



ENERGY



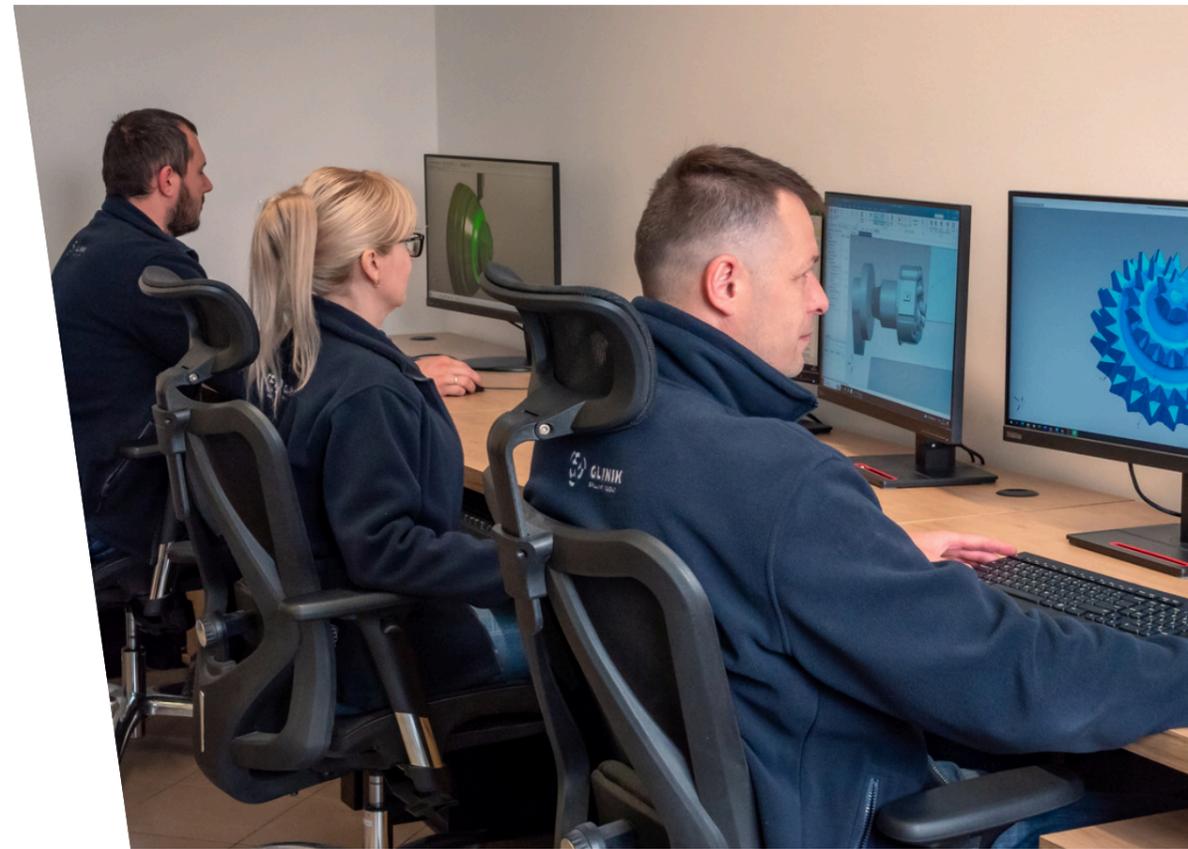
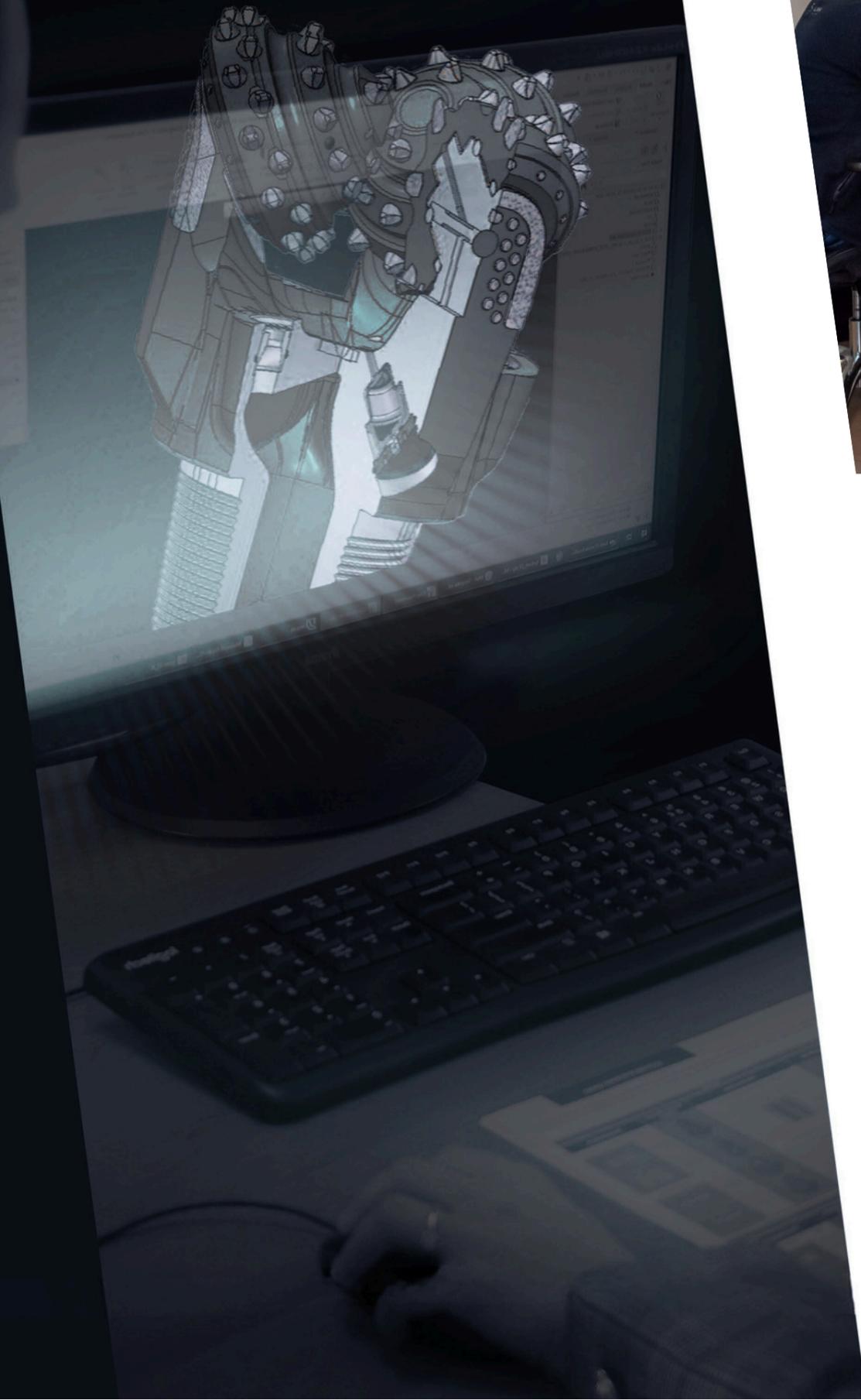
The API certificate confirms that Glinik's manufacturing processes meet the highest industry standards for drilling tool production. Manufacturing is carried out under controlled technological procedures, quality assurance systems, and strict compliance with international standards. This approach ensures parameter consistency, reliability, and operational safety.

