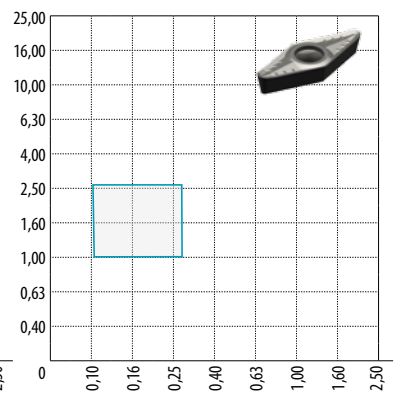
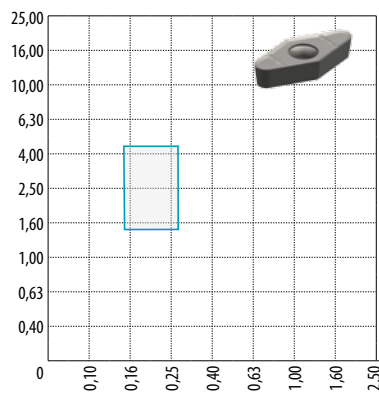
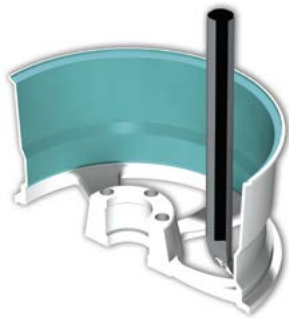
S-VCGT220530F-AL



S-VPGT220520F-AL

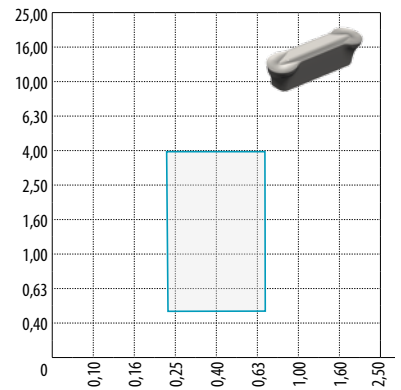


S-LCMF0830MO-AL1



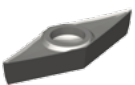
## INTERNAL MACHINING OF THE CONTACT FACE

S-LCMF0830MO-AL1

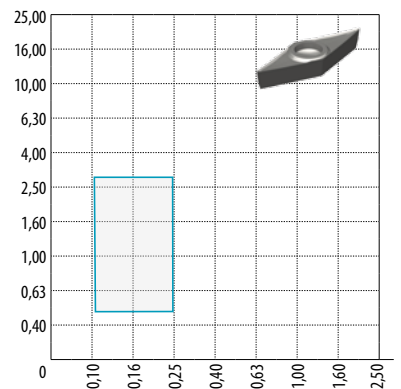
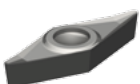


## HUB MACHINING

S-VCGT160404F-AL1



S-VCGT160408F-AL1





# INSERT APPLICATIONS

<p><b>S-LCMF0830MO-AL1 :H05</b></p>		 <p>Mirror machining</p>  <p>Internal machining</p>	 <p>External machining</p>  <p>Internal machining of the contact face</p>
<p><b>S-VCGT220530F-AL :H05</b></p>		<p>Internal machining</p>	
<p><b>S-VPGT220520F-AL :H05</b></p>		<p>Internal machining</p>	
<p><b>S-VCGT160404F-AL1 :H05</b></p>		<p>Hub machining</p>	
<p><b>S-VCGT160408F-AL1 :H05</b></p>		<p>Hub machining</p>	



# SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being. **Simply Reliable.**

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