

CARBIDE END MILLS FOR ALUMINIUM ALLOY

The best endmill for
aluminium alloy
processing makes its
appearance.

C-2MA
C-2LA

- Optimal design for good chip disposability, high efficient processing is made possible.
- The excellent cutting surface design produces high efficient processing and reduces burr formation.
- Adopting the ultra micro grain carbide with wear-resistance, it realizes a long tool life in high-silicon aluminium alloy processing.

CARBIDE END MILLS

C-2MA

Medium, 2 flute, For Aluminium Alloy



$D_1 \leq 3$	-0.010	-0.028
$3 < D_1 \leq 6$	-0.020	-0.038
$6 < D_1 \leq 18$	-0.025	-0.047
$18 < D_1$	-0.025	-0.053



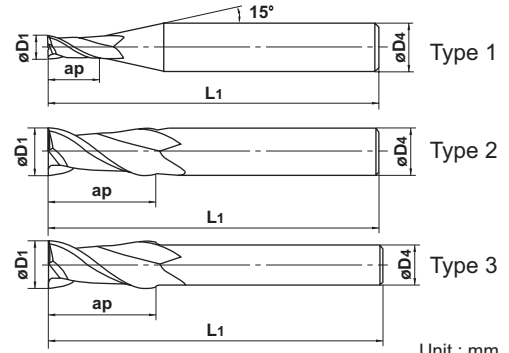
$D_1 < 3$

$3 \leq D_1$

$D_1 < 3$

$3 \leq D_1$

- Due to the optimal design for aluminium processing, high efficient and high precision processing are made possible.



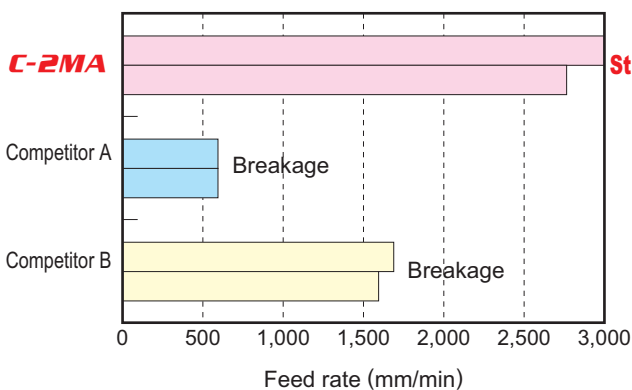
Unit : mm

Order Number	Dia. D1	Length of Cut ap	Overall Length L1	Shank Dia. D4	No. of Flute N	Stock	Type
C2MAD0100	1	2.5	40	4	2	●	1
C2MAD0150	1.5	4	40	4	2	●	1
C2MAD0200	2	6	40	4	2	●	1
C2MAD0250	2.5	8	40	4	2	●	1
C2MAD0300	3	8	45	6	2	●	1
C2MAD0400	4	11	45	6	2	●	1
C2MAD0500	5	13	50	6	2	●	1
C2MAD0600	6	13	50	6	2	●	2
C2MAD0800	8	19	60	8	2	●	2
C2MAD1000	10	22	70	10	2	●	2
C2MAD1200	12	26	75	12	2	●	2
C2MAD1400	14	26	75	12	2	●	3
C2MAD1500	15	30	80	16	2	●	1
C2MAD1600	16	32	90	16	2	●	2
C2MAD1800	18	32	90	16	2	●	3
C2MAD2000	20	38	100	20	2	●	2

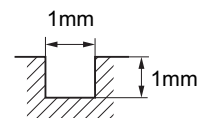
● : Inventory maintained.

Machining example Medium, 2 flute, For Aluminium Alloy

Tool life span before breakage (Breakage Feed Rate)



End Mill	C-2MA $\phi 1$
Work Material	A7075
Revolution	$40,000 \text{min}^{-1}$ (126m/min)
Cutting method	Emulsion



C-2LA

Long, 2 flute, For Aluminium Alloy



$D_1 \leq 3$	-0.010	-0.028
$3 < D_1 \leq 6$	-0.020	-0.038
$6 < D_1 \leq 18$	-0.025	-0.047
$18 < D_1$	-0.025	-0.053



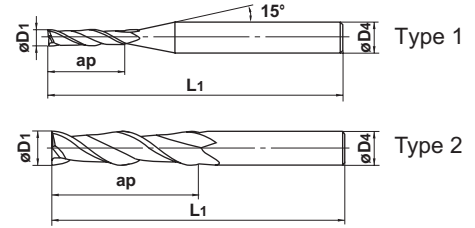
$D_1 < 3$

$3 \leq D_1$

$D_1 < 3$

$3 \leq D_1$

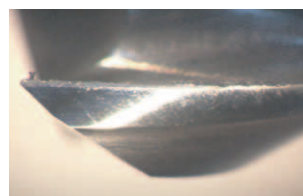
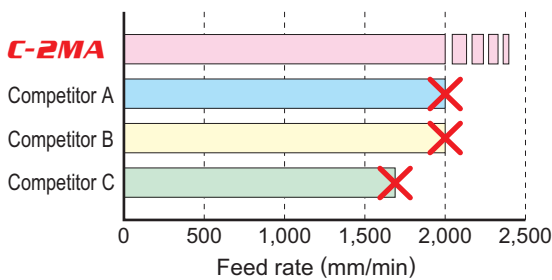
- Due to the optimal design for aluminium processing, high efficient and high precision processing are made possible.



