

Material Solution for
Oil and Gas Drilling

IPDC

ILJIN Polycrystalline Diamond Compact

- Higher Impact Resistance
- Superior Wear Resistance
 - Lower Residual Stress
 - Reduced drilling costs
 - Extensive Durability

ILJIN Diamond

Challenge & Innovation



IPDC



ILJIN Polycrystalline Diamond Compact

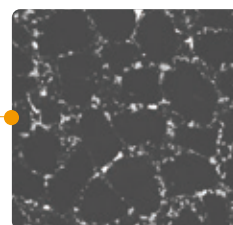
For decades, ILJIN Diamond has been producing top quality superhard materials including synthetic diamonds. As a result of the unceasing technological innovation and accumulative experience, ILJIN Diamond presents IPDC for the utmost drill bit performance. Oil and gas industry will be able to save cost and foster production by the use of IPDC.



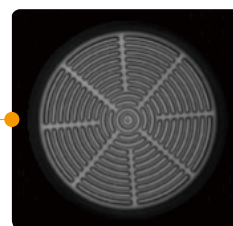
Diamond Table

Interface

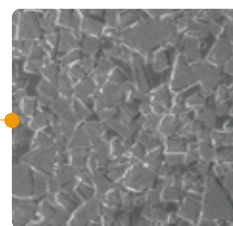
Substrate



The uniform bonding and high density of diamond particles attribute to ILJIN's advanced HPHT technology.

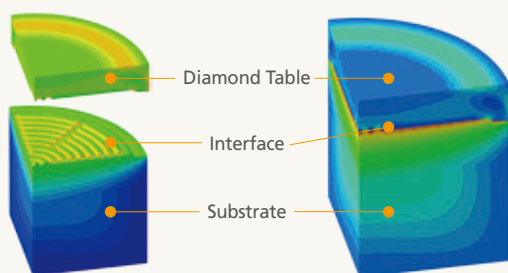


The carbide interface was designed by FEM simulation to optimize residual stress and strain.



The carbide substrate keeps the diamond layer strong when the PDC is brazed to the drill bit body.

Simulation Image

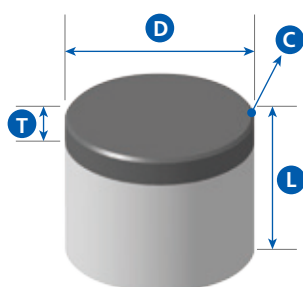


Diamond Table

Interface

Substrate

Size Availability



Grade	13	16	STD	(C0.3)	
Grade	Product size D+L			Diamond table thickness T	Diamond chamfer length C
Wear resistance Grade	1308	1313	1316	STD 2.0mm	C0.2 0.2mm
Impact resistance Grade	1608	1613	1616	15 1.5 mm	C0.3 0.3mm
Balance Grade	1913	1916	1919	23 2.3mm	C0.4 0.4mm
Standard Carbide Chamfer is 0.6mm				25 2.5mm	

* The specification and design of IPDC can be customized to satisfy the customers' request.

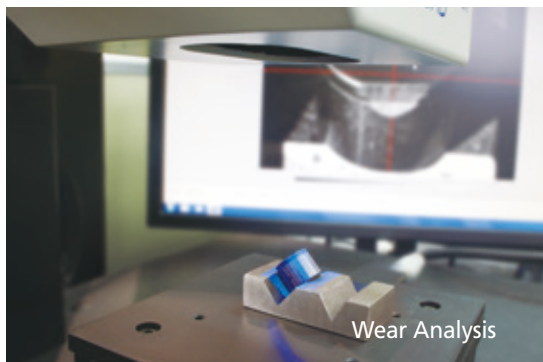


Performance Evaluation

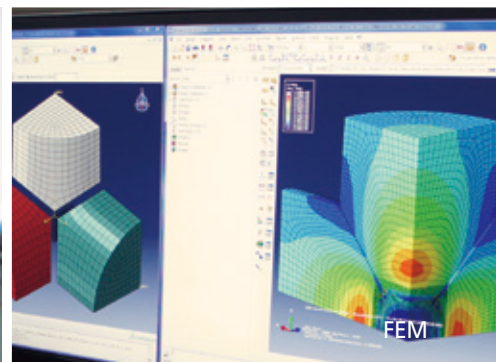
At ILJIN Diamond, quality consistency and reproducibility are assured by multiple quality control systems. Furthermore, innovative development of



Abrasion Resistance (VTL)



