


SUMITOMO
CARBIDE - CBN - DIAMOND

AURORA Coat Drills for Non-Ferrous Metal Drilling

MULTIDRILL MDA Series

**Venturing into new regions
of aluminum alloy
drilling!**



Covers a wide application range from high-precision
to high-efficiency drilling

New DLC Coat **AURORA X-Coat**

Internal Coolant Supply Type $\varnothing 1,0$ – $\varnothing 12,0$ mm

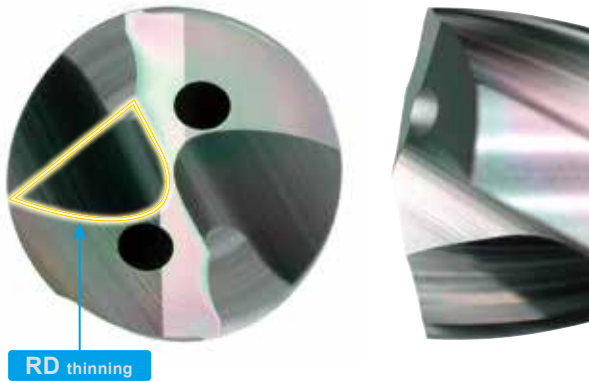
$\varnothing 1,0$ – $\varnothing 3,0$ mm 3D 5D 10D 15D 20D

$\varnothing 3,1$ – $\varnothing 12,0$ mm 3D 5D 10D

Realising high-precision/high-efficiency drilling!

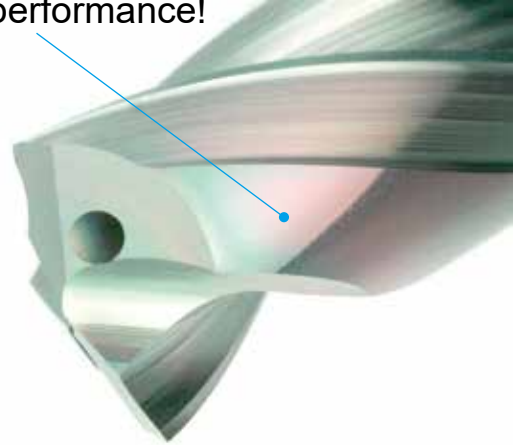
RD Thinning

Outstanding centring with special web thinning effect!



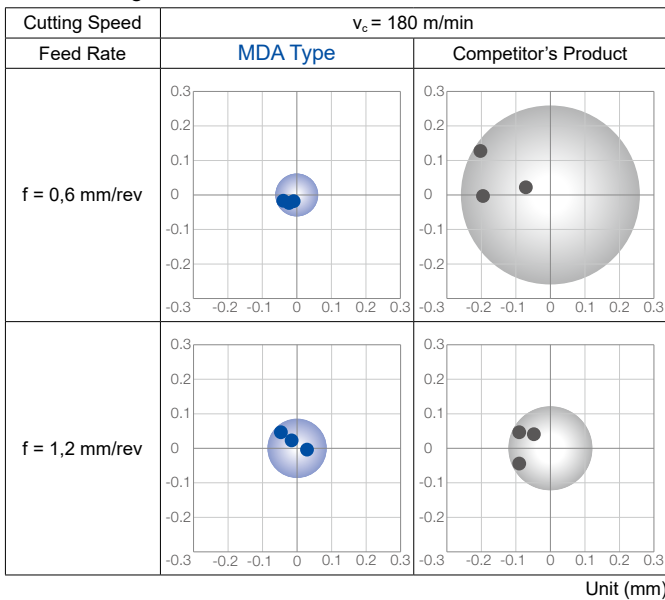
Wide Double Margin (Diameter: 3,1 mm up)

Hole precision is improved with wide double margin providing excellent guide performance!



■ Hole Position Accuracy

Direct drilling

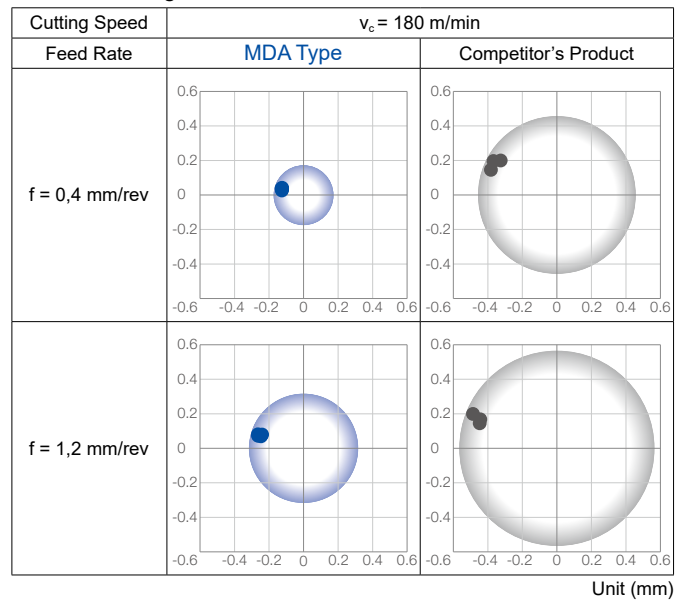
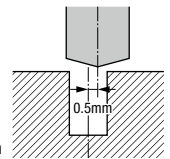


Work Material: ADC12, Tool: MDA0600S06H05 (Ø 6 mm x 5D) wet

Hole position stable even under high-efficiency conditions

Pre-cast drilling

Pre-cast hole deviation: 0,5 mm



Work Material: ADC12, Tool: MDA0600S06H05 (Ø 6 mm x 5D) wet

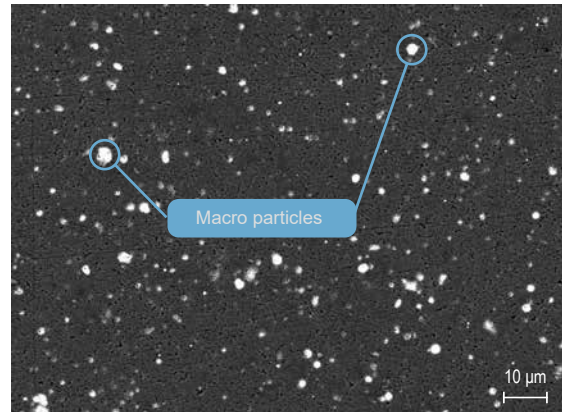
Significantly reduces the effects of pre-cast hole misalignment

