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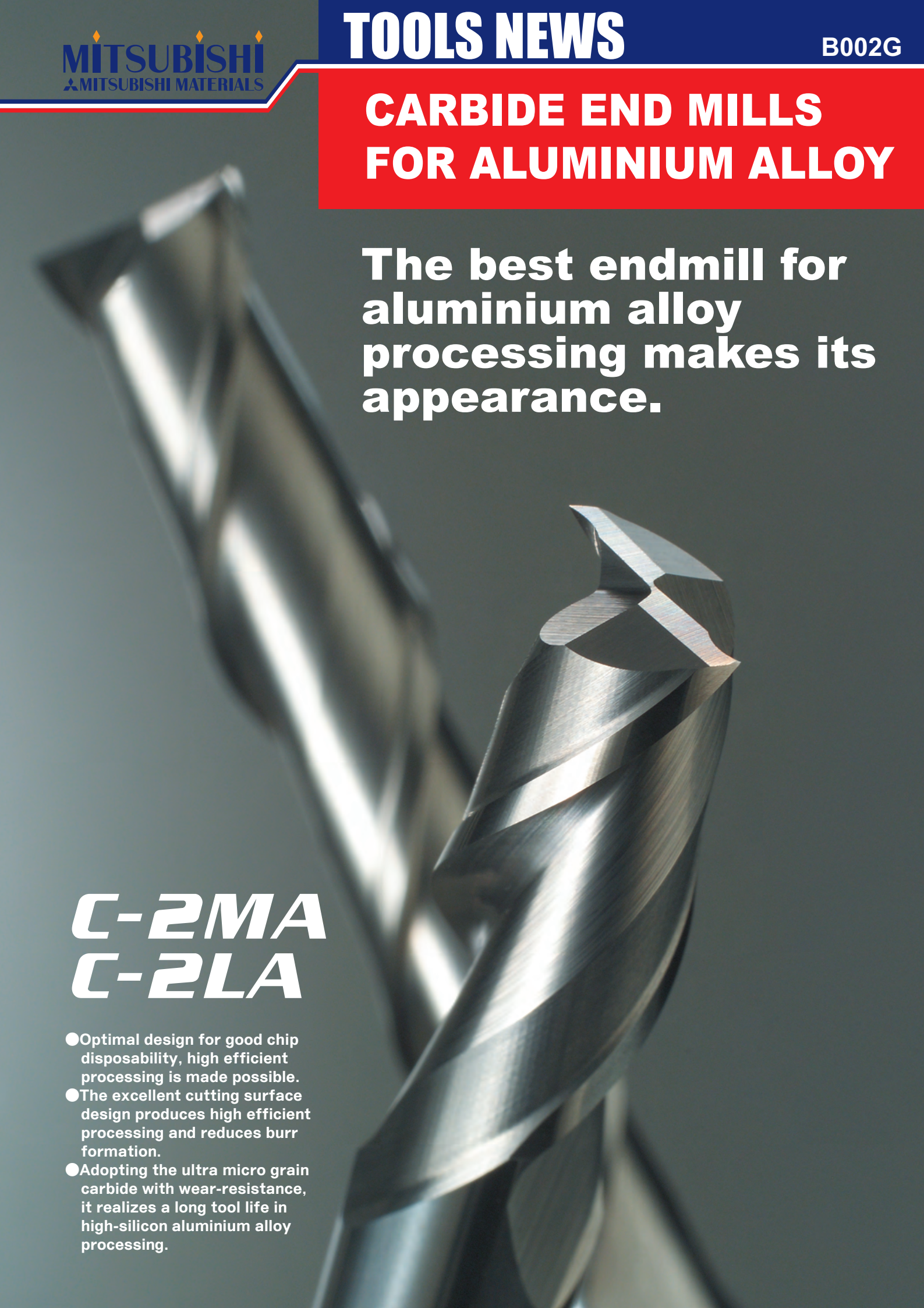
TOOLS NEWS

