

New

Micro Long Drills MLDH-L / MLDH-P Type



■ General Features

Micro Long Drills are oil-hole drills for high efficiency drilling that were developed for drilling deep, small-diameter holes. These next-generation, small-diameter hole drills feature improved strength - often a problem area with small-diameter drills.

■ Characteristics and Applications

● Deep-hole drilling

New groove shape ensures good drill rigidity and chip evacuation.

High efficiency drilling to depths of over 20x drill diameter at over $v_f=500\text{mm/min}$ (drill diameter 1.3mm, SUS416 equivalent).

Optimal thinning and edge balance for stable chip control.

● Long tool life

Special coating provides long tool life with a wide variety of work materials.

Improved chip evacuation makes it possible to reduce spindle load fluctuation, ensuring stable tool life.

■ Series

Application	Series	Diameter Range (mm)	Hole Depth (l/d)	Remarks
Deep Hole Drilling	MLDH□□□□L5 Type	ø0.8 to 2.0	Up to 5	41 Models Stocked
	MLDH□□□□L12 Type	ø0.8 to 2.0	Up to 12	41 Models Stocked
	MLDH□□□□L20 Type	ø0.8 to 2.0	Up to 20	41 Models Stocked
	MLDH□□□□L30 Type	ø0.8 to 2.0	Up to 30	41 Models Stocked
Guide Hole Drilling	MLDH□□□□P Type	ø0.8 to 2.0	Up to 2	41 Models Stocked

■ Recommended Cutting Conditions

MLDH-P Type/MLDH-L5 Type

(v_c : Cutting Speed m/min f : Feed Rate mm/rev)

Drill Diameter ϕD_c (mm)	Cutting Conditions	Soft Steel Up to 200HB	General Steel Up to 250HB	Alloy Steel Up to 300HB	Stainless Steel Up to 200HB	Cast Iron FC/FCD	Aluminium Alloy	Heat-resistant steels
Up to 1.0	v_c	40 - 50 - 60	40 - 50 - 60	40 - 50 - 60	20 - 30 - 40	40 - 50 - 60	50 - 60 - 70	5 - 10 - 15
	f	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.02 - 0.03 - 0.04	0.03 - 0.04 - 0.06	0.005 - 0.01 - 0.02
Up to 1.5	v_c	40 - 50 - 60	40 - 50 - 60	40 - 50 - 60	20 - 30 - 40	40 - 50 - 60	50 - 60 - 70	5 - 10 - 15
	f	0.04 - 0.08 - 0.12	0.04 - 0.08 - 0.12	0.04 - 0.08 - 0.12	0.02 - 0.05 - 0.10	0.04 - 0.08 - 0.12	0.05 - 0.10 - 0.15	0.01 - 0.03 - 0.05
Up to 2.0	v_c	40 - 50 - 60	40 - 50 - 60	40 - 50 - 60	20 - 30 - 40	40 - 50 - 60	50 - 60 - 70	5 - 10 - 15
	f	0.06 - 0.08 - 0.12	0.06 - 0.08 - 0.12	0.06 - 0.08 - 0.12	0.04 - 0.06 - 0.10	0.06 - 0.08 - 0.12	0.08 - 0.12 - 0.15	0.01 - 0.03 - 0.05

Min. - Optimum - Max.