AURORA X-Coat DLC Coat

■ Coating Surface Properties



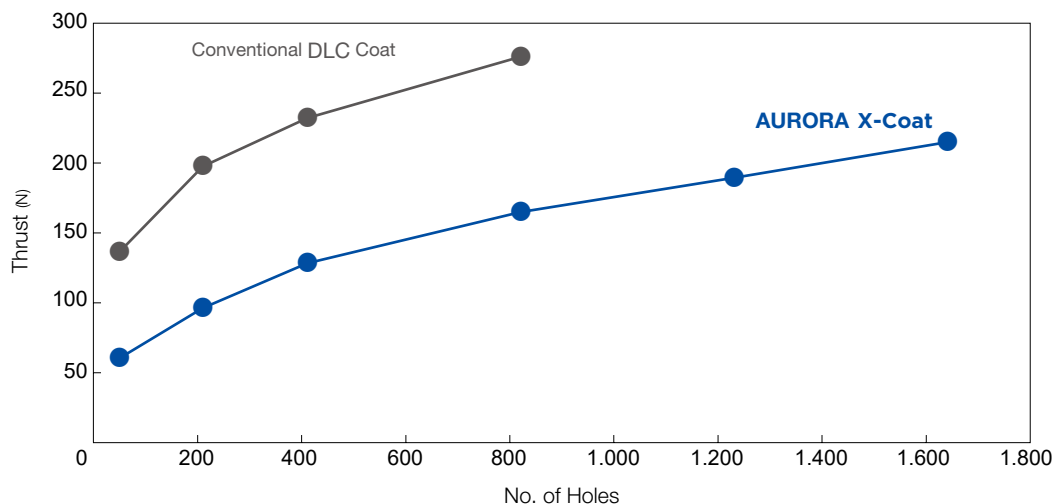
AURORA X-Coat



Conventional DLC Coat

New technology significantly improves smoothness

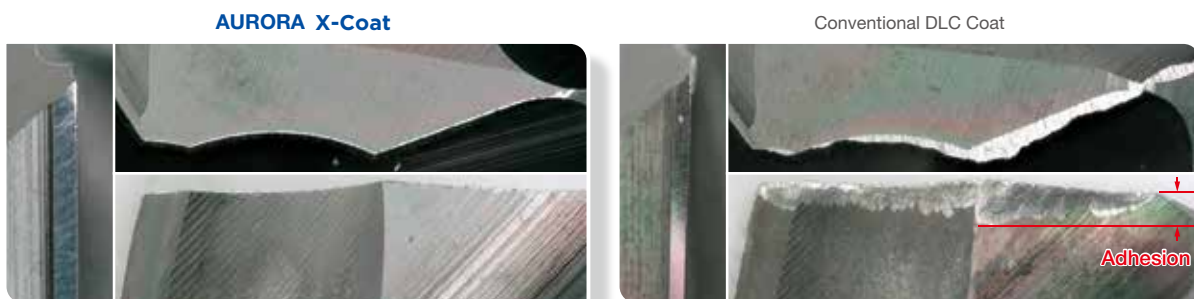
■ Cutting Force



Work Material: ADC12 Machine: Vertical Machining Centre BT30
 Tool: MDA0600S06H05 (Ø 6 mm x 5D)
 Cutting Data: $v_c = 180$ m/min, $f = 0,2$ mm/rev, internal coolant supply (water soluble)

Improved coating surface smoothness keeps resistance low at the initial stage, then transits to a gradual rise in resistance for a longer tool life

■ Adhesion Resistance



Work Material: ADC12 Machine: Vertical Machining Centre BT30
 Tool: MDA0600S06H05 (Ø 6 mm x 5D)
 Cutting Data: $v_c = 180$ m/min, $f = 0,2$ mm/rev, internal coolant supply (water soluble)

Excellent smoothness significantly reduces adhesion

Fig 1 L/D=3-5D Single margin

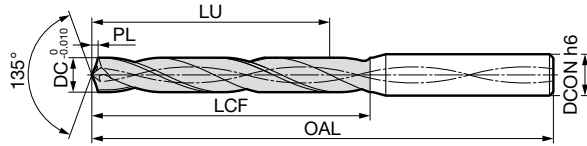
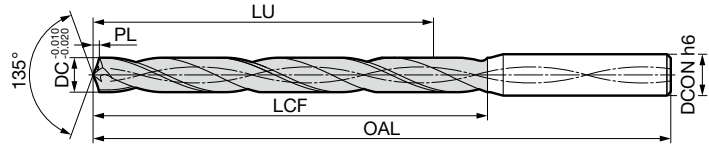