With extensive experience in the design and production of drilling tools, Glinik maintains stable relationships with energy sector Clients worldwide, supporting demanding oil and gas projects with proven technical competence.



TECHNICAL INNOVATION

Glinik's Design and Engineering Team develops drilling tools with a focus on precision, durability, and consistent performance. Each stage of production is optimized to ensure repeatable quality and operational reliability.



Glinik's Engineering Team drives continuous product development through advanced research and implementation of modern technologies in drilling tool design.

Advanced technical support is provided to select optimal tools and drilling parameters tailored to specific customer applications.

BEARING SYSTEMS FOR DRILL BITS

Non-sealed roller bearing

Used for bits of 2-3/8" - 42"

A cost-optimized solution designed to deliver stable drilling parameters and full control over operational costs.

Perfect for shorter hole sections where mechanical efficiency and tool cost-effectiveness are key to maximizing performance and profitability.

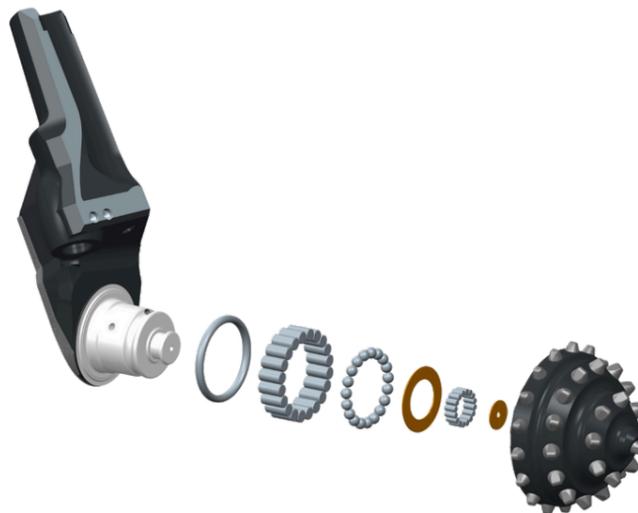


Sealed roller bearing

Used for bits of 5-7/8" - 28"

High-end sealing and lubrication system with pressure compensation extends operating life by effectively protecting the bearings from drilling fluid contamination and debris.

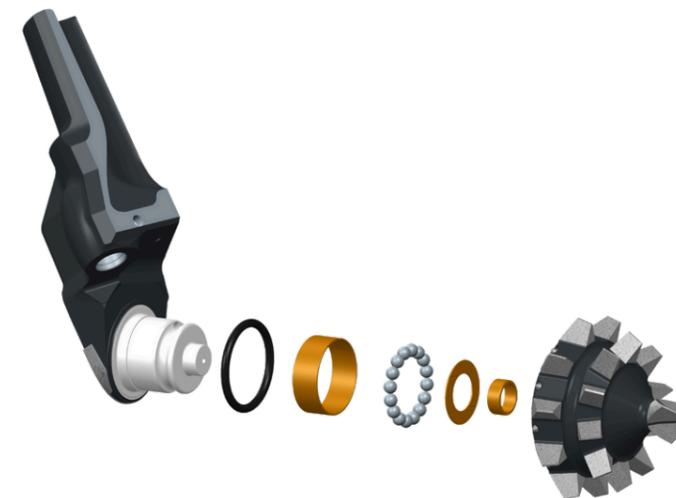
This ensures smooth operation, reduced maintenance, and longer tool service intervals.