MLDH-L12 Type/MLDH-L20 Type/MLDH-L30 Type

Drill Diameter ϕD_c (mm)	Cutting Conditions	Soft Steel Up to 200HB	General Steel Up to 250HB	Alloy Steel Up to 300HB	Stainless Steel Up to 200HB	Cast Iron FC/FCD	Aluminium Alloy	Heat-resistant steels
Up to 1.0	v_c	40 - 50 - 60	40 - 50 - 60	40 - 50 - 60	20 - 30 - 40	40 - 50 - 60	50 - 60 - 70	5 - 10 - 15
	f	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.02 - 0.03 - 0.04	0.03 - 0.04 - 0.06	0.005 - 0.01 - 0.02
Up to 1.5	v_c	40 - 50 - 60	40 - 50 - 60	40 - 50 - 60	20 - 30 - 40	40 - 50 - 60	50 - 60 - 70	5 - 10 - 15
	f	0.03 - 0.05 - 0.07	0.03 - 0.05 - 0.07	0.03 - 0.05 - 0.07	0.02 - 0.04 - 0.07	0.04 - 0.07 - 0.10	0.05 - 0.08 - 0.12	0.01 - 0.02 - 0.03
Up to 2.0	v_c	40 - 50 - 60	40 - 50 - 60	40 - 50 - 60	20 - 30 - 40	40 - 50 - 60	50 - 60 - 70	5 - 10 - 15
	f	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.07 - 0.10	0.05 - 0.08 - 0.12	0.01 - 0.02 - 0.03

Min. - Optimum - Max.

■ Application Examples

● Automotive Component Mould (Equivalent to SUS416)

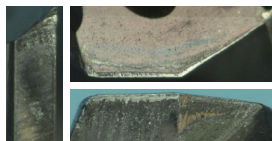
Tool : MLDH1400L20 (Guide : MLDH1400P)

Equipment : Vertical Machining Centre (HSKA63)

Coolant Supply : Internal Coolant (Emulsion Type, Pump Pressure : 4MPa)

Cutting Conditions : $v_c=60\text{m/min}$ $f=0.03\text{mm/rev}$ $H=21\text{mm}$

Tool Life : 600 Units (11.4m/reg)



● Tooling Component (Equivalent to SKD11)

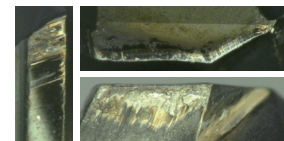
Tool : MLDH1900L20 (Guide : MLDH1900P)

Equipment : Vertical Machining Centre (HSKA63)

Coolant Supply : Internal Coolant (Emulsion Type, Pump Pressure : 4MPa)

Cutting Conditions : $v_c=60\text{m/min}$ $f=0.10\text{mm/rev}$ $H=27\text{mm}$

Tool Life : 600 Units (18m/reg)



Micro Long Drills MLDH-L / MLDH-P Type

New

MLDH-P Type



MLDH-L Type



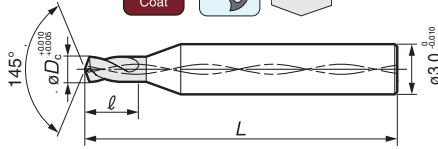
Internal Coolant Supply (MLDH-P Type / MLDH-L Type)

Carbon Steel	Alloy Steel	Tempered Steel	Hardened Steel	Stainless steel	Ti Alloy	Heat-resistant steel	Cast Iron	Ductile Cast Iron	Aluminium Alloy	Copper alloy	Composite CFRP
Up to 0.28%	From 0.2%	Steel	Up to 49HRC	From 49HRC	○	○	○	○	○	○	○