Fig 2 L/D=10-15-20D Single margin



■ Diameter Ø 1,0–2,0 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
1,0	3	○	MDA0100S03H03	4,5	6,0	45,0	0,2	3,0	1
	5	○	MDA0100S03H05	8,5	10,0	50,0	0,2	3,0	1
	10	○	MDA0100S03H10	12,5	14,0	55,0	0,2	3,0	2
	15	○	MDA0100S03H15	17,5	19,0	60,0	0,2	3,0	2
	20	○	MDA0100S03H20	22,5	24,0	65,0	0,2	3,0	2
1,1	3	○	MDA0110S03H03	6,4	8,0	45,0	0,2	3,0	1
	5	○	MDA0110S03H05	10,4	12,0	50,0	0,2	3,0	1
	10	○	MDA0110S03H10	16,4	18,0	55,0	0,2	3,0	2
	15	○	MDA0110S03H15	19,4	21,0	65,0	0,2	3,0	2
	20	○	MDA0110S03H20	24,4	26,0	70,0	0,2	3,0	2
1,2	3	○	MDA0120S03H03	6,2	8,0	48,0	0,2	3,0	1
	5	○	MDA0120S03H05	10,2	12,0	55,0	0,2	3,0	1
	10	○	MDA0120S03H10	16,2	18,0	60,0	0,2	3,0	2
	15	○	MDA0120S03H15	21,2	23,0	65,0	0,2	3,0	2
	20	○	MDA0120S03H20	27,2	29,0	70,0	0,2	3,0	2
1,3	3	○	MDA0130S03H03	6,1	8,0	48,0	0,3	3,0	1
	5	○	MDA0130S03H05	12,1	14,0	55,0	0,3	3,0	1
	10	○	MDA0130S03H10	18,1	20,0	60,0	0,3	3,0	2
	15	○	MDA0130S03H15	23,1	25,0	65,0	0,3	3,0	2
	20	○	MDA0130S03H20	29,1	31,0	75,0	0,3	3,0	2
1,4	3	○	MDA0140S03H03	5,9	8,0	48,0	0,3	3,0	1
	5	○	MDA0140S03H05	11,9	14,0	55,0	0,3	3,0	1
	10	○	MDA0140S03H10	17,9	20,0	60,0	0,3	3,0	2
	15	○	MDA0140S03H15	25,9	28,0	70,0	0,3	3,0	2
	20	○	MDA0140S03H20	31,9	34,0	75,0	0,3	3,0	2
1,5	3	○	MDA0150S03H03	5,8	8,0	48,0	0,3	3,0	1
	5	○	MDA0150S03H05	13,8	16,0	55,0	0,3	3,0	1
	10	○	MDA0150S03H10	20,8	23,0	65,0	0,3	3,0	2
	15	○	MDA0150S03H15	25,8	28,0	70,0	0,3	3,0	2
	20	○	MDA0150S03H20	33,8	36,0	75,0	0,3	3,0	2
1,6	3	○	MDA0160S03H03	7,6	10,0	50,0	0,3	3,0	1
	5	○	MDA0160S03H05	13,6	16,0	55,0	0,3	3,0	1
	10	○	MDA0160S03H10	22,6	25,0	65,0	0,3	3,0	2
	15	○	MDA0160S03H15	29,6	32,0	75,0	0,3	3,0	2
	20	○	MDA0160S03H20	35,6	38,0	80,0	0,3	3,0	2
1,7	3	○	MDA0170S03H03	7,5	10,0	50,0	0,4	3,0	1
	5	○	MDA0170S03H05	15,5	18,0	60,0	0,4	3,0	1
	10	○	MDA0170S03H10	22,5	25,0	65,0	0,4	3,0	2
	15	○	MDA0170S03H15	29,5	32,0	75,0	0,4	3,0	2
	20	○	MDA0170S03H20	38,5	41,0	80,0	0,4	3,0	2
1,8	3	○	MDA0180S03H03	7,3	10,0	50,0	0,4	3,0	1
	5	○	MDA0180S03H05	15,3	18,0	60,0	0,4	3,0	1
	10	○	MDA0180S03H10	25,3	28,0	70,0	0,4	3,0	2
	15	○	MDA0180S03H15	32,3	35,0	75,0	0,4	3,0	2
	20	○	MDA0180S03H20	40,3	43,0	85,0	0,4	3,0	2
1,9	3	○	MDA0190S03H03	7,2	10,0	50,0	0,4	3,0	1
	5	○	MDA0190S03H05	17,2	20,0	60,0	0,4	3,0	1
	10	○	MDA0190S03H10	25,2	28,0	70,0	0,4	3,0	2
	15	○	MDA0190S03H15	32,2	35,0	75,0	0,4	3,0	2
	20	○	MDA0190S03H20	43,2	46,0	85,0	0,4	3,0	2
2,0	3	○	MDA0200S03H03	7,0	10,0	50,0	0,4	3,0	1
	5	○	MDA0200S03H05	17,0	20,0	60,0	0,4	3,0	1
	10	○	MDA0200S03H10	27,0	30,0	70,0	0,4	3,0	2
	15	○	MDA0200S03H15	37,0	40,0	80,0	0,4	3,0	2
	20	○	MDA0200S03H20	45,0	48,0	90,0	0,4	3,0	2

Grade: DLX1700

○= Japan stock

■ Diameter Ø 2,1–3,0 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
2,1	3	○	MDA0210S03H03	9,9	13,0	55,0	0,4	3,0	1
	5	○	MDA0210S03H05	18,9	22,0	65,0	0,4	3,0	1
	10	○	MDA0210S03H10	26,9	30,0	70,0	0,4	3,0	2
	15	○	MDA0210S03H15	36,9	40,0	80,0	0,4	3,0	2
	20	○	MDA0210S03H20	46,9	50,0	95,0	0,4	3,0	2
2,2	3	○	MDA0220S03H03	9,7	13,0	55,0	0,5	3,0	1
	5	○	MDA0220S03H05	18,7	22,0	65,0	0,5	3,0	1
	10	○	MDA0220S03H10	28,7	32,0	75,0	0,5	3,0	2
	15	○	MDA0220S03H15	38,7	42,0	85,0	0,5	3,0	2
	20	○	MDA0220S03H20	47,7	51,0	95,0	0,5	3,0	2
2,3	3	○	MDA0230S03H03	9,6	13,0	55,0	0,5	3,0	1
	5	○	MDA0230S03H05	20,6	24,0	65,0	0,5	3,0	1
	10	○	MDA0230S03H10	28,6	32,0	75,0	0,5	3,0	2
	15	○	MDA0230S03H15	41,6	45,0	85,0	0,5	3,0	2
	20	○	MDA0230S03H20	49,6	53,0	100,0	0,5	3,0	2
2,4	3	○	MDA0240S03H03	9,4	13,0	55,0	0,5	3,0	1
	5	○	MDA0240S03H05	20,4	24,0	65,0	0,5	3,0	1
	10	○	MDA0240S03H10	31,4	35,0	75,0	0,5	3,0	2
	15	○	MDA0240S03H15	41,4	45,0	85,0	0,5	3,0	2
	20	○	MDA0240S03H20	52,4	56,0	100,0	0,5	3,0	2
2,5	3	○	MDA0250S03H03	9,3	13,0	55,0	0,5	3,0	1
	5	○	MDA0250S03H05	22,3	26,0	65,0	0,5	3,0	1
	10	○	MDA0250S03H10	31,3	35,0	75,0	0,5	3,0	2
	15	○	MDA0250S03H15	41,3	45,0	85,0	0,5	3,0	2
	20	○	MDA0250S03H20	56,3	60,0	105,0	0,5	3,0	2
2,6	3	○	MDA0260S03H03	11,1	15,0	60,0	0,5	3,0	1
	5	○	MDA0260S03H05	22,1	26,0	70,0	0,5	3,0	1
	10	○	MDA0260S03H10	34,1	38,0	80,0	0,5	3,0	2
	15	○	MDA0260S03H15	46,1	50,0	90,0	0,5	3,0	2
	20	○	MDA0260S03H20	57,1	61,0	105,0	0,5	3,0	2
2,7	3	○	MDA0270S03H03	11,0	15,0	60,0	0,6	3,0	1
	5	○	MDA0270S03H05	24,0	28,0	70,0	0,6	3,0	1
	10	○	MDA0270S03H10	34,0	38,0	80,0	0,6	3,0	2
	15	○	MDA0270S03H15	46,0	50,0	90,0	0,6	3,0	2
	20	○	MDA0270S03H20	59,0	63,0	105,0	0,6	3,0	2
2,8	3	○	MDA0280S03H03	10,8	15,0	60,0	0,6	3,0	1
	5	○	MDA0280S03H05	23,8	28,0	70,0	0,6	3,0	1
	10	○	MDA0280S03H10	35,8	40,0	80,0	0,6	3,0	2
	15	○	MDA0280S03H15	50,8	55,0	95,0	0,6	3,0	2
	20	○	MDA0280S03H20	60,8	65,0	110,0	0,6	3,0	2
2,9	3	○	MDA0290S03H03	10,7	15,0	60,0	0,6	3,0	1
	5	○	MDA0290S03H05	25,7	30,0	70,0	0,6	3,0	1
	10	○	MDA0290S03H10	35,7	40,0	80,0	0,6	3,0	2
	15	○	MDA0290S03H15	50,7	55,0	95,0	0,6	3,0	2
	20	○	MDA0290S03H20	62,7	67,0	110,0	0,6	3,0	2
3,0	3	○	MDA0300S03H03	10,5	15,0	60,0	0,6	3,0	1
	5	○	MDA0300S03H05	25,5	30,0	70,0	0,6	3,0	1
	10	○	MDA0300S03H10	37,5	42,0	82,0	0,6	3,0	2
	15	○	MDA0300S03H15	53,5	58,0	98,0	0,6	3,0	2
	20	○	MDA0300S03H20	64,5	69,0	110,0	0,6	3,0	2

