CHANGKUN GEO

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DRILLING EQUIPMENT SERIES

Exploration Drilling Rigs
Drilling Tools



Company Profile

CHANGKUN GEO

CHANGKUN GEOLOGICAL EXPLORATION CO., LTD.





CHANGKUN GEOLOGICAL EXPLORATION
EMPOWERING
THE WEST AFRICAN MINING INDUSTRY



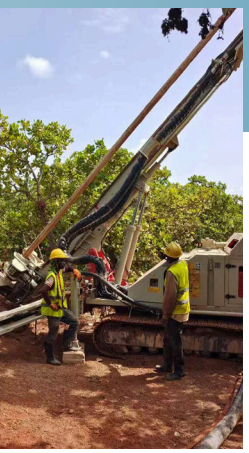
ABOUT CHANGKUN GEO

Changkun Geological Exploration Co., Ltd. was jointly founded by a team of senior geological exploration engineers and senior construction engineers. With long-term engagement in the West African mining market, the company focuses on geological exploration and mining services for gold, bauxite, and other mineral resources, accumulating extensive on-site experience in Guinea and neighboring countries.

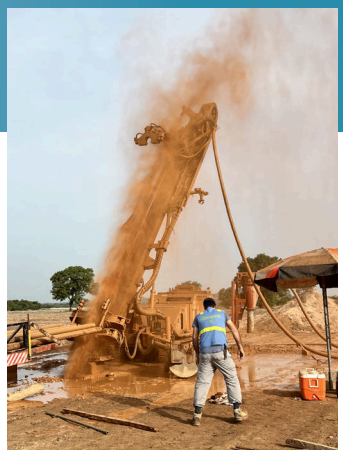
Driven by continuous field exploration practices, Changkun has established an integrated business system covering exploration technical services, drilling rig R&D and manufacturing, drilling tools supply, and supply chain integration. The company has also set up overseas warehouses and localized service bases in West Africa, providing efficient and reliable equipment and technical support for regional mining projects.

Adhering to the core values of Integrity, Professionalism, Innovation, and Service, Changkun continuously optimizes its exploration equipment based on complex geological conditions and real operational demands. The company is committed to delivering high-quality, high-reliability drilling rigs and complete drilling solutions for mineral exploration.

At present, Changkun has established long-term and stable partnerships with several well-known mining companies across West Africa, forming a systematic and turnkey supply capability for drilling equipment and services. Its products and services have been widely applied in Guinea, Mali, Gambia, Burkina Faso, Ghana, and Sierra Leone, earning strong recognition and trust from clients in real-world operations.









CORE DIAMOND BIT

Core Diamond Bit are manufactured using a stable and proven sintering process, featuring a reliable structure and strong adaptability. They are widely used in geological exploration and core drilling applications.

Matrix heights are available in C6, C9, C12, C15 and C25, allowing flexible selection according to different formation conditions.



The matrix grades adopt the K series configuration, including K1, K3, K5, K7, K9 and K11, suitable for soft, medium-hard and hard complex formations.

Different K grades provide a balanced combination of wear resistance, cutting efficiency and service life, improving drilling efficiency and extending bit lifespan.

SELECTION GUIDE FOR CORE DIAMOND BIT MATRIX

CORE DIAMOND BIT MATRIX SELECTION GUIDE (BASED ON ROCK HARDNESS)

Rock Hardness	Soft Rock	Soft Rock	Soft Rock	Medium Hard Rock	Medium Hard Rock	Medium Hard Rock	Hard Rock	Hard Rock	Extra Hard Rock
Mohs Hardness	1–2.5	3–3.5	4	4.5	5–5.5	6–6.5	7–7.5	8	8.5
K Matrix Grades	K1	K3	K3 / K5	K3 / K5	K5 / K7	K5 / K7 / K9	K7 / K9	K9 / K11	K11
Boart Longyear ALPHA series	—	2	02 06ABR 07ABR	02 06ABR 07ABR	06ABR 07ABR	06ABR 07ABR 08ABR 08COM	08ABR 08COM 09 09COM	09 09COM 10COM	09 09COM 10COM
Boart Longyear UMX series	SSUMX	SSUMX 07UMX	SSUMX 07UMX 09UMX	SSUMX 07UMX 09UMX	SSUMX 07UMX 09UMX	SSUMX 07UMX 09UMX	07UMX 09UMX 10UMX	09UMX 10UMX	09UMX 10UMX
ATLAS	—	3AC	7AC	7AC	7AC, 11AC	11AC	11AC 13AC	13AC	15AC
FORDIA	—	HERO3	HERO7	HERO7	9-11, HERO7	9-11, HERO9	9-11 HERO11	11-14	11-14

CORE DIAMOND BIT MATRIX MATCHING GUIDE (BASED ON MATRIX HARDNESS & DRILLING CONDITIONS)

Bit Matrix	K1	K3	K5	K7	K9	K11
Matrix Hardness	HRC54	HRC42	HRC30	HRC18	HRC06	HRC00
Rock Hardness	Select K1 in case of low working life of K3	Soft Rock → Medium Hard Rock → Hard Rock				Select K11 without footage of K9
Grain Size		Large Grain ← Medium Grain ← Fine Grain				
Rock Breakage		Serious Breakage → Normal Breakage → Complete				
Drilling Rig Power		High Power ← Medium Power ← Low Power				

DIAMOND CORE BITS

CORE DIAMOND BIT STANDARDS AND TECHNICAL SPECIFICATIONS

Standard	Description	OD × ID (mm)	Matrix Height	K Matrix Grades
AC	Core Diamond Bit	47.6 × 27.0	C9	K7, K9
BC	Core Diamond Bit	59.5 × 36.3	C9, C12	K7, K9, K11
NQ	Core Diamond Bit	75.3 × 47.6	C9, C12	K3, K5, K7, K9
HQ	Core Diamond Bit	95.6 × 63.5	C9, C12	K3, K5, K7, K9
PQ	Core Diamond Bit	122.0 × 85.0	C9, C12	K3, K5, K7, K9

GUIDELINE FOR IMPREGNATED DIAMOND BITS OPERATING PARAMETERS

Standard	Flow Rate (L/min)	Rotation Speed (rpm)	Penetration Rate				Weight on Bit	
			200 rpi	250 rpi	80 r/cm	100 r/cm	lb	kN
AC	20–40	2000 / 1200 / 850	10 / 6 / 4.25	8/ 4.8 / 3.4	25 / 15 / 11	20 / 12 / 9	2,000–5,000	9–23
BC	30–45	1700 / 1000 / 700	8.5 / 5 / 3.5	6.8 / 4 / 2.8	22 / 13 / 9	17 / 10 / 7	2,000–5,000	9–23
NQ	45–85	1350 / 800	6.75 / 4	5.4 / 3.2	17/10	14 / 8	3,000–6,000	14–27
HQ	50–100	1000 / 600	5/3	4 / 2.4	13/8	10 / 6	4,000–8,000	18–36
PQ	60–120	800 / 500	4 / 2.5	3.2 / 2	10/6	8 / 5	5,000–10,000	23–45

CHANGKUN GEO

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Tang tian