Sealed journal bearing

Used for bits of 3-7/8"-17-1/2"

Sealed bits engineered for the toughest drilling conditions, combining exceptional wear resistance with a compensation-based lubrication system to ensure long-lasting, reliable performance even in the most demanding environments.



Nozzle dimensions

Size of the drill bit		D	h	d	
mm	inch	mm	mm	inch	
139,7 ÷ 187,3	5-1/2" ÷ 7-3/8"	20	15,1	4,0; 4,8; 6,4; 7,9; 8,9; 9,5; 11,1; 12,7; 14,3	5; 6; 8; 10; 11; 12; 14; 16; 18
190 ÷ 1066,8	7-1/2" ÷ 42"	33	27	11,1; 11,9; 12,7; 14,3; 15,9; 17,5; 19,0; 20,6; 22,2; 23,8; 25,4	14; 15; 16; 18; 20; 22; 24; 26; 28; 30; 32



HYDRAULIC SYSTEMS FOR DRILL BITS

Central jet hydraulics

Used for bits of 2-3/8" - 42"

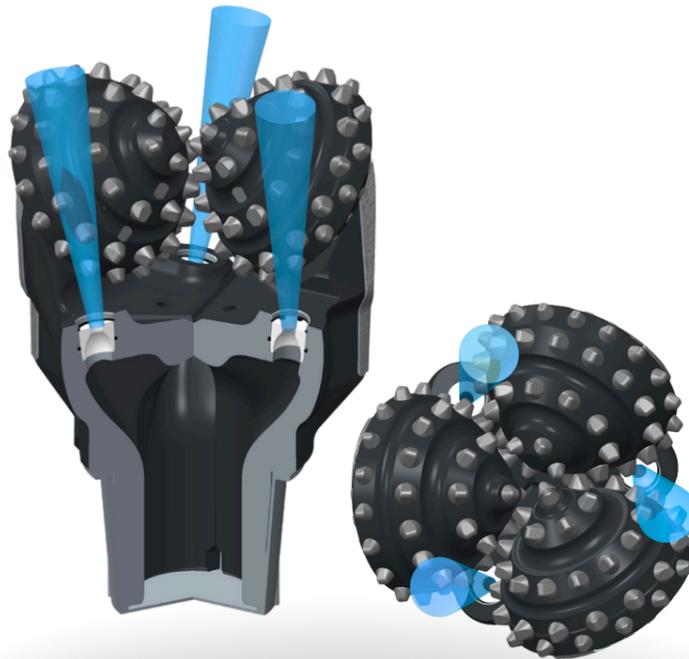
Central jet hydraulics is utilized in bits designed for hydrogeological and geoenvironmental drilling applications. In reverse circulation operations, the bit features a central hole with the largest possible diameter for the given threaded connection, ensuring optimal fluid flow, efficient cuttings removal, and maximum drilling performance.



3-nozzle hydraulics

Used for bits of 3-7/8" - 36"

An optimized nozzle layout and hydraulic flow provides efficient cleaning of both the cutting structure and borehole bottom, ensuring uninterrupted operation and maximum drilling progress.



Multi-nozzle hydraulics

Used for bits of 8-1/2"-42"

An advanced hydraulic system featuring additional nozzle—beyond the standard 3-jet design—delivers superior cleaning of the cutting structure and borehole bottom. This ensures consistent removal of cuttings, stable operating parameters, and sustained high drilling performance.