Grade: DLX1700

Fig 1 L/D=3-5D Double margin

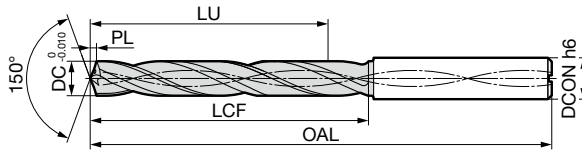
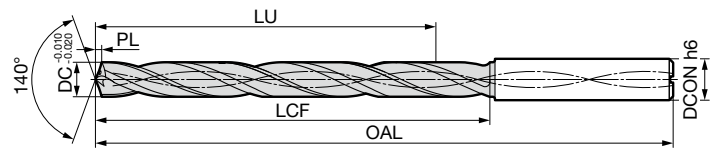


Fig 2 L/D=10D Double margin



■ Diameter Ø 3,1–4,5 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
3,1	3	○	MDA0310S04H03	15,8	20,4	72,4	0,4	4,0	1
	5	○	MDA0310S04H05	27,8	32,4	86,4	0,4	4,0	1
	10	○	MDA0310S04H10	44,9	49,6	106,6	0,6	4,0	2
3,2	3	○	MDA0320S04H03	15,6	20,4	72,4	0,4	4,0	1
	5	○	MDA0320S04H05	27,6	32,4	86,4	0,4	4,0	1
	10	○	MDA0320S04H10	44,8	49,6	106,6	0,6	4,0	2
3,3	3	○	MDA0330S04H03	15,5	20,4	72,4	0,4	4,0	1
	5	○	MDA0330S04H05	27,5	32,4	86,4	0,4	4,0	1
	10	○	MDA0330S04H10	44,7	49,6	106,6	0,6	4,0	2
3,4	3	○	MDA0340S04H03	15,4	20,5	72,5	0,5	4,0	1
	5	○	MDA0340S04H05	27,4	32,5	86,5	0,5	4,0	1
	10	○	MDA0340S04H10	44,5	49,6	106,6	0,6	4,0	2
3,5	3	○	MDA0350S04H03	15,2	20,5	72,5	0,5	4,0	1
	5	○	MDA0350S04H05	27,2	32,5	86,5	0,5	4,0	1
	10	○	MDA0350S04H10	44,4	49,6	106,6	0,6	4,0	2
3,6	3	○	MDA0360S04H03	17,6	23,0	72,5	0,5	4,0	1
	5	○	MDA0360S04H05	31,1	36,5	86,5	0,5	4,0	1
	10	○	MDA0360S04H10	51,3	56,7	106,7	0,7	4,0	2
3,65	3	○	MDA0365S04H03	17,4	23,0	72,5	0,5	4,0	1
	5	○	MDA0365S04H05	30,9	36,5	86,5	0,5	4,0	1
3,66	5	○	MDA0366S04H05	30,9	36,5	86,5	0,5	4,0	1
3,7	3	○	MDA0370S04H03	17,4	23,0	72,5	0,5	4,0	1
	5	○	MDA0370S04H05	30,9	36,5	86,5	0,5	4,0	1
	10	○	MDA0370S04H10	51,1	56,7	106,7	0,7	4,0	2
3,8	3	○	MDA0380S04H03	17,3	23,0	72,5	0,5	4,0	1
	5	○	MDA0380S04H05	30,8	36,5	86,5	0,5	4,0	1
	10	○	MDA0380S04H10	51,0	56,7	106,7	0,7	4,0	2
3,9	3	○	MDA0390S04H03	17,2	23,0	72,5	0,5	4,0	1
	5	○	MDA0390S04H05	30,7	36,5	86,5	0,5	4,0	1
	10	○	MDA0390S04H10	50,9	56,7	106,7	0,7	4,0	2
4,0	3	○	MDA0400S04H03	17,0	23,0	72,5	0,5	4,0	1
	5	○	MDA0400S04H05	30,5	36,5	86,5	0,5	4,0	1
	10	○	MDA0400S04H10	50,7	56,7	106,7	0,7	4,0	2
4,1	3	○	MDA0410S06H03	19,4	25,5	80,5	0,5	6,0	1
	5	○	MDA0410S06H05	34,4	40,5	98,5	0,5	6,0	1
	10	○	MDA0410S06H10	57,6	63,7	121,7	0,7	6,0	2
4,2	3	○	MDA0420S06H03	19,3	25,6	80,6	0,6	6,0	1
	5	○	MDA0420S06H05	34,3	40,6	98,6	0,6	6,0	1
	10	○	MDA0420S06H10	57,5	63,8	121,8	0,8	6,0	2
4,3	3	○	MDA0430S06H03	19,1	25,6	80,6	0,6	6,0	1
	5	○	MDA0430S06H05	34,1	40,6	98,6	0,6	6,0	1
	10	○	MDA0430S06H10	57,3	63,8	121,8	0,8	6,0	2
4,4	3	○	MDA0440S06H03	19,0	25,6	80,6	0,6	6,0	1
	5	○	MDA0440S06H05	34,0	40,6	98,6	0,6	6,0	1
	10	○	MDA0440S06H10	57,2	63,8	121,8	0,8	6,0	2
4,5	3	○	MDA0450S06H03	18,9	25,6	80,6	0,6	6,0	1
	5	○	MDA0450S06H05	33,9	40,6	98,6	0,6	6,0	1
	10	○	MDA0450S06H10	57,1	63,8	121,8	0,8	6,0	2

