



**REAL FACTORY BASED IN CHINA
NO MIDDLEMAN**

PRODUCT CATALOG

2022-2023



IADC Codes – Tricone Bit

International Association of Drilling Contractors

IADC Codes make it easier for drillers to describe what kind of rock bit they are looking for to the supplier.

Ranking Bit follows the IADC bit classification system in which the first three digits classify the bit according to the formation it is designed to drill and the bearing/seal design used.

Example 5-3-7-G.

First Digit:

- a. 1, 2, and 3 designate STEEL TOOTHBITS with 1 for soft, 2 for medium and 3 for hard formations.
- b. 4, 5, 6, 7 and 8 designate TUNGSTEN CARBIDE INSERT BITS for varying formation hardness with 4 being the softest and 8 the hardest.

Second Digit:

1, 2, 3 and 4 are further breakdown of formation with 1 being the softest and 4 the hardest.

Third Digit:

This digit will classify the bit according to bearing/seal type – see information on different bearing types and special gauge wear protection as follows :

- Standard open bearing roller bit ;
- Standard open bearing roller bit , air-cooled ;
- Standard open bearing roller bit with gauge protection which is defined as carbide inserts in the heel of the cone ;
- Sealed roller bearing bit ;
- Sealed roller bearing bit with gauge protection ;
- Journal sealed bearing bit ;
- Journal sealed bearing bit with gauge protection .

Fourth Digit:

The following letter codes are used in the fourth digit position to indicate additional features:

A. Air Application/R. Reinforced Welds/C. Center Jet/S. Standard Steel Tooth/D. Deviation Control/X. Chisel Insert/E. Extended Jet/Y. Conical Insert/G. Extra Gauge Protection/Z. Other Insert Shape/J. Jet Deflection .

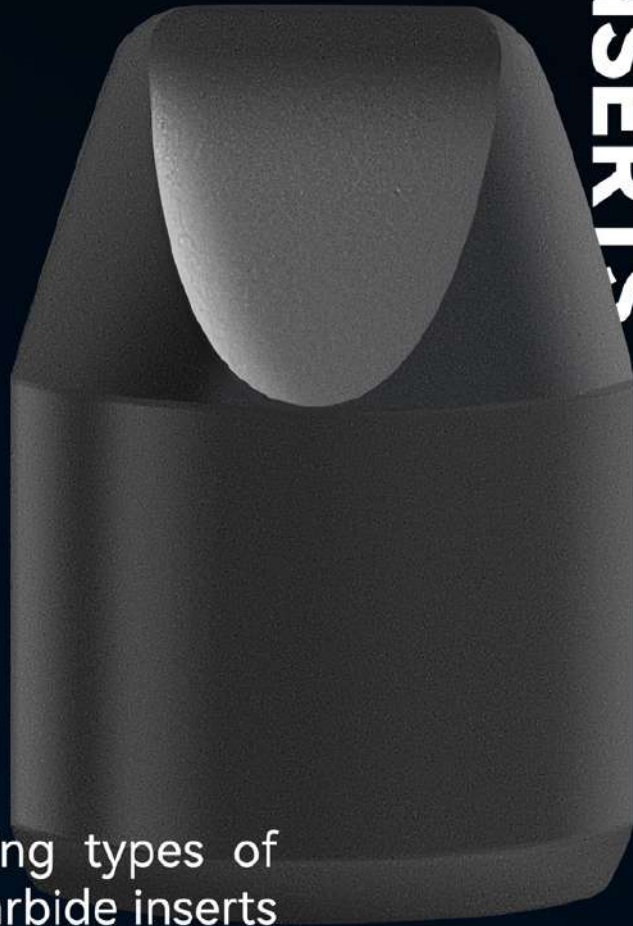
■ PRODUCT PARAMETER

Rock UCS(psi)	Steel tooth Tricone bit series		Rock type
0	10 Series 1-1 To 1-4		Unconsolidated Sand Limestone,Siltstone
2,000			Clay Stone, Mudstone
4,000			Marl,Chaiky Limestone
6,000	20 Series 2-1 To 2-4		Soft Shales
8,000			Consolidated Sandstones Soft Marble,Dolomite
10,000			Medium Shales
12,000	30 Series 3-1 To 3-4		12,000
14,000			Tuff, Soft Schist