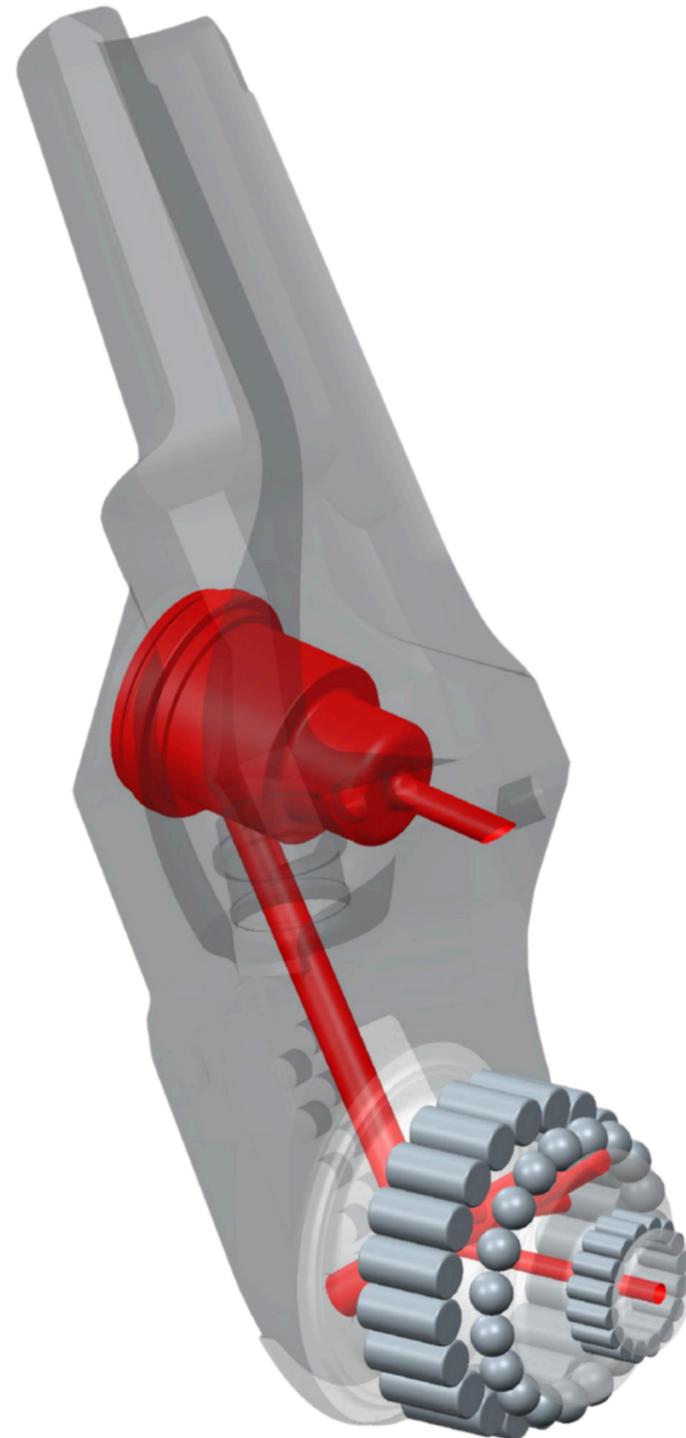
Drill bits are protected with materials of the highest abrasion resistance, applied using methods precisely matched to each surface to ensure maximum durability and extended tool life, even in the most demanding drilling conditions.

Plasma Transferred Arc Welding (PTAW) technology ensures consistent, high-quality bonding and exceptional wear resistance for extended tool life.

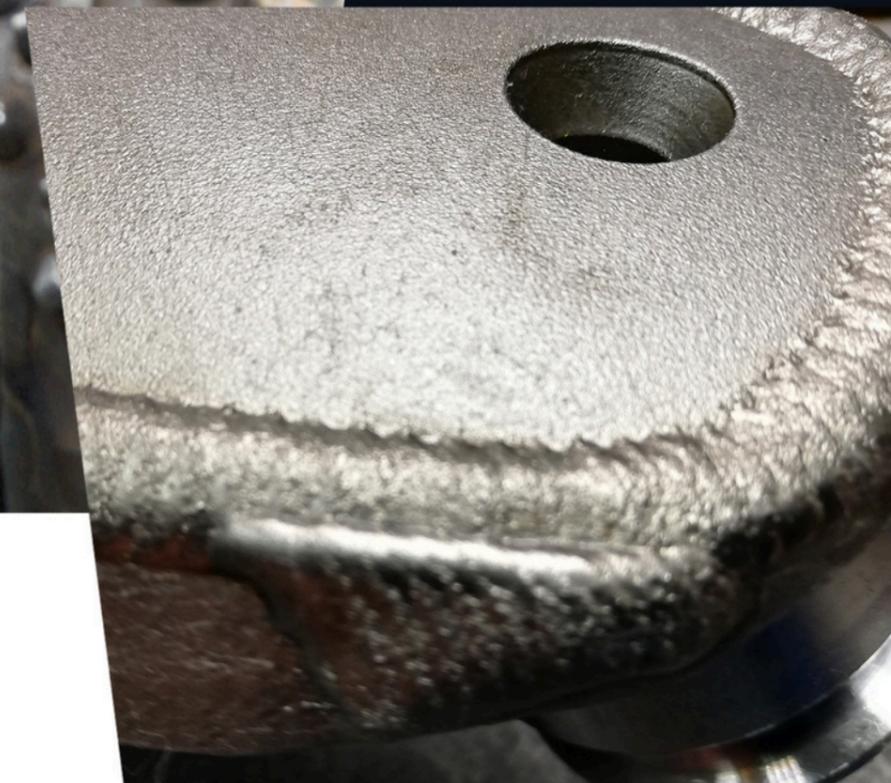


The patented compensation system continuously supplies grease to every bearing component, maintaining constant internal pressure for smooth, efficient, and reliable drill bearing performance throughout the entire drilling process.

Precisely engineered lubrication channels distribute grease to every rolling component, ensuring optimal bearing performance, while a high-quality seal prevents drilling fluid intrusion—protecting the bearings and eliminating the risk of bit failure.