Grade: DLX1700

■ Diameter Ø 4,6–6,0 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
4,6	3	○	MDA0460S06H03	20,7	27,6	80,6	0,6	6,0	1
	5	○	MDA0460S06H05	37,7	44,6	98,6	0,6	6,0	1
	10	○	MDA0460S06H10	61,9	68,8	121,8	0,8	6,0	2
4,7	3	○	MDA0470S06H03	20,6	27,6	80,6	0,6	6,0	1
	5	○	MDA0470S06H05	37,6	44,6	98,6	0,6	6,0	1
	10	○	MDA0470S06H10	61,8	68,9	121,9	0,9	6,0	2
4,8	3	○	MDA0480S06H03	20,4	27,6	80,6	0,6	6,0	1
	5	○	MDA0480S06H05	37,4	44,6	98,6	0,6	6,0	1
	10	○	MDA0480S06H10	61,7	68,9	121,9	0,9	6,0	2
4,9	3	○	MDA0490S06H03	20,5	27,7	80,7	0,7	6,0	1
	5	○	MDA0490S06H05	37,5	44,7	98,7	0,7	6,0	1
	10	○	MDA0490S06H10	61,7	68,9	121,9	0,9	6,0	2
5,0	3	○	MDA0500S06H03	20,2	27,7	80,7	0,7	6,0	1
	5	○	MDA0500S06H05	37,2	44,7	98,7	0,7	6,0	1
	10	○	MDA0500S06H10	61,4	68,9	121,9	0,9	6,0	2
5,1	3	○	MDA0510S06H03	20,5	28,2	82,7	0,7	6,0	1
	5	○	MDA0510S06H05	37,0	44,7	100,7	0,7	6,0	1
	10	○	MDA0510S06H10	70,3	77,9	136,9	0,9	6,0	2
5,2	3	○	MDA0520S06H03	20,4	28,2	82,7	0,7	6,0	1
	5	○	MDA0520S06H05	36,9	44,7	100,7	0,7	6,0	1
	10	○	MDA0520S06H10	70,1	77,9	136,9	0,9	6,0	2
5,3	3	○	MDA0530S06H03	20,3	28,2	82,7	0,7	6,0	1
	5	○	MDA0530S06H05	36,8	44,7	100,7	0,7	6,0	1
	10	○	MDA0530S06H10	70,0	78,0	137,0	1,0	6,0	2
5,4	3	○	MDA0540S06H03	20,1	28,2	82,7	0,7	6,0	1
	5	○	MDA0540S06H05	36,6	44,7	100,7	0,7	6,0	1
	10	○	MDA0540S06H10	69,9	78,0	137,0	1,0	6,0	2
5,5	3	○	MDA0550S06H03	20,0	28,2	82,7	0,7	6,0	1
	5	○	MDA0550S06H05	36,5	44,7	100,7	0,7	6,0	1
	10	○	MDA0550S06H10	69,8	78,0	137,0	1,0	6,0	2
5,6	3	○	MDA0560S06H03	22,3	30,7	82,7	0,8	6,0	1
	5	○	MDA0560S06H05	40,3	48,7	100,7	0,8	6,0	1
	10	○	MDA0560S06H10	76,6	85,0	137,0	1,0	6,0	2
5,7	3	○	MDA0570S06H03	22,2	30,8	82,8	0,8	6,0	1
	5	○	MDA0570S06H05	40,2	48,8	100,8	0,8	6,0	1
	10	○	MDA0570S06H10	76,5	85,0	137,0	1,0	6,0	2
5,8	3	○	MDA0580S06H03	22,1	30,8	82,8	0,8	6,0	1
	5	○	MDA0580S06H05	40,1	48,8	100,8	0,8	6,0	1
	10	○	MDA0580S06H10	76,4	85,1	137,1	1,1	6,0	2
5,9	3	○	MDA0590S06H03	21,9	30,8	82,8	0,8	6,0	1
	5	○	MDA0590S06H05	39,9	48,8	100,8	0,8	6,0	1
	10	○	MDA0590S06H10	76,2	85,1	137,1	1,1	6,0	2
6,0	3	○	MDA0600S06H03	21,8	30,8	82,8	0,8	6,0	1
	5	○	MDA0600S06H05	39,8	48,8	100,8	0,8	6,0	1
	10	○	MDA0600S06H10	76,1	85,1	137,1	1,1	6,0	2

Grade: DLX1700

Fig 1 L/D=3-5D Double margin

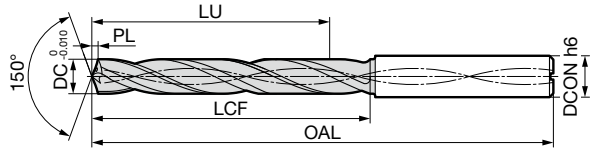
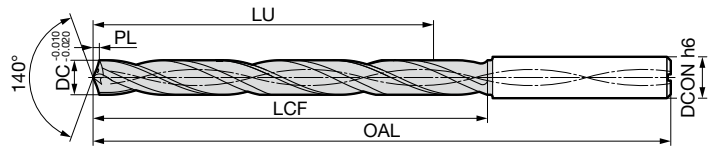


