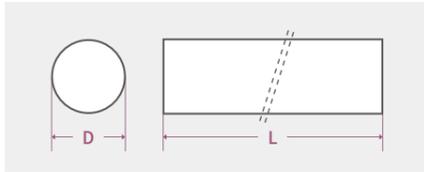


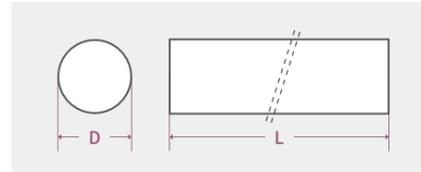
## Solid rods



unit: mm			
D	Tol	L	Tol
1.00~1.50	+0.05	320 / 330	
2.20~4.20	+0.30	310 / 330	
5.20~6.20	+0.40		
7.20~10.20	+0.45		+10.0
11.20~20.20	+0.55	310 / 330	
21.20~25.20	+0.65		
26.20~30.20	+0.75		

Additional diameter available up to Ø40.2 upon request

## Solid blanks



unit: mm				
D	Tol	L	Tol	Remarks
3.21~3.25	±0.01			Ground
3.30	±0.04	38.5	±0.1	Unground
3.00~30.00	h6	38~150	+1.0	Ground

**ILJIN** Diamond

# Tungsten Carbide Rods and Blanks

## Sales Network

<b>KOREA</b>	ILJIN Head Office	TEL +82-2-3777-8413	FAX +82-2-3777-8491	E-mail dia@iljin.co.kr
	6F, 15, Magokjungang 14-ro, Gangseo-gu, Seoul, 07789, Korea			
	Eumsung Plant	TEL +82-43-879-4752	FAX +82-43-879-4888	
	614-2, Oryu-Ri, Daeso-Myun, Eumsung-Gun, Chungcheongbuk-Do, 27659, Korea			
	Ansan Plant	TEL +82-31-689-5100	FAX +82-31-495-5659	
	690-11, Seonggok-dong, Danwon-gu, Ansan-si, Gyeonggi-do, Korea			
<b>VIETNAM</b>	Ha nam Plant / ILJIN DIAMOND VINA	TEL +912-065-473	E-mail dia@iljin.co.kr	
	Lot Cn03, Dong Van IV Industrial Park, Dai Cuong Commune, Kim Bang District, Hanam Province, Vietnam			
<b>EUROPE</b>	ILJIN EUROPE GmbH.	TEL +49-6196-88759-0	FAX +49-6196-88759-20	E-mail diaeu@iljin.co.kr
	Koelner Strasse 3, 65760 Eschborn, Germany			
<b>JAPAN</b>	ILJIN JAPAN Co., Ltd.	TEL +81-3-5405-2820	FAX +81-3-5405-3577	E-mail diajp@iljin.co.kr
	Hamamatsucho General B/L 7F, 2-2-15, Hamamatsu-cho, Minato-ku, Tokyo, 105-0013, Japan			
<b>AMERICAS</b>	ILJIN USA Inc.	TEL +1-281-448-5111	FAX +1-281-448-5114	E-mail diausa@iljin.co.kr
	15995 N. Barkers Landing Rd. #310, Houston TX 77079, USA			
<b>CHINA</b>	ILJIN CHINA Co., Ltd.	TEL +86-21-61268711	FAX +86-21-61268713	E-mail diachina@iljin.co.kr
	3F-C, BaoNa B/D(LP Tower), NC.25, Xianfeng ST., Minhang District, Shanghai, 201103, China			

**ILJIN** Diamond [www.ILJINDIAMOND.com](http://www.ILJINDIAMOND.com)

# MD

for PCB drill , PCB router, Micro cutting tool

Grade	Density (g/cm <sup>3</sup> )	Hardness		TRS (MPa)	WC (μm)	Co (%)	Application	Diameter (mm)
		HV	HRA					
N810A	14.47	1,960	93.9	4,400	0.3	8.2	PCB Micro Drill : Ø0.1~0.4	Ø1.0~2.1
M710	14.61	1,930	93.8	4,100	0.5	7.5	PCB Micro Drill : > Ø0.4	Ø1.0~2.1
HF6S+	14.85	1,990	94.0	3,400	0.5	6.0	PCB Router & End mill	Ø3.25