PROTECTION OF DIAMETER AND CUTTING STRUCTURE



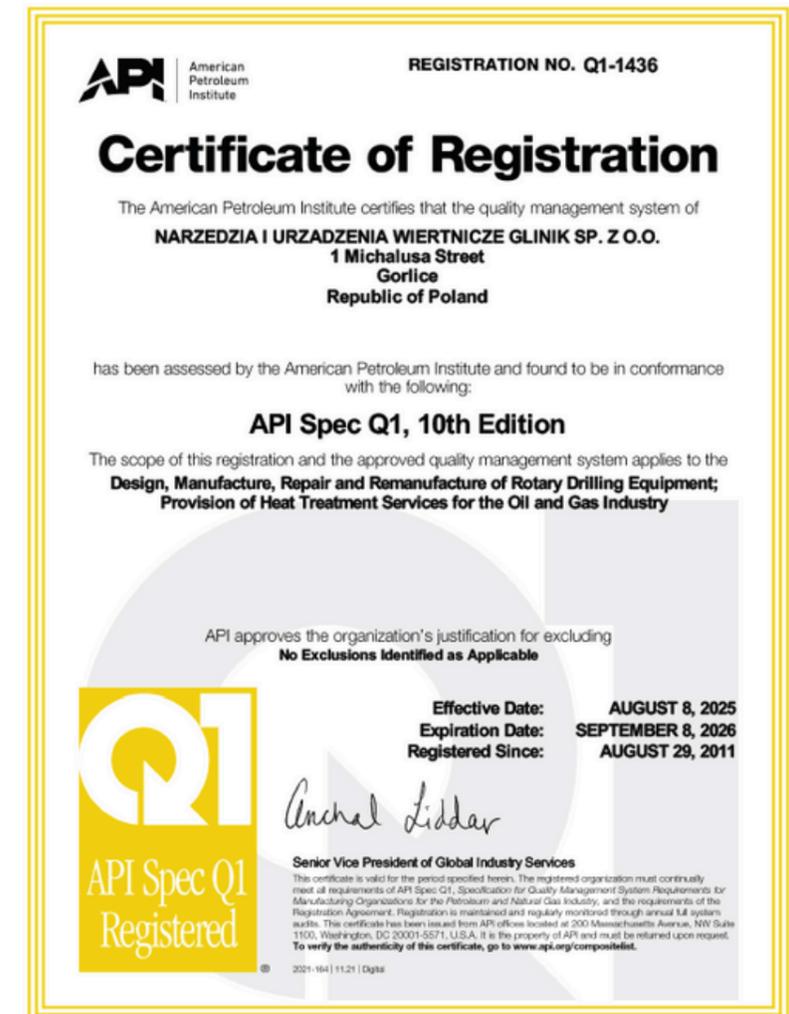
CERTIFICATES

With API Q1 and ISO 9001 certifications, Glinik operates under the most rigorous quality management standards, ensuring excellence at every stage — from design and manufacturing to repair and refurbishment of drilling tools. Our commitment to quality guarantees reliability and performance you can trust in every application.

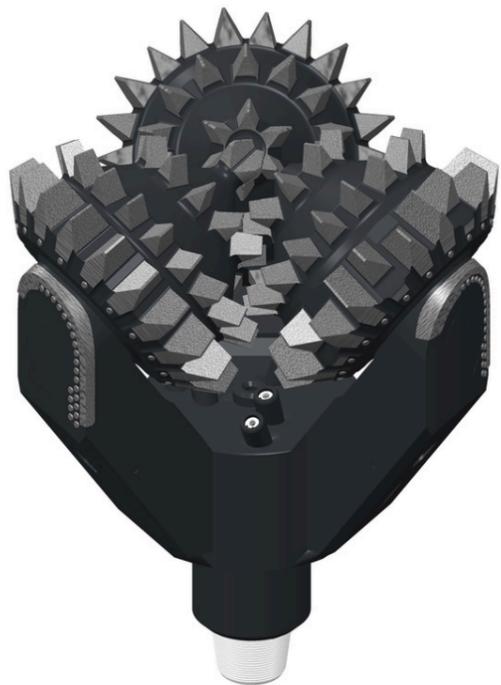
Glinik holds the license to apply the API Monogram to stabilizers, threaded rotary connections, PDC bits, 3-cutter bits, and connectors — all fully compliant with API Q1 and Spec 7-1 requirements. This certification confirms our commitment to the highest industry standards and guarantees consistent quality, precision, and reliability of every product we deliver.



At Glinik, continuous process improvement within our advanced Quality Management System allows us to not only meet but consistently exceed the most demanding customer requirements—delivering products that combine precision, reliability, and superior performance.



SOFT FORMATION SAMPLE DRILL BITS



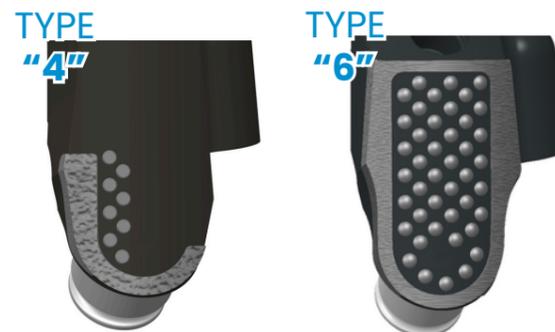
42"
IADC 115

CUTTING STRUCTURE

High prismatic posts with precisely positioned inserts enable faster drilling of long intervals with outstanding stability. A wide selection of inserts allows for optimal customization of cutting structure, while bit geometry is refined through advanced 3D simulation to achieve maximum efficiency and penetration rate.

LEG BACK PROTECTION TYPES

Glinik leg back type "4" and type "6" design for extended tool life, and reliable performance in abrasive formations.