● MLDH-P Type



2D



● MLDH-L Type

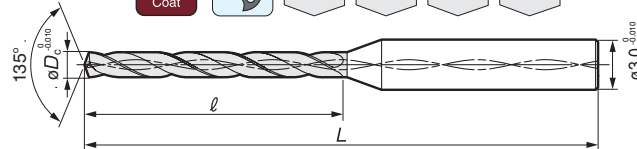


5D

12D

20D

30D



● MLDH-P Type/MLDH-L Type Dimensions and Stock Availability

Diameter ϕD_c (mm)	Dedicated Guide Hole MLDH-P Type			Micro Long Drill MLDH-L Type												
	Cat. No.	Stock	Dimensions (mm)	Cat. No. 5, 12, 20, 30	Hole Depth: 5D		Hole Depth: 12D		Hole Depth: 20D		Hole Depth: 30D					
					Stock	Dimensions (mm)	Stock	Dimensions (mm)	Stock	Dimensions (mm)	Stock	Dimensions (mm)				
			L	ℓ	5	L	ℓ	12	L	ℓ	20	L	ℓ	30	L	ℓ
0.80	MLDH 0800P	★		3.2	MLDH 0800L	★	8	★			★		19	★		
0.81	0810P	★			0810L	★					★			★		
0.82	MLDH 0820P	★		3.3	MLDH 0820L	★					★			★		28
0.83	0830P	★			0830L	★			14		★	60		★		
0.84	MLDH 0840P	★			MLDH 0840L	★					★		20	★		
0.85	0850P	★		3.4	0850L	★					★			★		29
0.86	0860P	★			0860L	★				55	★			★		
0.87	MLDH 0870P	★			MLDH 0870L	★					★		21	★		
0.88	0880P	★		3.5	0880L	★					★			★		30
0.89	MLDH 0890P	★			MLDH 0890L	★				15	★			★		
0.90	0900P	★		3.6	0900L	★	50				★			★		
0.91	0910P	★			0910L	★					★			★		31
0.92	MLDH 0920P	★			MLDH 0920L	★					★		22	★		
0.93	0930P	★		3.7	0930L	★					★			★		
0.94	MLDH 0940P	★			MLDH 0940L	★					★			★		32
0.95	0950P	★		3.8	0950L	★				16	★	65		★		
0.96	0960P	★	45		0960L	★					★		23	★		
0.97	MLDH 0970P	★			MLDH 0970L	★					★			★		33
0.98	0980P	★		3.9	0980L	★				60	★			★		
0.99	MLDH 0990P	★			MLDH 0990L	★					★		24	★		
1.00	1000P	★		4.0	1000L	★					★			★		34
1.05	MLDH 1050P	★		4.2	MLDH 1050L	★					★			★		36
1.10	MLDH 1100P	★		4.4	MLDH 1100L	★					★			★		37
1.15	MLDH 1150P	★		4.6	MLDH 1150L	★					★			★		39
1.20	MLDH 1200P	★		4.8	MLDH 1200L	★					★			★		41
1.25	MLDH 1250P	★		5.0	MLDH 1250L	★					★			★		43
1.30	MLDH 1300P	★		5.2	MLDH 1300L	★					★			★		44
1.35	MLDH 1350P	★		5.4	MLDH 1350L	★					★			★		46
1.40	MLDH 1400P	★		5.6	MLDH 1400L	★					★			★		48
1.45	MLDH 1450P	★		5.8	MLDH 1450L	★				65	★			★		49
1.50	MLDH 1500P	★		6.0	MLDH 1500L	★					★			★		51
1.55	MLDH 1550P	★		6.2	MLDH 1550L	★					★			★		53
1.60	MLDH 1600P	★		6.4	MLDH 1600L	★					★			★		54
1.65	MLDH 1650P	★		6.6	MLDH 1650L	★					★			★		56
1.70	MLDH 1700P	★		6.8	MLDH 1700L	★					★			★		58
1.75	MLDH 1750P	★		7.0	MLDH 1750L	★					★			★		60
1.80	MLDH 1800P	★		7.2	MLDH 1800L	★					★			★		61
1.85	MLDH 1850P	★		7.4	MLDH 1850L	★					★			★		63
1.90	MLDH 1900P	★		7.6	MLDH 1900L	★					★			★		65
1.95	MLDH 1950P	★		7.8	MLDH 1950L	★					★			★		66
2.00	MLDH 2000P	★		8.0	MLDH 2000L	★					★			★		68

Grade: ACV70

Please indicate 5, 12, 20 or 30 in the when ordering.
(Example: MLDH 1000L20)

■ Made to Order Items: Inquire about production of drills in tool diameters and lengths not listed above or not in stock.