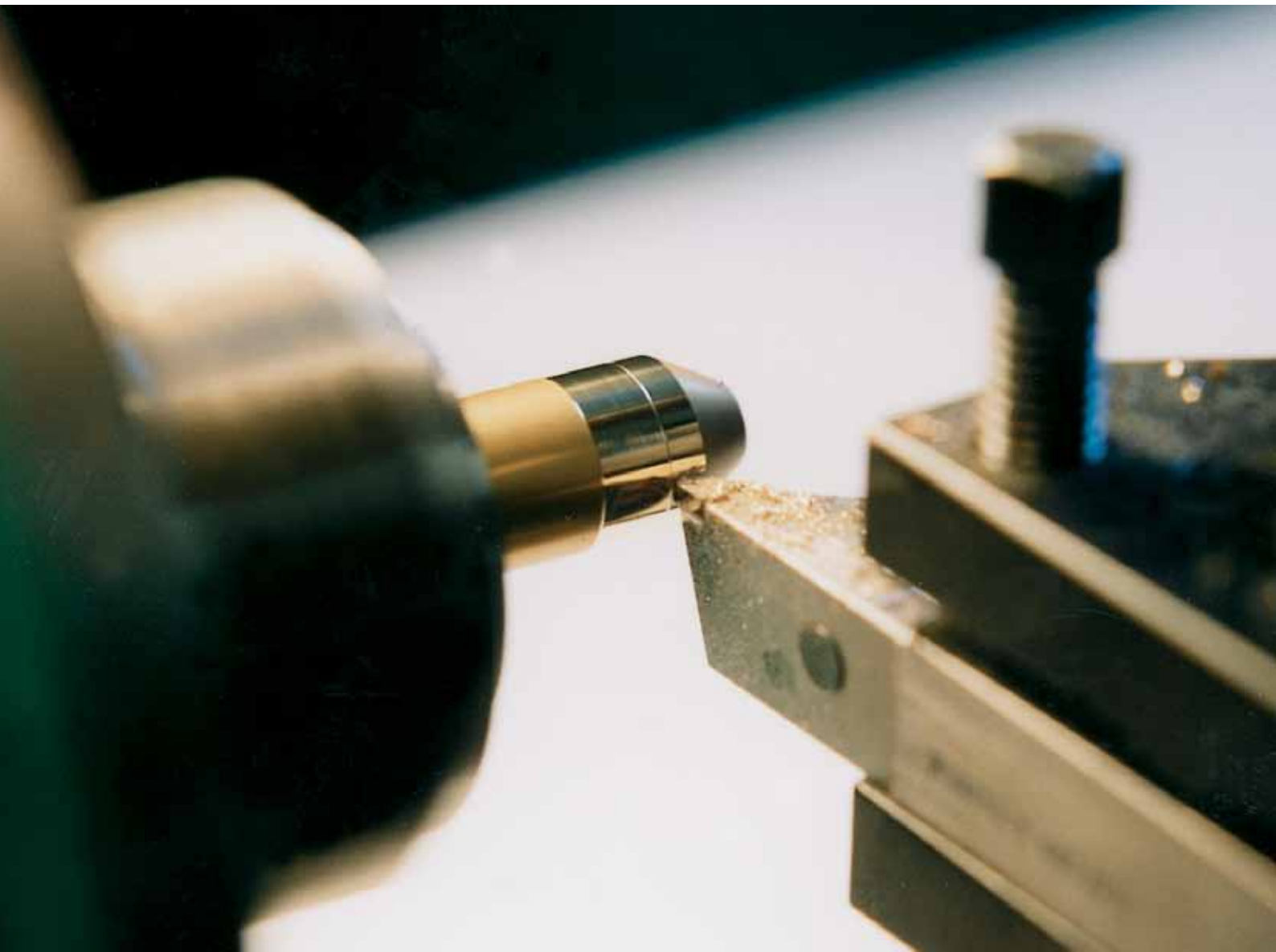


The Mono Series

SINGLE CRYSTAL DIAMOND SOLUTIONS



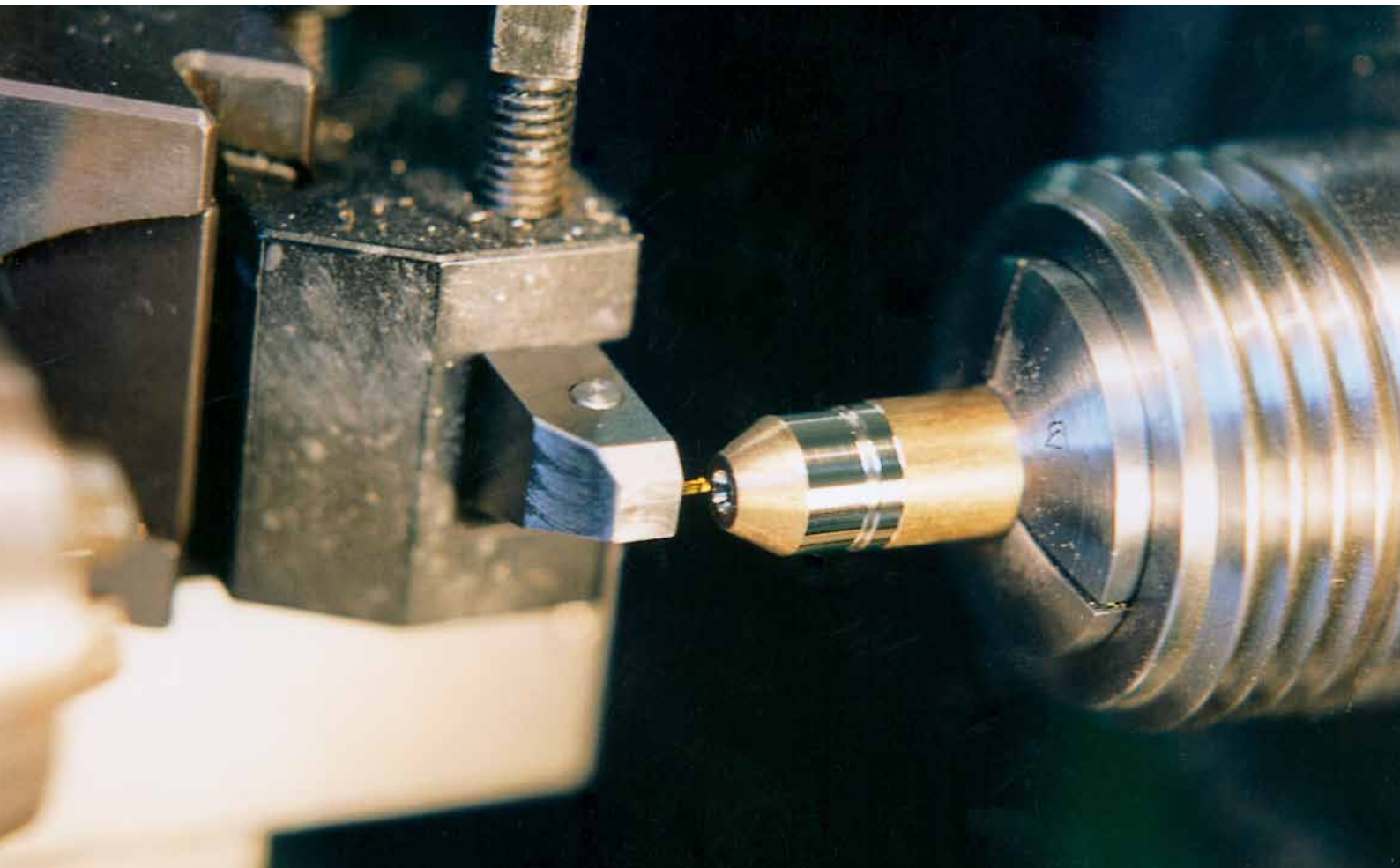
Introduction

The Mono Series is a range of single crystal synthetic diamond products manufactured by Element Six using its advanced diamond synthesis processes, chemical vapour deposition (CVD) and high-pressure, high-temperature (HPHT) synthesis. The material is subject to tightly controlled growth conditions during manufacturing and equally stringent quality control procedures.



The result of production is single crystal synthetic diamond, an engineered material that is highly consistent and has predictable properties and behaviour required for cutting tool, wire drawing and dressing applications. By contrast, natural diamond material varies significantly in key properties and requires careful selection.

For the toolmaker, Element Six offers an unrivalled choice of synthetic diamond products for precision engineering applications, each being a competitive material with guaranteed performance. Each of the Mono Series has been tailored to meet the specific requirements of each application area.

The Mono Series comprises the families, Monodite for cutting tool applications, Monodie for wire drawing and Monodress for dressing tools.