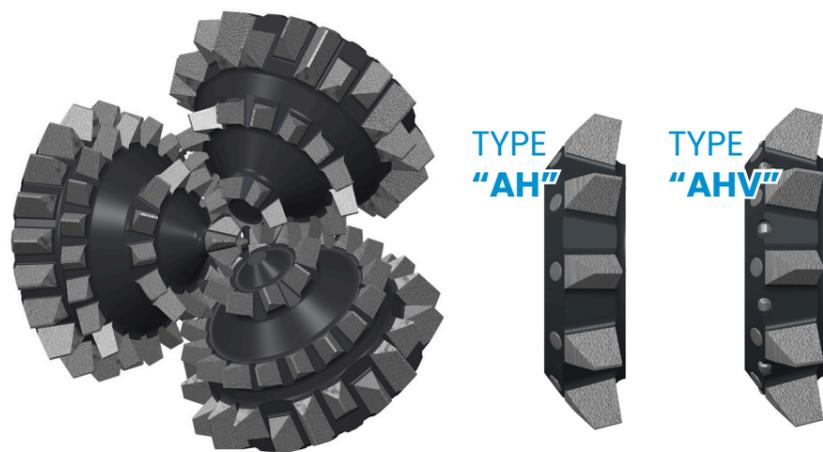
 wide range of diameters 4" (101,6mm) to 42" (1066,8mm)

12-1/2"
IADC 437



CUTTING STRUCTURE

The bit features tall teeth with a small sharpening angle, their placement and geometry optimized through 3D simulation. Tungsten carbide hardfacing provides wear protection, while additional carbide inserts on the bit surface prevent diameter loss. Optimized nozzle layout and drilling fluid flow ensure effective cleaning of the cutting structure, delivering maximum rate of penetration (ROP).



 Bits customisation available



 Tools consultation available

MEDIUM FORMATION SAMPLE DRILL BITS



17-1/2"
IADC 215

CUTTING STRUCTURE:

A cost-efficient solution designed to deliver stable drilling performance and full control over operational expenses. Ideal for shorter hole sections where mechanical efficiency, durability, and tool cost-effectiveness are key to achieve maximum productivity and reduced total drilling costs.



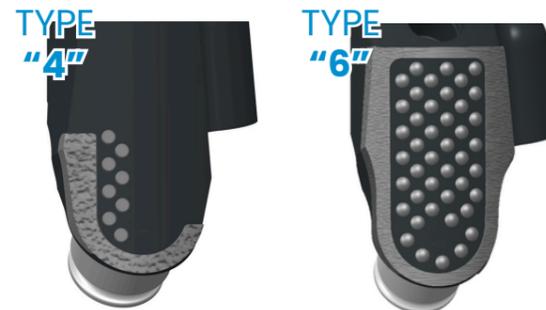
8-1/2"
IADC 637

CUTTING STRUCTURE:

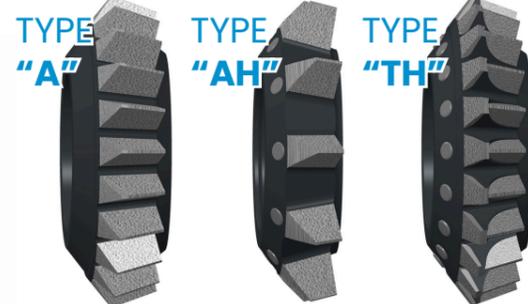
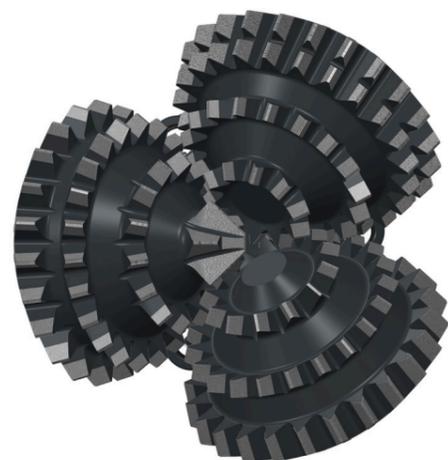
High prismatic inserts with increased height and diameter, combined with a significant bit axis offset, deliver exceptional mechanical drilling speed and cutting efficiency. The large sharpening angle reinforces the cutting structure, minimizing the risk of insert breakage and maintaining the bit's outer diameter –ensuring consistent performance and extended service life.

LEG BACK PROTECTION TYPES

Glinik leg back type "4" and type "6" design for extended tool life, and reliable performance in abrasive formations.



 wide range of diameters 4" (101,6mm) to 42" (1066,8mm)



 Bits customisation available



 Tools consultation available



HARD FORMATION SAMPLE DRILL BITS



9-7/8"
IADC 315

CUTTING STRUCTURE:

Short teeth with a large sharpening angle and tight spacing ensure efficient, aggressive cutting in hard formations. The border flange teeth are equipped with calibration surfaces and tungsten carbide inserts, delivering exceptional durability and protecting the bit from diameter loss and maintaining consistent performance even in highly abrasive rock conditions.

LEG BACK PROTECTION TYPES

Glinik leg back type "4" and type "6" design for extended tool life, and reliable performance in abrasive formations.



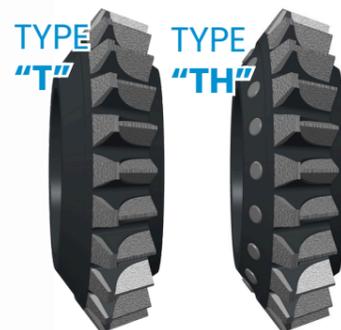
 wide range of diameters 4" (101,6mm) to 42" (1066,8mm)

8-1/2"
IADC 737



CUTTING STRUCTURE:

A high number of low posts, a wide sharpening angle, and short insert spacing create optimal conditions for efficient hard rock drilling. Minimal bit axis displacement reduces stress on the inserts, preventing breakage, while reinforced bit surfaces with multiple carbide inserts ensure exceptional durability and maintain diameter stability throughout the bit's entire service life.