# EDR

for Endmill, Drill, Reamer

Grade	Density (g/cm <sup>3</sup> )	Hardness		TRS (MPa)	WC (μm)	Co (%)	Application	Diameter (mm)
		HV	HRA					
EP8	14.6	1,800	93.2	3,700	0.5	8.0	End Mill, Drill, Reamer HRC > 50 Steel, Cast iron, Dental Bur Al & Non-ferrous metal, Graphite	Ø3.2~30.2
EP10	14.4	1,620	92.0	3,500	0.6	10.0	End Mill, Drill, Reamer HRC < 50 Steel, Cast iron, Stainless steel, Al & Non-ferrous metal, Dental Bur	Ø3.2~30.2
EP12	14.2	1,700	92.5	3,600	0.5	12.0	End Mill, Drill, Reamer HRC < 45 Steel, Cast iron, Stainless steel, Al & Non-ferrous metal	Ø3.2~30.2
TH608	14.70	1,790	92.8	3,100	0.8	6.0	End Mill & Drill for CVD Diamond Coating CFRP & Graphite (Non-ferrous & Non-metal materials)	Ø3.2~30.2
TH1008	14.40	1,590	91.8	3,800	0.8	10.0	End Mill, Drill, Reamer HRC < 45 Steel, Ti alloy, Inconel, Stainless steel, Al & Non-ferrous metal	Ø3.2~30.2
N810A	14.47	1,960	93.9	4,400	0.3	8.2	End Mill, Reamer HRC > 50 Steel	Ø3.2~30.2

# TH1008

Tungsten Carbide Rod for Tough Workpiece Materials

End Mill Test Test under severe condition

※ Vertical Type MCT

	Stainless Steel 304	Inconel 718	Ti-6Al-4V
Spindle speed	1,900 rpm	700 rpm	1,900 rpm
Cutting speed	71.6 m/min	26.4 m/min	71.6 m/min
Feed	456 mm/min	110 mm/min	456 mm/min
Per tooth	0.06 mm/tooth	0.04 mm/tooth	0.06 mm/tooth
Coolant	water solubility	water solubility	water solubility
Type of cutting / Cutting depth	Fluting / 6 mm	Fluting / 2.4 mm	Fluting / 6 mm
Overhang / Sample size	35 mm / 12Øx75	35 mm / 12Øx75	35 mm / 12Øx75

TH1008  
Tool A  
Tool B

TH1008  
Tool A  
Tool B

TH1008  
Tool A  
Tool B

# TH608

A carbide grade specially developed for diamond coatings

Run Out

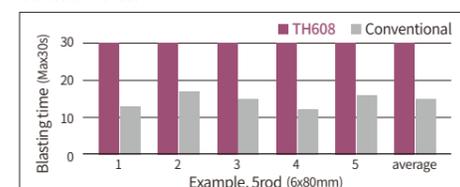
Comparison Test of Run Out with 3 Coating Companies

3 Carbide Materials	3 Coating Companies		
	Com.A	Com.B	Com.C
Average Run Out (μm)	1.8	1.7	2.7
Tool A	3.0	1.8	4.0
Tool B	16.0	2.0	2.6

TH608 shows the best run-out after diamond coating

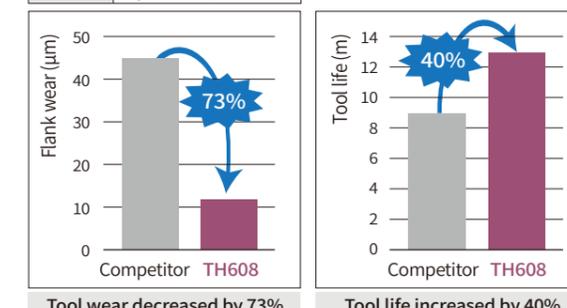
Adhesion Force

With diamond coating, TH608 demonstrates distinguished adhesion force.



Performance Evaluation Result

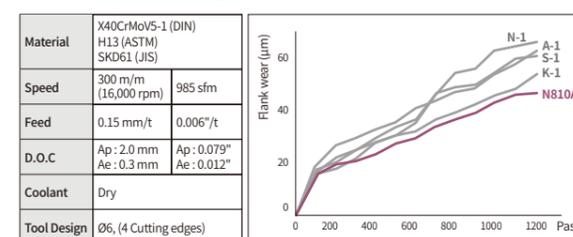
Tool	End-mill Ø 10, 6F	Tool	Solid drill Ø 6.38
Workpiece	CFRP	Workpiece	CFRP
Speed	200 m/min	Speed	120 m/min / 390 sfm
Feed	0.077 mm/t / 0.003"/t	Feed	0.07 mm/rev / 0.003"/rev
D.O.C	Ap: 10 mm / Ae: 0.2 mm	D.O.C	12.7 mm / 0.5"
Coolant	Dry	Coolant	Dry



# N810A

An ultrafine carbide grade for hardened steel and other materials

Performance Test 1



Performance Test 2