Fig 2 L/D=10D Double margin



■ Diameter Ø 6,1–7,5 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
6,1	3		MDA0610S08H03	24,2	33,3	88,8	0,8	8,0	1
	5	○	MDA0610S08H05	43,7	52,8	109,8	0,8	8,0	1
	10	○	MDA0610S08H10	83,0	92,1	152,1	1,1	8,0	2
6,2	3		MDA0620S08H03	24,0	33,3	88,8	0,8	8,0	1
	5	○	MDA0620S08H05	43,5	52,8	109,8	0,8	8,0	1
	10		MDA0620S08H10	82,8	92,1	152,1	1,1	8,0	2
6,3	3		MDA0630S08H03	23,9	33,3	88,8	0,8	8,0	1
	5	○	MDA0630S08H05	43,4	52,8	109,8	0,8	8,0	1
	10		MDA0630S08H10	82,7	92,1	152,1	1,1	8,0	2
6,4	3		MDA0640S08H03	23,8	33,4	88,9	0,9	8,0	1
	5	○	MDA0640S08H05	43,3	52,9	109,9	0,9	8,0	1
	10		MDA0640S08H10	82,6	92,2	152,2	1,2	8,0	2
6,5	3	○	MDA0650S08H03	23,6	33,4	88,9	0,9	8,0	1
	5	○	MDA0650S08H05	43,1	52,9	109,9	0,9	8,0	1
	10	○	MDA0650S08H10	82,4	92,2	152,2	1,2	8,0	2
6,6	3		MDA0660S08H03	24,0	33,9	88,9	0,9	8,0	1
	5	○	MDA0660S08H05	45,0	54,9	109,9	0,9	8,0	1
	10		MDA0660S08H10	87,3	97,2	152,2	1,2	8,0	2
6,7	3	○	MDA0670S08H03	24,0	33,9	88,9	0,9	8,0	1
	5	○	MDA0670S08H05	45,0	54,9	109,9	0,9	8,0	1
	10		MDA0670S08H10	87,3	97,2	152,2	1,2	8,0	2
6,8	3	○	MDA0680S08H03	23,7	33,9	88,9	0,9	8,0	1
	5	○	MDA0680S08H05	44,7	54,9	109,9	0,9	8,0	1
	10	○	MDA0680S08H10	87,0	97,2	152,2	1,2	8,0	2
6,9	3		MDA0690S08H03	23,6	33,9	88,9	0,9	8,0	1
	5		MDA0690S08H05	44,6	54,9	109,9	0,9	8,0	1
	10		MDA0690S08H10	86,9	97,3	152,3	1,3	8,0	2
7,0	3	○	MDA0700S08H03	23,4	33,9	88,9	0,9	8,0	1
	5	○	MDA0700S08H05	44,4	54,9	109,9	0,9	8,0	1
	10	○	MDA0700S08H10	86,8	97,3	152,3	1,3	8,0	2
7,1	3		MDA0710S08H03	27,8	38,4	94,9	1,0	8,0	1
	5	○	MDA0710S08H05	50,3	60,9	118,9	1,0	8,0	1
	10		MDA0710S08H10	95,6	106,3	167,3	1,3	8,0	2
7,2	3		MDA0720S08H03	27,7	38,5	95,0	1,0	8,0	1
	5	○	MDA0720S08H05	50,2	61,0	119,0	1,0	8,0	1
	10		MDA0720S08H10	95,5	106,3	167,3	1,3	8,0	2
7,3	3		MDA0730S08H03	27,5	38,5	95,0	1,0	8,0	1
	5	○	MDA0730S08H05	50,0	61,0	119,0	1,0	8,0	1
	10		MDA0730S08H10	95,4	106,3	167,3	1,3	8,0	2
7,35	3	○	MDA0735S08H03	27,4	38,5	95,0	1,0	8,0	1
	5	○	MDA0735S08H05	49,9	61,0	119,0	1,0	8,0	1
7,4	3	○	MDA0740S08H03	27,4	38,5	95,0	1,0	8,0	1
	5	○	MDA0740S08H05	49,9	61,0	119,0	1,0	8,0	1
	10		MDA0740S08H10	95,2	106,3	167,3	1,3	8,0	2
7,5	3	○	MDA0750S08H03	27,3	38,5	95,0	1,0	8,0	1
	5	○	MDA0750S08H05	49,8	61,0	119,0	1,0	8,0	1
	10	○	MDA0750S08H10	95,1	106,4	167,4	1,4	8,0	2

Grade: DLX1700

■ Diameter Ø 7,6–9,0 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
7,6	3		MDA0760S08H03	29,6	41,0	95,0	1,0	8,0	1
	5	○	MDA0760S08H05	53,6	65,0	119,0	1,0	8,0	1
	10		MDA0760S08H10	102,0	113,4	167,4	1,4	8,0	2
7,7	3		MDA0770S08H03	29,5	41,0	95,0	1,0	8,0	1
	5	○	MDA0770S08H05	53,5	65,0	119,0	1,0	8,0	1
	10		MDA0770S08H10	101,9	113,4	167,4	1,4	8,0	2
7,8	3	○	MDA0780S08H03	29,3	41,0	95,0	1,0	8,0	1
	5	○	MDA0780S08H05	53,3	65,0	119,0	1,0	8,0	1
	10	○	MDA0780S08H10	101,7	113,4	167,4	1,4	8,0	2
7,9	3		MDA0790S08H03	29,2	41,1	95,1	1,1	8,0	1
	5	○	MDA0790S08H05	53,2	65,1	119,1	1,1	8,0	1
	10		MDA0790S08H10	101,6	113,4	167,4	1,4	8,0	2
8,0	3	○	MDA0800S08H03	29,1	41,1	95,1	1,1	8,0	1
	5	○	MDA0800S08H05	53,1	65,1	119,1	1,1	8,0	1
	10	○	MDA0800S08H10	101,5	113,5	167,5	1,5	8,0	2
8,1	3		MDA0810S10H03	31,4	43,6	101,1	1,1	10,0	1
	5	○	MDA0810S10H05	56,9	69,1	128,1	1,1	10,0	1
	10	○	MDA0810S10H10	108,3	120,5	182,5	1,5	10,0	2
8,2	3		MDA0820S10H03	31,3	43,6	101,1	1,1	10,0	1
	5	○	MDA0820S10H05	56,8	69,1	128,1	1,1	10,0	1
	10	○	MDA0820S10H10	108,2	120,5	182,5	1,5	10,0	2
8,3	3		MDA0830S10H03	31,2	43,6	101,1	1,1	10,0	1
	5	○	MDA0830S10H05	56,7	69,1	128,1	1,1	10,0	1
	10		MDA0830S10H10	108,1	120,5	182,5	1,5	10,0	2
8,4	3		MDA0840S10H03	31,0	43,6	101,1	1,1	10,0	1
	5	○	MDA0840S10H05	56,5	69,1	128,1	1,1	10,0	1
	10		MDA0840S10H10	107,9	120,5	182,5	1,5	10,0	2
8,5	3	○	MDA0850S10H03	31,0	43,6	101,1	1,1	10,0	1
	5	○	MDA0850S10H05	56,5	69,1	128,1	1,1	10,0	1
	10	○	MDA0850S10H10	107,9	120,5	182,5	1,5	10,0	2
8,6	3	○	MDA0860S10H03	31,2	44,1	101,1	1,2	10,0	1
	5	○	MDA0860S10H05	58,2	71,1	128,1	1,2	10,0	1
	10		MDA0860S10H10	112,7	125,6	182,6	1,6	10,0	2
8,7	3		MDA0870S10H03	31,1	44,2	101,2	1,2	10,0	1
	5	○	MDA0870S10H05	58,1	71,2	128,2	1,2	10,0	1
	10		MDA0870S10H10	112,5	125,6	182,6	1,6	10,0	2
8,8	3	○	MDA0880S10H03	31,0	44,2	101,2	1,2	10,0	1
	5	○	MDA0880S10H05	58,0	71,2	128,2	1,2	10,0	1
	10		MDA0880S10H10	112,4	125,6	182,6	1,6	10,0	2
8,9	3		MDA0890S10H03	30,8	44,2	101,2	1,2	10,0	1
	5	○	MDA0890S10H05	57,8	71,2	128,2	1,2	10,0	1
	10		MDA0890S10H10	112,3	125,6	182,6	1,6	10,0	2
9,0	3	○	MDA0900S10H03	30,7	44,2	101,2	1,2	10,0	1
	5	○	MDA0900S10H05	57,7	71,2	128,2	1,2	10,0	1
	10	○	MDA0900S10H10	112,1	125,6	182,6	1,6	10,0	2