 Bits customisation available



 Tools consultation available



KEY FEATURES OF PDC DRILL BITS

Shock bumpers for improved impact resistance, torque limitation & reduced vibration

Optimal **cutters layout & force balancing** for high stability and ROP

LaserC Robot Hardfacing for improved erosion resistance confirmed with field testing

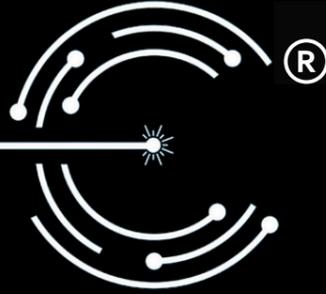
Nozzle placement for optimized hydraulics

HF and TC inserts for strong gauge protection

Steel body with high open face volume for optimized cleaning





LASER 

LASER METAL DEPOSITION TECHNOLOGY

LaserC[®] is modern additive manufacturing process, successfully implemented by Glinik Drilling Tools. Utilizing a high-power laser, metallic or metal-ceramic powder is precisely melted and deposited to create exceptionally durable and accurate structures.

This advanced technology enables the production of highly abrasion-resistant coatings that significantly enhance the bit's durability and performance.

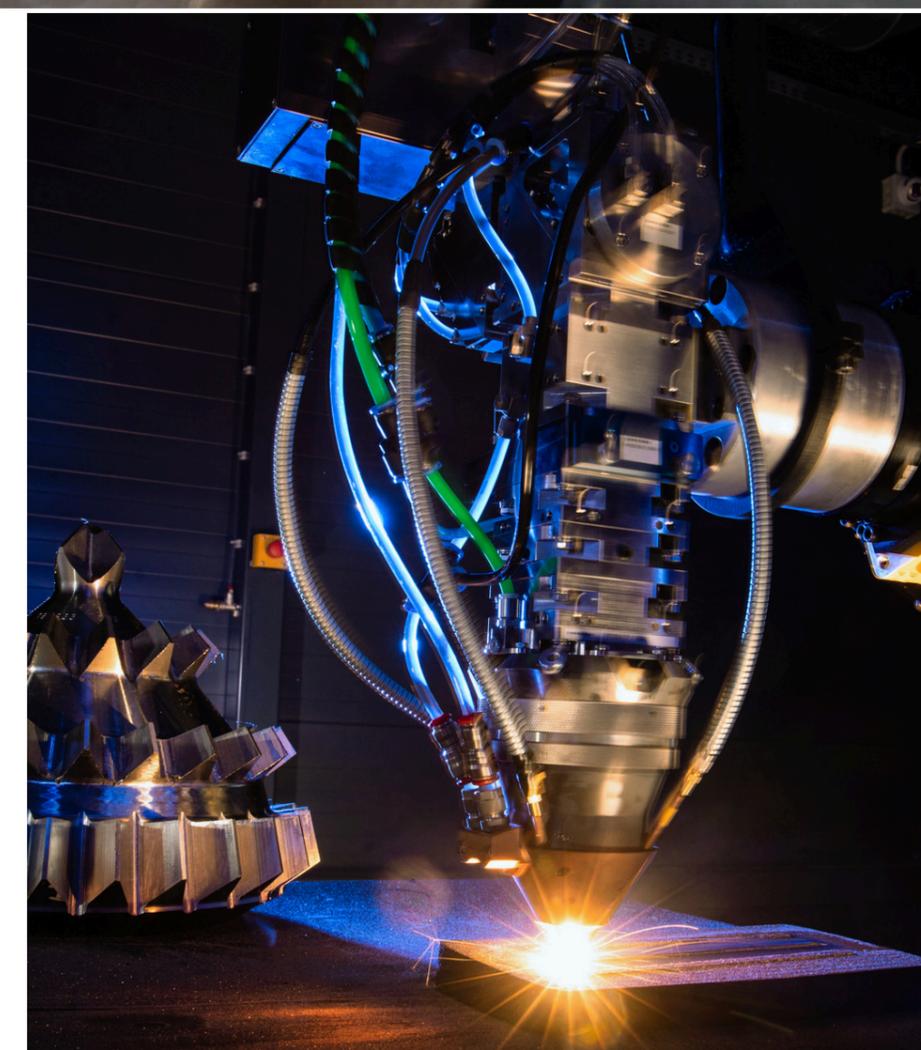
Applying this protective layer also allows for effective regeneration of worn parts, restoring full operational capability and extending their service life far beyond standard limits.