Unit : mm

Order Number	Dia. D1	Length of Cut ap	Overall Length L1	Shank Dia. D4	No. of Flute N	Stock	Type
C2LAD0100	1	4	40	4	2	●	1
C2LAD0150	1.5	6	40	4	2	●	1
C2LAD0200	2	9	40	4	2	●	1
C2LAD0250	2.5	12	40	4	2	●	1
C2LAD0300	3	20	60	6	2	●	1
C2LAD0400	4	25	60	6	2	●	1
C2LAD0500	5	30	70	6	2	●	1
C2LAD0600	6	30	70	6	2	●	2
C2LAD0800	8	40	90	8	2	●	2
C2LAD1000	10	50	100	10	2	●	2
C2LAD1200	12	50	110	12	2	●	2
C2LAD1400	14	70	130	16	2	●	1
C2LAD1500	15	70	130	16	2	●	1
C2LAD1600	16	70	130	16	2	●	2
C2LAD1800	18	70	140	20	2	●	1
C2LAD2000	20	70	140	20	2	●	2

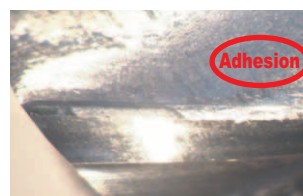
Comparison of cutting tooth adhesion



C-2MA (Feed rate 2,000mm/min)



Competitor A (Feed rate 2,000mm/min)

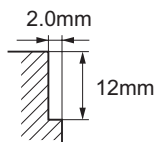


Competitor B (Feed rate 2,000mm/min)



Competitor C (Feed rate 1,600mm/min)

End Mill	C-2MA $\phi 10$
Work Material	AC4A
Revolution	20,000min ⁻¹ (628m/min)
Cutting method	Down cut, Air blow



C-2MA

Medium, 2 flute, For Aluminium Alloy

C-2LA

Long, 2 flute, For Aluminium Alloy


●C-2MA

■ Side milling

Work material	Aluminium alloy A7075		Aluminium cast AC4B	
Cutting speed	300m/min		240m/min	
Dia. (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)
1	40,000	600	40,000	460
2	40,000	1,100	38,000	850
3	32,000	1,400	25,000	950
4	24,000	1,500	19,000	1,000
5	19,000	1,600	15,000	1,000
6	16,000	1,900	13,000	1,100
8	12,000	1,900	9,500	1,200
10	9,500	1,900	7,600	1,200
12	8,000	1,900	6,400	1,200
16	6,000	1,900	4,800	1,200
20	4,800	1,500	3,800	1,000

Depth of cut

≤0.2D (D<φ3)
≤0.5D (D≥φ3)



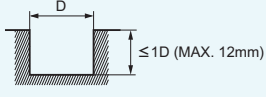
≤1D

D:Dia.

■ Slotting

Work material	Aluminium alloy A7075		Aluminium cast AC4B	
Cutting speed	240m/min		200m/min	
Dia. (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)
1	40,000	460	40,000	350
2	38,000	850	32,000	550
3	25,000	950	21,000	600
4	19,000	1,000	16,000	650
5	15,000	1,000	13,000	700
6	13,000	1,100	11,000	750
8	9,500	1,200	8,000	800
10	7,600	1,200	6,400	800
12	6,400	1,200	5,300	800
16	4,800	1,000	4,000	720
20	3,800	970	3,200	660

Depth of cut



≤1D (MAX. 12mm)

D:Dia.


●C-2LA

■ Side milling

Work material	Aluminium alloy A7075		Aluminium cast AC4B	
Cutting speed	150m/min		120m/min	
Dia. (mm)	Revolution (min ⁻¹)	Feed rate (mm/min)	Revolution (min ⁻¹)	Feed rate (mm/min)
1	40,000	320	38,000	240
2	24,000	380	19,000	240
3	16,000	510	13,000	330
4	12,000	580	9,500	380
5	9,500	640	7,600	400
6	8,000	640	6,400	400
8	6,000	770	4,800	480
10	4,800	770	3,800	480
12	4,000	770	3,200	480
16	3,000	670	2,400	430
20	2,400	610	1,900	390

Depth of cut

≤0.05D (D<φ3)
≤0.1D (D≥φ3)



≤2.5D

D:Dia.

- 1) If the rigidity of the machine or the work material installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately.
- 2) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 3) Water-soluble cutting fluid is recommended.
- 4) Climb cut is recommended for side milling.

MITSUBISHI MATERIALS KOBE TOOLS



JQA-2522
JQA-EM0941

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