



AM Chip Breaker

Positive

Positive turning insert for Aluminum cutting (medium cutting)

 Applying surface finish and toughness balanced cutting edge for general use (light interrupted cutting ~ continuous cutting)

• Stable machining and high productivity with good chip evacuation even in high feed speed cutting







Positive turning insert for Aluminum cutting (medium cutting)

AM Chip Breaker (Positive)

Aluminum is a type of light metal with high machinability but it is necessary to machine it with care because the material is vulnerable to welding and scratches. The usage of it keeps increasing with rising demands on light weight parts and enhanced accessibility of recycling.

KORLOY launches AM chip breaker minimizing welding, better chip evacuation and enhanced surface finish in Aluminum light interrupted cutting to continuous cutting.

The AM chip breaker with 2 step rake angle for protecting cutting edge increases cutting edge strength and surface finish. Its bridge structure for preventing chip jam makes good chip evacuation and surface finish.

AM chip breaker with good chip evacuation and enhanced surface finish in medium cutting is the best solution increasing productivity and efficiency in Aluminum part machining and non-ferrous metal cutting.

>> Vast cutting range

- Wide cutting range from light interrupted cutting to continuous cutting

>> Good surface finish

- Enhanced chip evacuation by bridge design to prevent chip jam

>> Better welding resistance

- Sharp cutting edge and mirror-like finishing

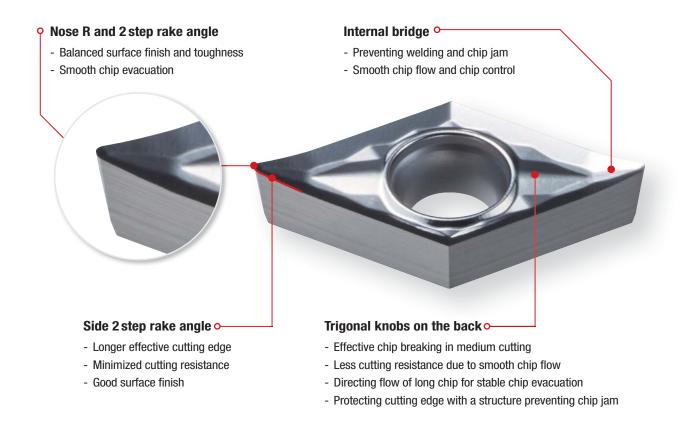
>> Stable tool life

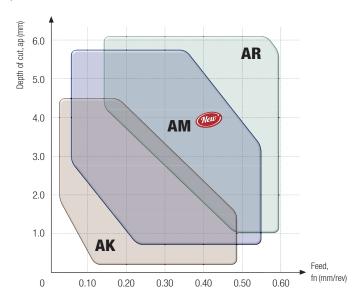
- Improved cutting edge strength and good surface finish with 2 step rake angle



AM chip breaker (for medium Aluminum cutting)

- · Preventing welding and chip jam with internal bridge structure enhancing smooth chip flow
- Balanced surface finish and toughness from nose R and 2 step side rake angle
- Preventing minor cutting edge fracture with divided bridge structure on the top surface bottom part blocks chips over minor cutting edge





Cutting range	Chip breaker	ap(mm)	fn (mm/rev)	
Roughing	AR	0.50 ~ 6.00	0.05 ~ 0.60	
Medium to finishing ~ Medium to roughing	AM New	0.30 ~ 5.50	0.04 ~ 0.55	
Finishing ~ medium cutting	AK	0.10~5.00	0.03 ~ 0.50	

- · AK: 1st recommended in Aluminum and non-ferrous metal cutting
- · AM: recommended in medium cutting and light interrupted cutting
- · AM: 1st recommended in Aluminum wheel machining
- AR: recommended when high toughness is required in heavily interrupted cutting