Grade: DLX1700

Fig 1 L/D=3-5D Double margin

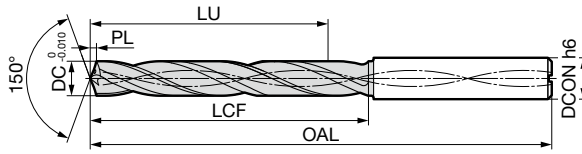
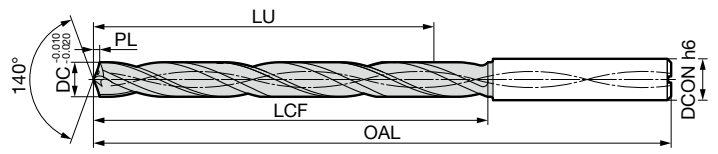


Fig 2 L/D=10D Double margin



■ Diameter Ø 9,1 to 10,5 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
9,1	3	○	MDA0910S10H03	35,1	48,7	107,2	1,2	10,0	1
	5	○	MDA0910S10H05	63,6	77,2	137,2	1,2	10,0	1
	10	○	MDA0910S10H10	121,0	134,7	197,7	1,7	10,0	2
9,2	3	○	MDA0920S10H03	34,9	48,7	107,2	1,2	10,0	1
	5	○	MDA0920S10H05	63,4	77,2	137,2	1,2	10,0	1
	10	○	MDA0920S10H10	120,9	134,7	197,7	1,7	10,0	2
9,21	5	○	MDA0930S10H05	63,3	77,2	137,2	1,2	10,0	1
9,3	3	○	MDA0930S10H03	34,8	48,7	107,2	1,2	10,0	1
	5	○	MDA0930S10H05	63,3	77,2	137,2	1,2	10,0	1
	10	○	MDA0930S10H10	120,7	134,7	197,7	1,7	10,0	2
9,4	3	○	MDA0940S10H03	34,7	48,8	107,3	1,3	10,0	1
	5	○	MDA0940S10H05	63,2	77,3	137,3	1,3	10,0	1
	10	○	MDA0940S10H10	120,6	134,7	197,7	1,7	10,0	2
9,5	3	○	MDA0950S10H03	34,5	48,8	107,3	1,3	10,0	1
	5	○	MDA0950S10H05	63,0	77,3	137,3	1,3	10,0	1
	10	○	MDA0950S10H10	120,5	134,7	197,7	1,7	10,0	2
9,6	3	○	MDA0960S10H03	36,9	51,3	107,3	1,3	10,0	1
	5	○	MDA0960S10H05	66,9	81,3	137,3	1,3	10,0	1
	10	○	MDA0960S10H10	127,3	141,7	197,7	1,7	10,0	2
9,7	3	○	MDA0970S10H03	36,7	51,3	107,3	1,3	10,0	1
	5	○	MDA0970S10H05	66,7	81,3	137,3	1,3	10,0	1
	10	○	MDA0970S10H10	127,2	141,8	197,8	1,8	10,0	2
9,8	3	○	MDA0980S10H03	36,6	51,3	107,3	1,3	10,0	1
	5	○	MDA0980S10H05	66,6	81,3	137,3	1,3	10,0	1
	10	○	MDA0980S10H10	127,1	141,8	197,8	1,8	10,0	2
9,9	3	○	MDA0990S10H03	36,5	51,3	107,3	1,3	10,0	1
	5	○	MDA0990S10H05	66,5	81,3	137,3	1,3	10,0	1
	10	○	MDA0990S10H10	127,0	141,8	197,8	1,8	10,0	2
10,0	3	○	MDA1000S10H03	36,3	51,3	107,3	1,3	10,0	1
	5	○	MDA1000S10H05	66,3	81,3	137,3	1,3	10,0	1
	10	○	MDA1000S10H10	126,8	141,8	197,8	1,8	10,0	2
10,1	3	○	MDA1010S12H03	38,7	53,8	117,3	1,4	12,0	1
	5	○	MDA1010S12H05	70,2	85,3	150,3	1,4	12,0	1
	10	○	MDA1010S12H10	133,7	148,8	216,8	1,8	12,0	2
10,2	3	○	MDA1020S12H03	38,6	53,9	117,4	1,4	12,0	1
	5	○	MDA1020S12H05	70,1	85,4	150,4	1,4	12,0	1
	10	○	MDA1020S12H10	133,6	148,9	216,9	1,9	12,0	2
10,3	3	○	MDA1030S12H03	38,6	53,9	117,4	1,4	12,0	1
	5	○	MDA1030S12H05	70,1	85,4	150,4	1,4	12,0	1
	10	○	MDA1030S12H10	133,6	148,9	216,9	1,9	12,0	2
10,4	3	○	MDA1040S12H03	38,3	53,9	117,4	1,4	12,0	1
	5	○	MDA1040S12H05	69,8	85,4	150,4	1,4	12,0	1
	10	○	MDA1040S12H10	133,3	148,9	216,9	1,9	12,0	2
10,5	3	○	MDA1050S12H03	38,2	53,9	117,4	1,4	12,0	1
	5	○	MDA1050S12H05	69,7	85,4	150,4	1,4	12,0	1
	10	○	MDA1050S12H10	133,2	148,9	216,9	1,9	12,0	2

Grade: DLX1700

■ Diameter Ø 10,6–12,0 mm

Dimensions (mm)