Single Crystal Diamond Solutions

GENERIC APPLICATION	PRIMARY APPLICATION	PRODUCT RANGE	CRYSTAL GROWTH PROCESS	
Cutting Tools & Wear Parts	Ultraprecision machining acrylics, copper, germanium. Generates very high surface finishes.	MCC110	CVD Colourless (Low nitrogen content)	
		MCC100		
	Long edge length requirements (e.g. profile tools)	MSP	HPHT Pale Yellow (Medium nitrogen content)	
	Long edge length requirements (e.g. controlled waviness tools)	MLP		
	Engineered cutting tools and wear parts for superfinishing, burnishing and wire guides. Convenient cut shapes.	MT L(Rectangle) MT T (Triangle) MT R (Round)		
	Superfinishing and precision machining e.g. precious metals and woodworking	MXP		
MWS				
MWS PT2				
Dressing	Single point, multi-point, blade, roller and rotary dressing	MDL		
	Chisel dressing / chisel form dressing	MM111		
Wire Drawing	Wire drawing of ferrous, non ferrous precious and refractory metals.	MD111		

The Mono Series - a product range to suit all single crystal diamond applications

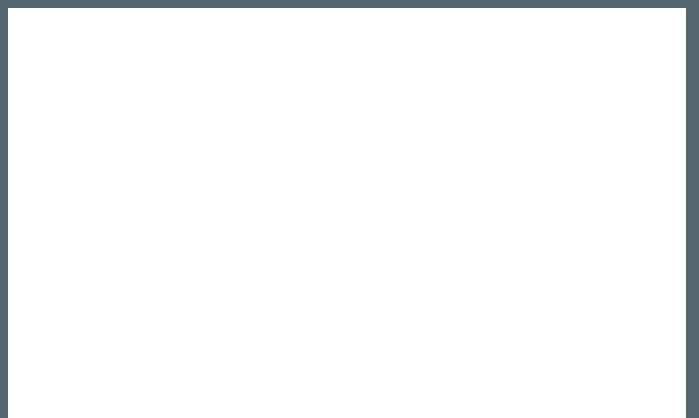
PRODUCT FAMILY	KEY PRODUCT FEATURES	ORIENTATION	SHAPE AVAILABILITY	SIZE RANGE	FORMAT
MONODITE	Premium product having a unique combination of high wear and very high thermal conductivity.	2 pt / (110) plates	Primarily rectangles, also squares, triangles and circles	Typically up to 5 mm	Polished plates with precise laser cut edges
		4 pt / (100) plates			
	Individually priced large edge length plates available through www.e6mono.com	Primarily 4 pt / (100) plates. Some 2 pt / (110) plates	Basically square	5 to 12 mm	Large sawn plates for individual selection with optional laser cutting service
	Long edge length polished near rectangular logs	4 pt / (100) plates	Near rectangular	One guaranteed edge length 5 to 8.5 mm	Large polished near rectangular plates having one full guaranteed edge length
	Highly engineered polished plates, laser cut to specific dimensions.	4 pt / (100) plates	Primarily rectangles, also squares, triangles and circles	Typically up to 8 mm edge length & 2 mm thickness	Polished plates with precise laser cut edges
	Near rectangular plates having guaranteed inscribed square	4 pt / (100) plates	Near square	2 to 5 mm edge length and up to 1.5 mm thickness	Inscribed square size $\geq 75\%$ of edge length
	Near rectangular plates having guaranteed inscribed circle				Inscribed circle diameter $\geq 80\%$ of edge length
Engineered polished plates benefiting from 2 point orientation	2pt / (110) plates	Near rectangular	Typically up to 3 - 4 mm edge length up to 1.5 mm thickness	Polished plates	
MONODRESS	Designed for abrasive wear resistance in dressing and parting tool applications. Good thermal stability	4 pt / (100) plates	Rectangular logs and squares	Standard sizes 2.5 to 5.0 mm in length	Polished squares or rectangles with precisely laser cut edges
	Alternative to natural diamond macles	3 pt / (111) plates	Triangular / macle shaped	3.0 to 6.0 mm	Polished macle plates
MONODIE	Wire Drawing die blanks with specific quality controlled inscribed circle. Exceptional wear resistance due to 3 pt crystal orientation.	3 pt / (111) plates	Hexagonal polyhedra	0.5 mm to 2.0 mm high	Polished die blanks having a guaranteed usable inner volume and a usable inscribed circle to height ratio

Notes



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