Workpiece							Wear resistance • Toughness		Medium to finishing Medium to roughing			
ISO	Workpiece materials			AISI	Specific cutting force (N/mm²)	hardness	High speed and continuous cutting	Low speed and heavy interrupted cutting		terrupted ting	Continuous cutting	
			ISO				Grade		Chip b		reaker	
							H01 H05		AM		AK	
							(m/i		fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)
						60	240	225	0.55		0.50	0.1~5.0
		Non - aging	AlMg1SiCu	6061	400		1980	1800	0.25		0.20	
	Aluminum forged						2470	2250	0.04		0.03	
	alloy			7075	500		240	225	0.55	-	0.50	
	,	Aged	AlZn5.5MgCu			70	1980	1800	0.25		0.20	
							2470	2250	0.04		0.03	
		Non - aging	Al-8SiCu3Fe		600		240	225	0.55		0.50	
				A380.0		75	1980	1800	0.25		0.20	
	Aluminum						2470	2250	0.04		0.03	
	cast alloy	Aged	Al-Cu4NI2Mg2				240	225	0.55	25 14 15 15 14 15 15 14 15 15 14 15 15 14	0.50	
				242.0	700	90	1980	1800	0.25		0.20	
							2470	2250	0.04		0.03	
		Free cutting alloy (1% ≥ Pb)	CuZn39Pb0.5	C36500	550	110	70	65	0.55		0.50	
N							550	500	0.25		0.20	
							690	630	0.04		0.03	
	0	Brass	CuZn36Pb3	CDA360	550	90	70	65	0.55		0.50	
	Copper alloy						550	500	0.25		0.20	
							690	630	0.04		0.03	
		Electrolytic copper	-			100	45	40	0.55		0.50	
				-	1350		330	300	0.25		0.20	
							400	370	0.04		0.03	
	Non- ferrous	Duroplastic, reinforced carbon fiber	-	-	-		-	-	0.55		0.50	
						-	-	-	0.25		0.20	
							-	-	0.04		0.03	
		Hard rubber	-	-	-	-	-	-	0.55		0.50	
							-	-	0.25		0.20	
							-	-	0.04		0.03	

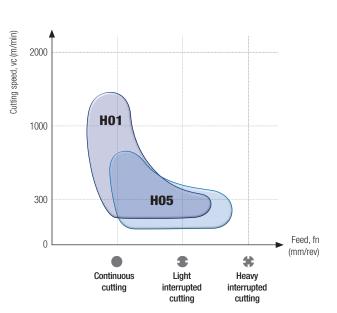
[•] Please refer to the page 7 for detailed depth of cut of chip breakers

H01

- Good wear resistance with ultra-fine substrate
- Enhanced welding resistance by special surface treatment technology

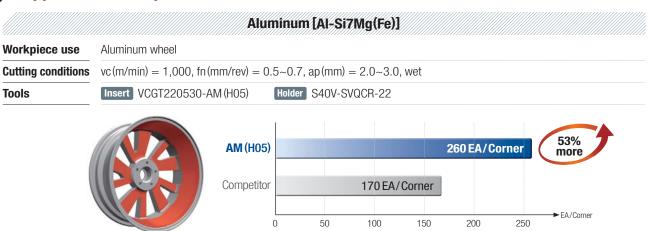
H05

- $1^{\rm st}$ recommended grade in various cutting conditions including non-ferrous metal cutting
- Enhanced welding resistance by special surface treatment technology

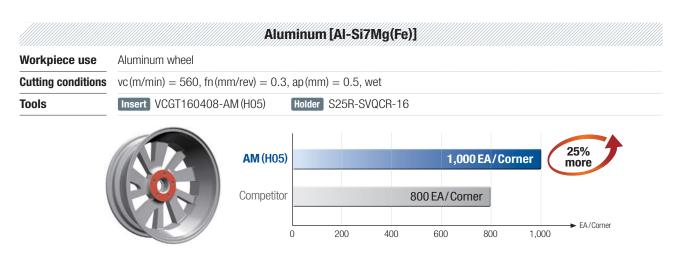


✓ Performance evaluation

Welding and wear resistance Workpiece Aluminum (AIZn5.5MgCu) vc(m/min) = 500, fn(mm/t) = 0.25, ap(mm) = 0.5, wet **Cutting conditions** Insert CCGT09T304-AM (H05) Holder SCLCR2525-M09 **Tools** Total material amount (cm³ 25,000 tool life 20,000 15,000 10,000 [AM] [Competitor B] [Competitor A] 5,000 - Sharp cutting edge obtained good surface finish without any welding and chipping on the cutting edge [AM] [Competitor A] [Competitor B] - Preventing overflowing chips with divided bridge structure

