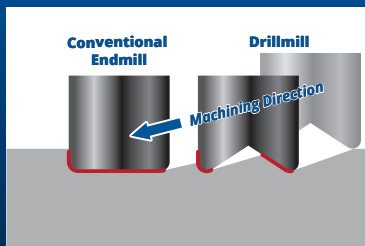
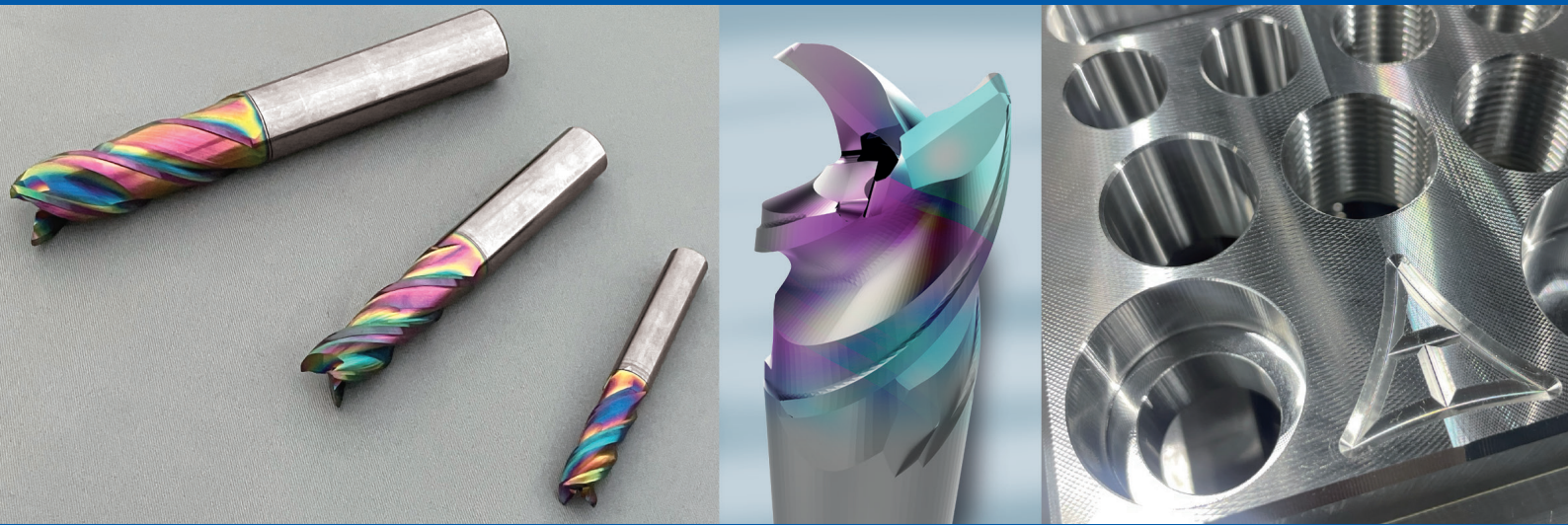
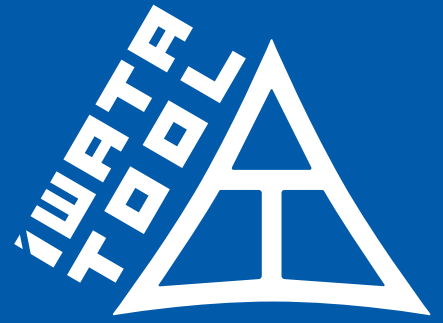
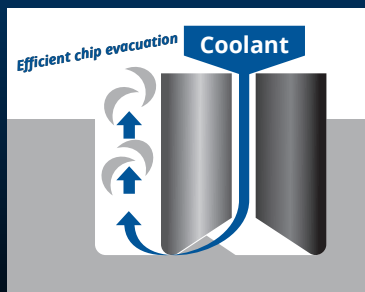


ENDMILL FOR HELICAL MILLING PROCESS

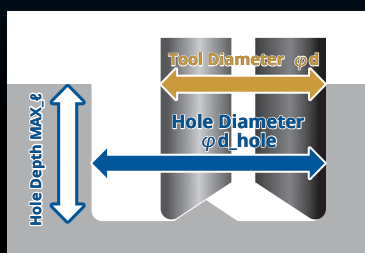
Drillmill



- Extremely reduced cutting forces.
- Minimized engagement of cutting edges.
- Ramping angle max 15°.



