

DAL Type



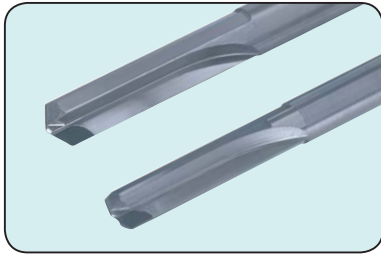
DDL Type



SUMIDIA Drills

DAL Type / DDL Type

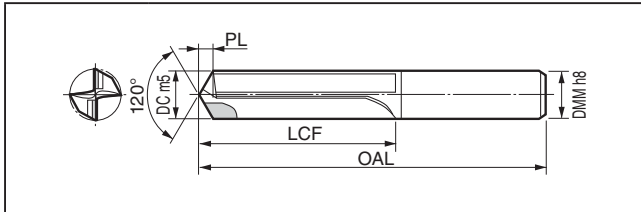
Carbon steel, alloy steel up to 0.28% 0.29%~	Tempered steel	Hardened steel up to 45HRC 46HRC~	Stainless steel	Ti alloy	Heat resistant alloy	Cast iron	Tactile cast iron	Aluminum alloy	Copper alloy	Composite CFRP	Polycrystalline diamond	3D
---	----------------	--------------------------------------	-----------------	----------	----------------------	-----------	-------------------	----------------	--------------	----------------	-------------------------	----



Our new product line includes a high precision type and a general type for machining holes in aluminum alloys!

- DAL type for high precision machining is capable of making IT class 7–8 holes.
- DDL type for general hole machining is capable of making IT class 11–12 holes. It is mainly used for machining holes for taps.

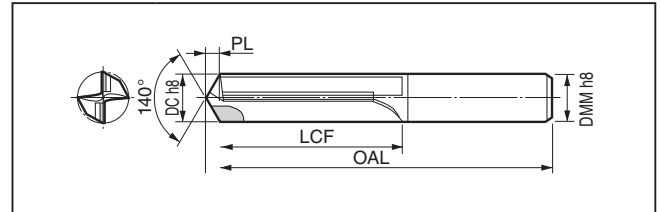
■ DAL Type



Grade class		SUMIDIA	P Steel	M Stainless steel	
Applicable machining processes	High speed / light cutting	N	K Cast iron	N Non-ferrous metal	
	General purpose cutting		S Exotic alloy	H Hardened steel	
	Rough cutting				
Cat. No.	DA2200	Cutting dia. (shank dia.) DC (DMM)	Flute length LCF	Length OAL	Tip PL
DAL 0500H–0600H		$\phi 5 \leq DC \leq \phi 6$	31.6	81.6	1.6
0601H–0700H		$\phi 6 < DC \leq \phi 7$	36.9	91.9	1.9
0701H–0800H		$\phi 7 < DC \leq \phi 8$	37.2	92.2	2.2
0801H–0900H		$\phi 8 < DC \leq \phi 9$	42.5	102.5	2.5
0901H–1000H		$\phi 9 < DC \leq \phi 10$	42.8	102.8	2.8
1001H–1100H		$\phi 10 < DC \leq \phi 11$	53.1	113.1	3.1
1101H–1200H		$\phi 11 < DC \leq \phi 12$	53.4	113.4	3.4

(Note) When ordering, for example, specify "DAL0605H" for $\phi 6.05$ mm.

■ DDL Type



Grade class		SUMIDIA	P Steel	M Stainless steel	
Applicable machining processes	High speed / light cutting	N	K Cast iron	N Non-ferrous metal	
	General purpose cutting		S Exotic alloy	H Hardened steel	
	Rough cutting				
Cat. No.	DA2200	Cutting dia. (shank dia.) DC (DMM)	Flute length LCF	Length OAL	Tip PL
DDL 050V–060V		$\phi 5 \leq DC \leq \phi 6$	31.5	81.0	1.0
061V–070V		$\phi 6 < DC \leq \phi 7$	36.2	91.2	1.2
071V–080V		$\phi 7 < DC \leq \phi 8$	36.4	91.4	1.4
081V–090V		$\phi 8 < DC \leq \phi 9$	41.6	101.6	1.6
091V–100V		$\phi 9 < DC \leq \phi 10$	41.7	101.7	1.7
101V–110V		$\phi 10 < DC \leq \phi 11$	51.9	111.9	1.9
111V–120V		$\phi 11 < DC \leq \phi 12$	52.1	112.1	2.1

(Note) When ordering, for example, specify "DDL105V" for $\phi 10.5$ mm.

■ Recommended Cutting Conditions

v_c : Cutting speed (m/min) f : Feed rate (mm/rev)

Cutting diameter DC (mm)	Conditions	DAL Type	DDL Type	Depth of cut	Oil
up to $\phi 8.0$	v_c	80 to 100 to 150	150 to 200 to 250	L/D = 3 or less	Emulsion
	f	0.05 to 0.1 to 0.15	0.1 to 0.15 to 0.25		
up to $\phi 12.0$	v_c	80 to 100 to 150	150 to 200 to 250		
	f	0.08 to 0.13 to 0.2	0.15 to 0.2 to 0.3		

Min. – Optimum – Max.

■ Precautions for Use

- When using DAL type for high precision machining, use it together with a machine that has especially high rigidity and a high precision holder.
- Supply a sufficient amount of cutting oil to the opening of the hole.

M

SUMIDIA

SUMIDIA
SUMIDA Binderless

SUMICRYSTAL