DC (mm)	Hole Depth (L/D)	Stock	Cat. No.	LU	LCF	OAL	PL	DCON	Fig
10,6	3	○	MDA1060S12H03	38,5	54,4	117,4	1,4	12,0	1
	5	○	MDA1060S12H05	71,5	87,4	150,4	1,4	12,0	1
	10	○	MDA1060S12H10	138,0	153,9	216,9	1,9	12,0	2
10,7	3	○	MDA1070S12H03	38,4	54,4	117,4	1,4	12,0	1
	5	○	MDA1070S12H05	71,4	87,4	150,4	1,4	12,0	1
	10	○	MDA1070S12H10	137,9	153,9	216,9	1,9	12,0	2
10,8	3	○	MDA1080S12H03	38,2	54,4	117,4	1,4	12,0	1
	5	○	MDA1080S12H05	71,2	87,4	150,4	1,4	12,0	1
	10	○	MDA1080S12H10	137,8	154,0	217,0	2,0	12,0	2
10,9	3	○	MDA1090S12H03	38,1	54,5	117,5	1,5	12,0	1
	5	○	MDA1090S12H05	71,1	87,5	150,5	1,5	12,0	1
	10	○	MDA1090S12H10	137,6	154,0	217,0	2,0	12,0	2
11,0	3	○	MDA1100S12H03	38,0	54,5	117,5	1,5	12,0	1
	5	○	MDA1100S12H05	71,0	87,5	150,5	1,5	12,0	1
	10	○	MDA1100S12H10	137,5	154,0	217,0	2,0	12,0	2
11,1	3	○	MDA1110S12H03	42,3	59,0	123,5	1,5	12,0	1
	5	○	MDA1110S12H05	76,8	93,5	159,5	1,5	12,0	1
	10	○	MDA1110S12H10	146,4	163,0	232,0	2,0	12,0	2
11,2	3	○	MDA1120S12H03	42,2	59,0	123,5	1,5	12,0	1
	5	○	MDA1120S12H05	76,7	93,5	159,5	1,5	12,0	1
	10	○	MDA1120S12H10	146,2	163,0	232,0	2,0	12,0	2
11,3	3	○	MDA1130S12H03	42,1	59,0	123,5	1,5	12,0	1
	5	○	MDA1130S12H05	76,6	93,5	159,5	1,5	12,0	1
	10	○	MDA1130S12H10	146,1	163,1	232,1	2,1	12,0	2
11,4	3	○	MDA1140S12H03	41,9	59,0	123,5	1,5	12,0	1
	5	○	MDA1140S12H05	76,4	93,5	159,5	1,5	12,0	1
	10	○	MDA1140S12H10	146,0	163,1	232,1	2,1	12,0	2
11,5	3	○	MDA1150S12H03	41,8	59,0	123,5	1,5	12,0	1
	5	○	MDA1150S12H05	76,3	93,5	159,5	1,5	12,0	1
	10	○	MDA1150S12H10	145,8	163,1	232,1	2,1	12,0	2
11,6	3	○	MDA1160S12H03	44,1	61,5	123,5	1,6	12,0	1
	5	○	MDA1160S12H05	80,1	97,5	159,5	1,6	12,0	1
	10	○	MDA1160S12H10	152,7	170,1	232,1	2,1	12,0	2
11,7	3	○	MDA1170S12H03	44,0	61,6	123,6	1,6	12,0	1
	5	○	MDA1170S12H05	80,0	97,6	159,6	1,6	12,0	1
	10	○	MDA1170S12H10	152,6	170,1	232,1	2,1	12,0	2
11,8	3	○	MDA1180S12H03	43,9	61,6	123,6	1,6	12,0	1
	5	○	MDA1180S12H05	79,9	97,6	159,6	1,6	12,0	1
	10	○	MDA1180S12H10	152,4	170,1	232,1	2,1	12,0	2
11,9	3	○	MDA1190S12H03	43,7	61,6	123,6	1,6	12,0	1
	5	○	MDA1190S12H05	79,7	97,6	159,6	1,6	12,0	1
	10	○	MDA1190S12H10	152,3	170,2	232,2	2,2	12,0	2
12,0	3	○	MDA1200S12H03	43,6	61,6	123,6	1,6	12,0	1
	5	○	MDA1200S12H05	79,6	97,6	159,6	1,6	12,0	1
	10	○	MDA1200S12H10	152,2	170,2	232,2	2,2	12,0	2

Grade: DLX1700

■ Recommended Cutting Conditions (L/D = 3D, 5D)

Work Material	Aluminum alloy casting/Aluminum alloy die cast material ADC, AC		Duraluminum-based aluminum alloy Al-Zn-Mg type (7075)		Wrought aluminum alloy Al-Mg type (5052)	
	Cutting Speed (m/min)	Feed Rate (mm/rev)	Cutting Speed (m/min)	Feed Rate (mm/rev)	Cutting Speed (m/min)	Feed Rate (mm/rev)
< Ø 2,00	50–120	0,05–0,40	40–90	0,05–0,20	50–120	0,04–0,08
< Ø 3,00	60–150	0,10–0,60	50–100	0,10–0,30	60–150	0,04–0,08
< Ø 4,00	60–150	0,15–0,80	50–120	0,15–0,40	60–150	0,05–0,12
< Ø 6,00	80–200	0,20–1,20	80–180	0,20–0,60	80–200	0,08–0,18
< Ø 8,00	100–200	0,20–1,20	80–180	0,20–0,80	100–200	0,10–0,20
< Ø 10,00	100–200	0,20–1,20	100–180	0,20–0,80	100–200	0,10–0,25
< Ø 12,00	120–250	0,20–1,20	120–200	0,20–0,80	120–250	0,10–0,30

- The recommended cutting conditions above are for cases where a water-soluble coolant is used.
- Use with internal coolant supply.
- Recommended coolant supply pressure of 2,0 MPa or higher for Ø 3 or below, and 1,5MPa or higher for over Ø 3.
- Keep the drill runout at 0,02 mm or lower.
- If abnormalities such as noise or vibration occur, change the cutting conditions accordingly.
- When drilling with pre-cast holes, we recommend the lower-limit end of the recommended conditions.

■ Recommended Cutting Conditions (L/D = 10D or longer)

Work Material	Aluminum alloy casting/Aluminum alloy die cast material ADC, AC		Duraluminum-based aluminum alloy Al-Zn-Mg type (7075)		Wrought aluminum alloy Al-Mg type (5052)	
	Cutting Speed (m/min)	Feed Rate (mm/rev)	Cutting Speed (m/min)	Feed Rate (mm/rev)	Cutting Speed (m/min)	Feed Rate (mm/rev)
< Ø 2,00	50–100	0,05–0,20	40–60	0,05–0,15	50–100	0,04–0,08
< Ø 3,00	60–120	0,10–0,30	50–80	0,10–0,20	60–120	0,04–0,08
< Ø 4,00	60–120	0,15–0,40	50–100	0,10–0,25	60–120	0,04–0,10
< Ø 6,00	80–150	0,20–0,60	60–120	0,15–0,30	80–150	0,06–0,12
< Ø 8,00	80–180	0,20–0,60	80–150	0,20–0,40	80–180	0,08–0,15
< Ø 10,00	100–180	0,20–0,60	100–150	0,20–0,40	100–180	0,10–0,20
< Ø 12,00	120–200	0,20–0,60	120–180	0,20–0,40	120–200	0,10–0,25

- The recommended cutting conditions above are for cases where a water-soluble coolant is used.
- Use with internal coolant supply.
- Recommended coolant supply pressure of 2,0 MPa or higher for Ø 3 or below, and 1,5 MPa or higher for over Ø 3.
- Keep the drill runout at 0,02 mm or lower.
- If abnormalities such as noise or vibration occur, change the cutting conditions accordingly.
- For drilling with pre-cast holes, drills of 10D (or longer) are not recommended.
- Drilling holes 10D or longer may lead to abnormalities; drill a guide hole (hole depth 1D to 2D) in advance.
- A 3D (5D) drill can be used for guide hole drilling. (For guide hole drilling, use conditions lower than the "Recommended feed for 10D or longer")



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