- Efficient Chip Evacuation



- For minimum die diameter possible please refer to the back of this brochure.
- Vertical drilling is not possible. Please use ramping.
- Machining time may vary depending on tool diameters and machine specifications
- Bigger tool diameters do not necessarily reduce machining time, especially in shallow holes.
- If the hole diameter exceeds twice the tool diameter, make a hole of 2xD first and enlarge it in a second step.

Drillmill Carbide 1.5D

DLC coating



CEMENTED
CARBIDE
MATERIAL

DLC
COATING

Drilling

Face
Milling

Slotting

Side
Face
Milling

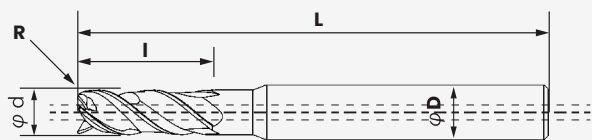


Fig. (1)

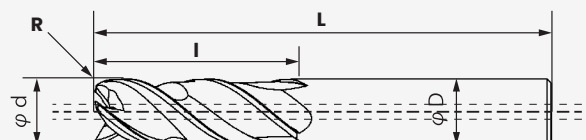


Fig. (2)

Product Code	Ø d	I	Ø D	L	Z	Fig.	R	*Min. hole Ø
DMRSHC1.5D-WDC6×R0.3	6	9	6	50	3	2	0,3	7,2
DMRSHC1.5D-WDC8×R0.4	8	12	8	65	3	2	0,4	9,6
DMRSHC1.5D-WDC10×R0.5	10	15	10	70	3	2	0,5	12
DMRSHC1.5D-WDC12×R0.6	12	18	12	80	3	2	0,6	14,4
DMRSHC1.5D-WDC16×R0.8	16	24	16	80	3	2	0,8	19,2
DMRSHC1.5D-WDC20×R1	20	30	20	100	3	2	1	-
DMRSHC1.5D-WDC25×R1	25	38	25	115	3	2	1	-

* Minimum Possible Hole Diameter



Cutting Conditions

Suitable Work Materials: Most Suitable [●●●] Suitable [●●] Possible [○]

Mild Steel	Carbon Steel	Alloy Steel	Heat treated Steel	Tool Steel	Hardened Steel		Stainless Steel	Cast Iron	Ductile Cast Iron	Titanium Alloy	Aluminium Alloy	Copper	Plastic	Ceramics etc.	
SS	S45C	SCM SCR	SKD SKS	~40 HRC	~45 HRC	45~ HRC	SUS	FC	FDC		Al	Cu		Machinable	Zirconia Glass
										○	●●●	●●●	●●●		

Drillmill Carbide 3D

DLC coating



CEMENTED
CARBIDE
MATERIAL

DLC
COATING

Drilling

Face
Milling

Slotting

Side
Face
Milling

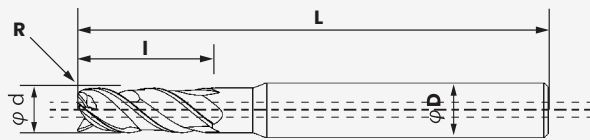


Fig. (1)

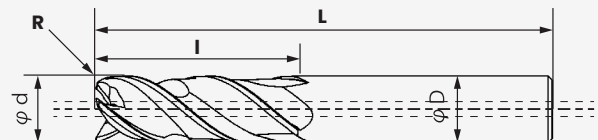


Fig. (2)

Product Code	Ø d	I	Ø D	L	Z	Fig.	R	*Min. hole Ø
DMRSHC3D-WDC 2XR0.1	2	6	3	40	3	1	0,10	2,6
DMRSHC3D-WDC 2.4XR0.1	2,4	7,5	3	40	3	1	0,10	3
DMRSHC3D-WDC 3XR0.15	3	9	4	40	3	1	0,15	3,6
DMRSHC3D-WDC 4XR0.2	4	12	4	40	3	2	0,20	4,8
DMRSHC3D-WDC 5XR0.25	5	15	6	50	3	1	0,25	6
DMRSHC3D-WDC 6XR0.3	6	18	6	50	3	2	0,30	7,2
DMRSHC3D-WDC 8XR0.4	8	24	8	65	3	2	0,40	9,6
DMRSHC3D-WDC 10XR0.5	10	30	10	70	3	2	0,50	12
DMRSHC3D-WDC 12XR0.6	12	36	12	80	3	2	0,60	14,4
DMRSHC3D-WDC 16XR0.8	16	48	16	100	3	2	0,80	19,2