LASER TECHNOLOGY ALONG WITH PRECISE PROCESS PARAMETER CONTROL

- ✓ Precise welding of components with complex geometries, including those with small cross-sections and intricate shapes.
- ✓ The ability to utilize a wide range of materials such as metals, metal alloys, and metal-ceramic composites.
- ✓ Multi material technology.
- ✓ 3D modeling-based process simulation, enabling detailed planning, easy implementation of design modifications, and greater flexibility in introducing new projects to production.
- ✓ A high level of process automation, repeatability and 4x more abrasion resistant hard facing than manually applied one



KEY HIGHLIGHTS 12¼" PDC DRILL BIT – FRANCE

5-blade, single-row PDC bit Steel body construction



Application

- Salt brine extraction campaigns
- Engineered to excel in formations such as clays, silts, and limestones, with occasional mica, pyrite, and ochre inclusions

Technical Achievements

- Fulfilled directional objectives
- Drilled full section from shoe to TD
- With notable ROP of 26,5 m/h on average

TOTAL METERS DRILLED
1622

DRILLING HOURS
61,3

BIT DULL GRADING
3-2-BT-N/S-X-I-WT-TD



Operational Challenge

- Drill-out of cement plug with float shoe
- Lower WOB hence ROP limited due to hole cleaning issues
- Local appearance of pyrite throughout section

Follow-up Action

- Prepared for reuse in the next well



KEY HIGHLIGHTS 12¼" PDC DRILL BIT – LIBYA

New Performance Benchmark in Elsharara Field, Block NC186

Application

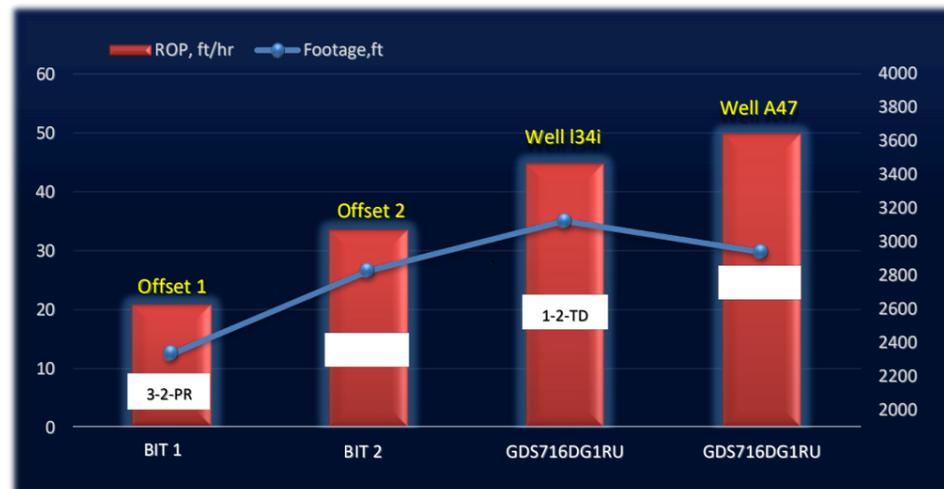
The geological diversity of the Libyan terrain includes a wide range of formations such as Dembaba, Assedjefar, Upper & Lower Marar, Awaunat Wanin, BDS II, BD Shale, BDS I, Tanezzuft, Mamuniyat, and Melez Shugran. Such heterogeneity requires drilling operations to use tools with high wear resistance and precisely optimized operating parameters.

Objectives:

- To improve performance in the field.
- To reach planned TD in one run.
- Maintain and keep the bit in good condition.

Challenges:

- Expected of lateral vibration.
- Low ROP while drilling in interbedded formation.
- Limited rig pump capacity.
- Torque limitations.



Results:

- Drilled to TD in one run (2999 drilled feet).
- New ROP performance benchmark; ROP 49.9 ft/hr.
- Bit pulled out in excellent condition; 1-1-WT-G-X-CT-TD.
- Both ROP and dull grading showed clear improvement after the second run of our PDC bit, that indicating better overall efficiency.
- 10.4% ROP improvement vs previous run.
- 33% ROP improvement vs best offset top.
- Bit can be re-run to drill new section.
- 2000



22" BM1HXC, IADC 115

An emergency call-off for the RC bit to the O&G running project. Despite the balling effect the bit reached the final depth with very low degree of wear-off. After the work the RC bit remains in re-runable shape.

DRILLING PERFORMANCE

- Total meters drilled: 892 m
- Drilling hours: 77.1
- Bit dull grading: 1-1-WT-A-0-I-BU-TD

DRILL BIT

- \varnothing 558.08 mm, BM1HXC
- Thread 7-5/8" Reg. API
- Leg back protection type: "4"
- Gauge protection AHV
- 4 jet- hydraulics 20/32" nozzles

NOV. 2023

DATE

POLAND

LOCATION

EXPLORATION

TYPE OF WELL

60-100

RPM

3300-4400 l/m

FLOW RATE



23" IADC 115

DATE APRIL-MAY 2022

LOCATION THE NETHERLANDS

TYPE OF WELL DIRECTIONAL
J-SHAPE

RPM 50-190

FLOW RATE 1500-3800 l/m

DRILLED METERS

1127 M

AVERAGE ROP

14,1 M/H

BIT DULL GRADING

1-1-WT-A-E-0-NO-TD

Total depth achieved with one run thanks to Glinik bit with effective bearing and premium gauge and leg back protection. Drill bit equipped in 4 jet hydraulics allowed for smooth, constant drilling with no bearing overheating risk. No wearing signs on hardfaced surface.





Narzędzia i Urządzenia
Wiertnicze Glinik Sp. z o.o.



info@glinik.com.pl

Sales Department



sales@glinik.com.pl



+48 18 35 49 706
+48 18 35 49 704



www.glinik.com.pl