Wear Analysis



FEM

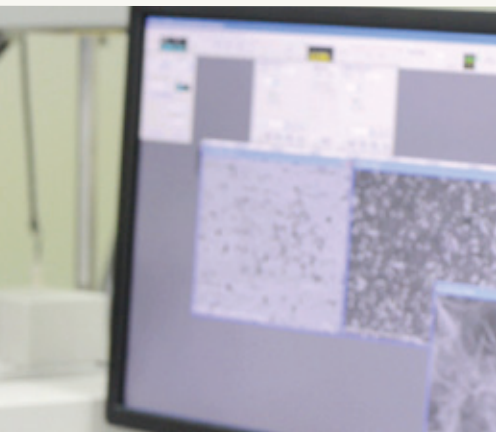
Quality Control

Quality Management

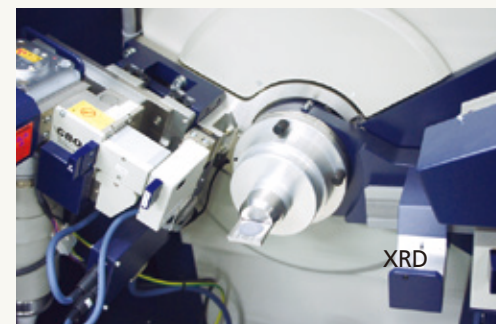
The quality management of ILJIN Diamond begins with each employee's comprehensive understanding and awareness of his or her influence on the company and customers. With this understanding in spirit, employees at ILJIN Diamond apply relentless effort to every stage of the multi level quality control procedure. In addition, we have a rigorous quality analysis system by which potential quality issues are identified and addressed from an early stage. The achievement of ISO9001 certification, quality affirming field test results, and satisfactory feedbacks from our customers reflect our genuine effort and the leading edge system.

Customer Oriented Action

Orienting the resource and ideas to the needs of customers has been a tradition and a key philosophy of ILJIN Diamond. In every level of the operation, major subject matters are evaluated and processed from the customers' perspective. This culture of customer oriented ideas and action is the foundation of our exceptional quality and service, and the means to earning constant trust from customers. When it comes to customers, our commitment is bolstered to the greatest extent.



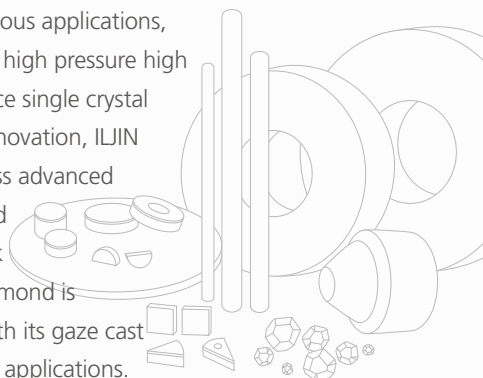
C-scan



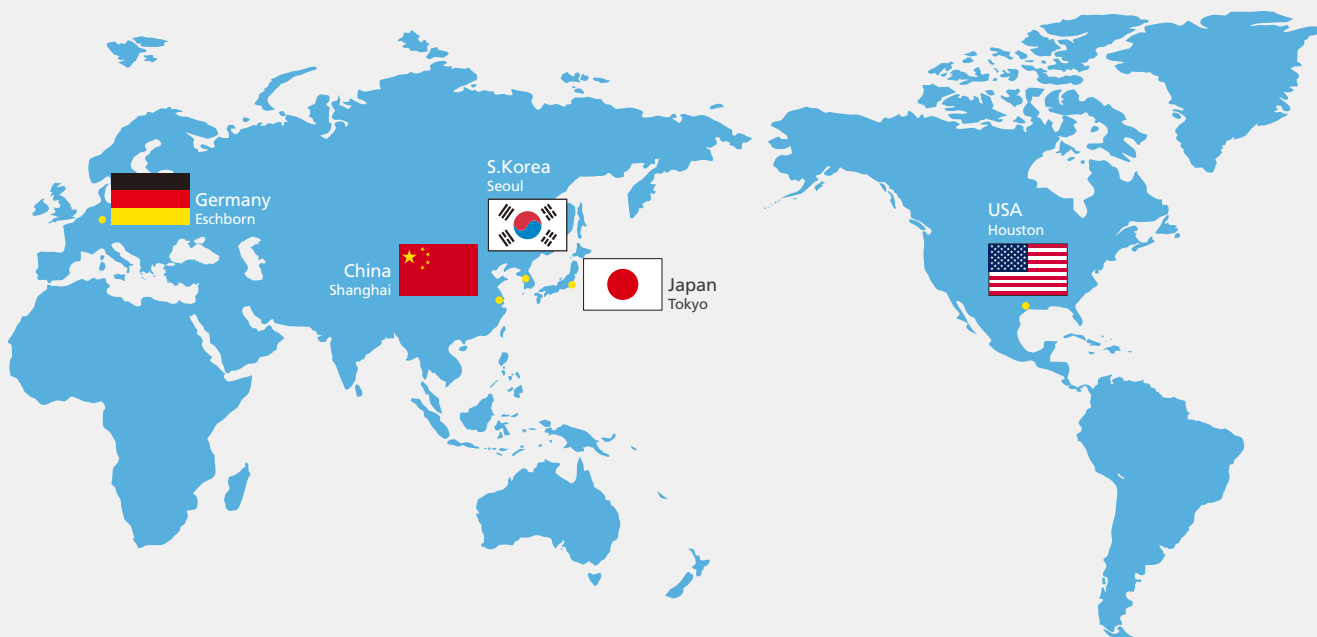
XRD

Meet ILJIN Diamond

With the vision to provide solutions for processing superhard materials in various applications, ILJIN Diamond was established in 1988. Upon the successful development of high pressure high temperature technology, ILJIN Diamond became the third company to produce single crystal diamond in the history of synthetic diamond. Thereafter through constant innovation, ILJIN Diamond has been expanding its synthetic diamond technology to encompass advanced sintering technology, cutting edge skill of processing superhard materials, and authentic system of quality control. With the profound technological bedrock that emanates from over 25 years of synthetic diamond experience, ILJIN Diamond is exuding its presence wherever superhard material solution is on demand. With its gaze cast forward, ILJIN Diamond is speculating on the endless possibilities of diamond applications.



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