B002G

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

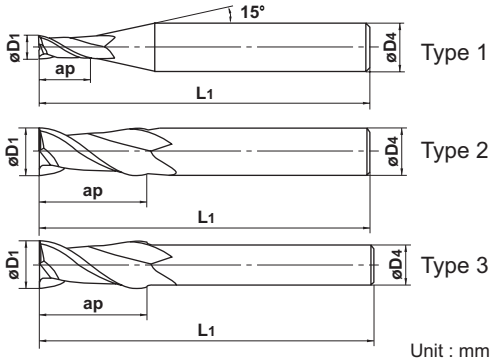
C-2MA

Medium, 2 flute, For Aluminium Alloy

D1≤3	-0.010 — -0.028
3<D1≤6	-0.020 — -0.038
6<D1≤18	-0.025 — -0.047
18<D1	-0.025 — -0.053

UWC | 30° D1<3 | 37.5° 3≤D1 | D1<3 | 3≤D1

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



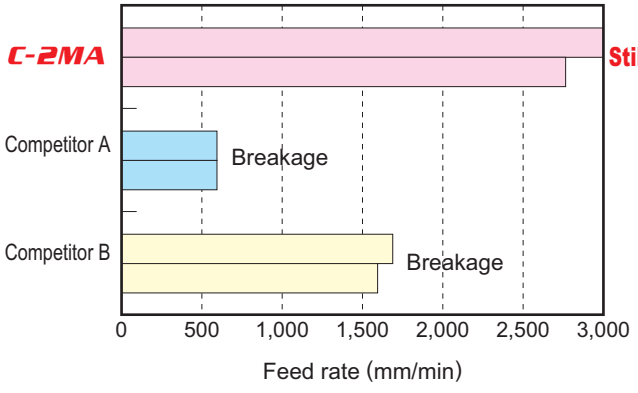
Unit : mm

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

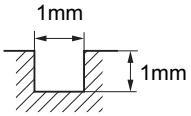
● : Inventory maintained.

Machining example Medium, 2 flute, For Aluminium Alloy

Tool life span before breakage (Breakage Feed Rate)



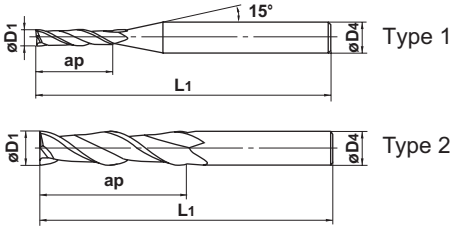
End Mill	C-2MA ϕ1
Work Material	A7075
Revolution	40,000min-1 (126m/min)
Cutting method	Emulsion

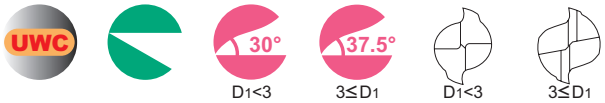


C-2LA

Long, 2 flute, For Aluminium Alloy

D1≤3	-0.010 — -0.028
3<D1≤6	-0.020 — -0.038
6<D1≤18	-0.025 — -0.047
18<D1	-0.025 — -0.053



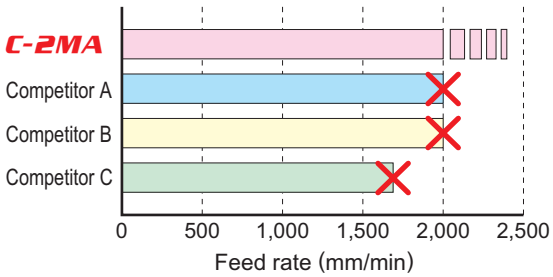


- Due to the optimal design for aluminium processing, high efficient and high precision processing are made possible.

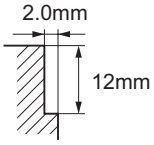
Unit : mm

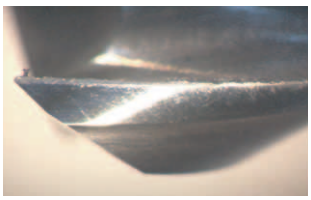
Order Number	Dia. D1	Length of Cut ap	Overall Length L1	Shank Dia. D4	No. of Flute N	Stock	Type
C2LAD0100	1	4	40	4	2	●	1
C2LAD0150	1.5	6	40	4	2	●	1
C2LAD0200	2	9	40	4	2	●	1
C2LAD0250	2.5	12	40	4	2	●	1
C2LAD0300	3	20	60	6	2	●	1
C2LAD0400	4	25	60	6	2	●	1
C2LAD0500	5	30	70	6	2	●	1
C2LAD0600	6	30	70	6	2	●	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

Comparision of cutting tooth adhesion



End Mill	C-2MA ϕ10
Work Material	AC4A
Revolution	20,000min-1 (628m/min)
Cutting method	Doun cut, Air blow





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)

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	D ≤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.

ISO 9001
ISO 14001
JQA-2522
JQA-EM0941

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