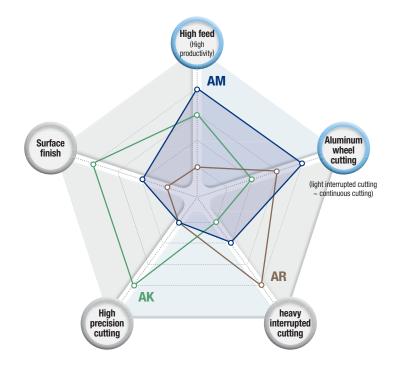


- Finishing cutting with good surface finish by stable tool life and chip evacuation in Aluminum medium roughing and heavy interrupted cutting



- Stable tool life and chip evacuation in Aluminum wheel journal part finishing

™ Tool selection guide



AR

- For heavy interrupted cutting
- High toughness designed applying flat corner cutting edge





• Wide cutting range (light interrupted cutting ~ continuous cutting)



- · Good chip evacuation with internal bridge design (high feed cutting)
- Balanced toughness and surface finish from 2 step side rake angle

AK

• 1st recommended in Aluminum and non-ferrous metal cutting



- Good surface finish and minimized cutting resistance by applying high rake angle
- · High precision cutting

Cutting range	Chip breaker	High feed (High productivity)	Aluminum wheel cutting (light interrupted cutting ~ continuous cutting)	heavy interrupted cutting	High precision cutting	Surface finish (Good surface roughness)	
Roughing	AR	*	***	***	*	*	
Medium to finishing ~ Medium to roughing	AM New	****	****	**	*	**	
Finishing ~ medium cutting	AK	***	**	*	****	****	

✓ Stock items

			Uncoated Dimensions (mm)					(mm)		Cutting condition		
Picture Designatio		signation	H01	H05	L	IC	s	RE	D1	fn (mm/rev)	ap (mm)	Geometries
	CCGT	09T302-AM		•	9.672	9.525	3.97	0.2	4.4	0.03~0.25	0.05~3.50	
		09T304-AM		•	9.672	9.525	3.97	0.4	4.4	0.03~0.35	0.10~5.20	RE
		09T308-AM		•	9.672	9.525	3.97	0.8	4.4	0.03~0.55	0.10~5.50	80 L S
	DCGT	11T302-AM		•	11.628	9.525	3.97	0.2	4.4	0.03~0.25	0.05~3.50	
		11T304-AM		•	11.628	9.525	3.97	0.4	4.4	0.03~0.35	0.10~5.20	RE
		11T308-AM		•	11.628	9.525	3.97	0.8	4.4	0.03~0.55	0.10~5.50	10 01
												55°
	VCGT	160402-AM		•	16.606	9.525	4.76	0.2	4.4	0.03~0.25	0.05~3.50	
		160404-AM		•	16.606	9.525	4.76	0.4	4.4	0.03~0.35	0.10~5.20	RE
		160408-AM		•	16.606	9.525	4.76	0.8	4.4	0.03~0.55	0.10~5.50	35°
	VCGT	220520-AM		•	22.142	12.7	5.56	20	5.6	0.12~1.00	1.20~7.00	
		220530-AM		•	22.142	12.7	5.56	30	5.6	0.15~1.00	1.20~7.50	35° RE

ullet : Stock item

For the safe metalcutting

- Use safety supplies such as protective gloves to prevent possible injury while touching the edge of tools.
- Use safety glasess or safety cover to hedge possible dangers. Inappropriate usage or excessive cutting condition may lead tool's breakage or even the fragment's scattering.
- Clamp the workpiece tightly enough to prevent its movement while its machining.
- Properly manage the tool change phase because the inordinately used tool can be easily broken under the excessive cutting load or severe wear, and it may threat the operator's safety.
- Use safety cover because chips evacuated during cutting are hot and sharp and may cause burns and cuts. To remove chips safely, stop machining, put on protective gloves, and use a hook or other tools.
- Prepare for fire prevention measures as the use of the non-water soluble cutting oil may cause fire.
- Use safety cover and other safety supplies because the spare parts or the inserts can be pulled out due to centrifugal force while high speed machining.



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