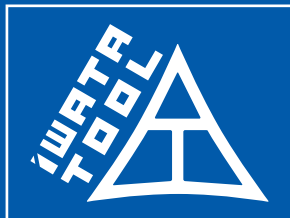
* Minimum Possible Hole Diameter



Cutting Conditions

Suitable Work Materials: Most Suitable [●●●] Suitable [●●] Possible [○]

Mild Steel	Carbon Steel	Alloy Steel	Heat treated Steel	Tool Steel	Hardened Steel		Stainless Steel	Cast Iron	Ductile Cast Iron	Titanium Alloy	Aluminium Alloy	Copper	Plastic	Ceramics etc.	
SS	S45C	SCM SCR	SKD SKS	~40 HRC	~45 HRC	45~ HRC	SUS	FC	FDC		Al	Cu		Machinable	Zirconia Glass
										○	●●●	●●●	●●●		



DRILLMILL MACHINING DEMONSTRATION

Work material: Aluminum A5052 / AlMg2 - Coolant: Emulsion
Note the burr free cross hole and inclined half hole

**MACHINING TIME OF
ALL OPERATIONS 3 MINUTES**



Tool Diameter (mm)	Number of Cutting Edges (Z)	Operation	Machining Diameter (mm)	Depth of Machining (mm)	Speed (rpm)	Feed (mm/min)	Feed Rate (mm/z)	Feed Speed (mm/min)	Feed Speed Finishing (mm/min)	Ramping Angle (deg)	Pitch (mm)
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IWATA TOOL - DRILLMILL - DMRSHC3D-WDC 16XR0.8

16	3	Hole	30.4	15	13000	653	0.200	3700	2400	10	7.977
16	3	Hole	22	30	13000	653	0.293	3120	1800	15	5.051
16	3	Hole	20.8	15	13000	653	0.222	2000	1200	15	4.041
16	3	Inclined hole with 60 degree	21.9	23	13000	653	0.297	3120	1800	15	5.868

IWATA TOOL - DRILLMILL - DMRSHC3D-WDC 12XR0.6

12	3	Rectangular pocket	22.8	12	16000	603	0.148	3360	-	10	5.983
12	3	Hole	19.23	30	10600	400	0.115	1380	1000	15	6.083
12	3	Narrow - Rectangular pocket	-	12	13300	501	0.086	3450	2500	-	2.4

IWATA TOOL - DRILLMILL - DMRSHC3D-WDC 8XR0.4

8	3	Hole	11.15	18	16000	402	0.221	3000	800	20	3.597
8	3	Inclined hole with 45 degrees	11.15	17	16000	402	0.221	3000	800	20	3.542

IWATA TOOL - DRILLMILL - DMRSHC3D-WDC 16XR0.8

16	3	Inclined half hole 45 degrees	-	-	13000	653	0.051	2000	-	-	12
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THIRD PARTY - ZERO CHIP SEAMLESS TAFLET - ZC-SL-TF M12X1.75 1.5C10

12	6	Blind hole tapping	M12	17	6000	226	-	-	-	-	-
12	6	Amount passing through the exit 2.625+1	M12	21.625	6000	226	-	-	-	-	-
12	6	45° amount passing through the exit 2	M12	19	6000	226	-	-	-	-	-

THIRD PARTY - SEAMLESS TAFLET - SL-TF M20X1.5 B11

20	6	Amount passing through the exit 3+1	M20	34	636	40	-	-	-	-	-
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THIRD PARTY - NOVA E'Z DISC - NED80-16

80	16	Face milling	-	0.05	10000	2513	0.050	8000	-	-	-
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IWATA TOOL - TOGLON MULTI CHAMFER - 90TGMTCH12CBALT9Z

12	9	Maximum chamfering width 2	-	-	16000	603	0.050	7200	-	-	-
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IWATA TOOL - Toglon Sharp SP - 90TG6CBDLC

6	1	V grooving	-	1.5	16000	302	0.150	2400	-	-	-
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IWATA TOOL - TOGLON MULTI BACK CHAMFER - 90TGMTBCH10

10	5	Back chamfering width 0.5	-	-	16000	503	0.050	4000	-	-	-
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Machining Example
VIDEO

IWATA TOOL EUROPE

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