MD (Micro drill) series

Meeting the demands of high density interconnect (HDI) printed circuit boards, these series of micro drills are for through hole and blind via hole drilling. Made from hyper fine grain carbide alloy, this is an extremely robust product range.

MD

SIZE :φ 0.05～φ 0.25

A straight type drill developed to focus on improved hole registration accuracy.

MC

SIZE :φ 0.105～φ 0.25

An under cut type drill developed to improve inner hole wall quality for better plating integrity. A key advantage is good swarf/chip evacuation.

MV

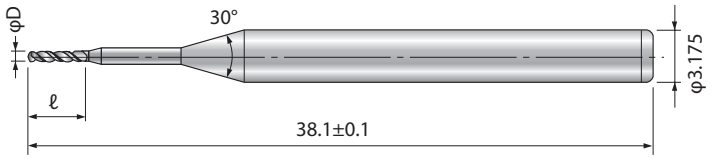
SIZE :φ 0.105～φ 0.25

A straight type drill developed to focus on improved hole registration accuracy, yet maintaining good inner hole wall quality.

MCV

SIZE :φ 0.2～φ 0.25

An under cut type drill that offers both excellent hole registration accuracy and inner hole wall quality.



Please see the recommended models on the next page.

Recommended models

φ Dmm	ℓ mm	Advantages*1			Series name	Label description	Part No.
		Hole registration	Balanced	Hole wall quality			
0.05	0.9				MD	MD	101-W050
0.075	1.2						101-W075
0.08							101-W080
0.105	1.5		O		MV	MV	120-W105
	1.8				MC	MC	108-W101
					MV	MV	120-W106
					MC	MC	108-W100
0.12	1.7	O			MD	MD	101-W122
	1.8		O		MCV	MCV	118-W120
	2.0			O	MD	MD	101-W120
0.15		O					101-W150
	2.5		O		MC	NEU	108-W150
		O			MV	NEV	120-W150
	2.7		O		MC	MC	108-W151
							108-W152
	3.0					NEU	108-W153
						MC	108-W158
0.20							108-W200
	3.5	O			MCV	MCV	118-W200
			O		MC	MC	108-W204
	4.0					NEU	108-W203
						MC	108-W208
							108-W252
0.25		O			MCV	NEUV	118-W252
	4.5		O		MC	NEU	108-W251
					MCV	MCV	118-W250
					MC	MC	108-W253
							108-W259
	4.7						108-W262

*1 Advantages
Hole registration : Developed to focus on improved hole registration accuracy.
Balanced : Offers a good balance between hole registration accuracy and inner hole wall quality .
Hole wall quality : Developed to focus on improved inner hole wall.quality

* Model recommendation/specification may change as part of our policy to improve performance and quality.

Parameters

Substrate material and FR-4 double-sided～4 layers

φ D	Spindle speed	Infeed rate	Chip load	Board thickness and stack height					
mm	k rpm	m/min	μ m/rev	**0.1mm**	**0.2mm**	**0.4mm**	**0.8mm**	**1.0-1.2mm**	**1.6mm**
0.05	160	0.8	5	1-2	1	1	1	-	-
	200	1.0							
0.10	125	0.6			3-4	2-3		1	1
	160	0.8		4-6					
	200	1.0							
0.15	125	0.9	7	5-8		3-4	1-2		
	160	1.2	8						
	200	1.5							
0.20	125	1.9	15	6-10	5-8		2-3	1-2	
	160	2.4							
	180	2.7							
0.25	125	2.5	20			4-5		2-3	
	140	2.8							

FR-4 6～8 layers

φ D	Spindle speed	Infeed rate	Chip load	Board thickness and stack height		
mm	k rpm	m/min	μ m/rev	**0.8mm**	**0.1.0-1.2mm**	**1.6mm**
0.10	125	0.6	5	1	1	1
	160	0.8				
	200	1.0				
0.15	125	0.9	7			
	160	1.2	8			
	200	1.5				
0.20	125	1.3	10	1-2		
	160	1.6				
	180	1.8				
0.25	125	1.5	12		1-2	
	140	1.7				

These are general parameters recommended for normal conditions. However they may vary depending on the material and machine/spindle rigidity.

Please refer to the "technical database" contained on our web site for more detail technical support information. http://www.usuniontool.com