■ PRODUCT PARAMETER

Rock UCS(psi)	Tungsten Carbide Insert Tricone Bit Series		Rock type
0	40 Series 4-1 To 4-4		Claystone, Mudstone Chalky Limestone
4,000			Soft Shale Loose Sandstones
8,000			Limestone, Siltstone Solid Sandstones
12,000	50 Series 5-1 To 5-4		Medium Shales Tuff, Soft Schist
16,000			Andesite, Rhyolite Quartzite(Sand, Silt)
20,000			Limestone, Marble Monzonite, Granite
24,000			Gneiss Diorite, Diabase
28,000	60 Series 6-1 To 6-4		Hard Shale, Slate Limestone, Dolomite
32,000			Basalt Tactite, Skarn
36,000			Granodiorite Taconite
40,000	70 Series 7-1 To 7-4		Quartzite, Syenite
44,000			Gabbro
48,000			Banded Iron Formation
52,000	80 Series 8-1 To 8-4		Chert
56,000			Quartzite
60,000			Amphibolite
64,000			Hornfelts
68,000			Hamatite Ore
Higher			Lava, Basalt Biwabic, Quartzite

TCI TRICONE BIT INSERTS



The following types of tungsten carbide inserts are used in "RANKING" TCI Tricone Bit:

■ TCI TRICONE BIT INSERTS

The inserts tooth is a part of the tricone bit, it is in direct contact with the rock formation, and it has the role of breaking the formation. They are made from tungsten carbide powder and a cobalt binder. Depending on the hardness of the rock formation, the tungsten carbide blades used for the tricone bit are different because the shape and physical characteristics of the tungsten carbide blades are different.

The following types of tungsten carbide inserts are used in "RANKING" TCI Tricone Bit:



Spherical – are used in bits for extremely hard formation drilling (IADC code – 8XX), can also be used in gauge rows of cones of bits for hard formation drilling (IADC code – 7XX). They are characterized by high crack resistance at the cost of lower sinkage rate.



Spherocon inserts are the intermediate type of inserts and are mainly used in bits for hard formation drilling (IADC code – 7XX). They have bigger curve radius than conical inserts and are balanced between sinkage rate and crack resistance, which allows them to be used for harder rock formations.



Conical – are used in bits for medium-hard formation drilling (IADC code – 6XX). They have more aggressive shape, hereupon are characterized by higher sinkage than spherical inserts, but have less durability and cannot be used in hardest formations.



Chisel – are mainly used in bits for soft and medium-soft formation drilling (IADC code – 4XX and 5XX). They provide more efficient and quicker formation chipping, but are less durable than conical and spherical inserts.



Cylindrical – are used for wear protection of lateral cone surface and shirttail during operation in abrasive rock formations.

Bits for Extremely Hard Formation Drilling

Tricone roller bits for drilling of mediumsoft formations are distinguished by most high performance cutting structure of chisel tungsten carbide inserts with relatively big offset from cone shell, which allows to get high drilling rate in soft and medium-soft rock formations, such as aleurolite, soft limestone, dense clay, medium-hard shale etc.

Bits of this series have protection of shirttail with **tungsten carbide inserts**, which increases wear resistance while drilling highly abrasive rocks.



Chisel and conical tungsten carbide insert cutting structure



Shirttail protection with tungsten carbide inserts

IADC	RPM(r/min)	WOB(KN/MM)
737	70~40	0.7~1.2
837	70~40	0.7~1.2

Bits for Hard Formation Drilling

Tri-cone rock bits for medium-hard rock formation drilling are distinguished by cutting structure consisting of chisel tungsten carbide inserts on gauge rows of cones and conical inserts with relatively small curve radius on inner rows. It allows these bits to be used for drilling of rock formations such as apatite, gabbro, coal, silicified magnesite etc., with quite high drilling rate.

Bits of this series also have protection of shirrtail with **tungsten carbide inserts**, which increases wear resistance while drilling highly abrasive rocks.



Spherocon tungsten carbide insert
cutting structure



Shirrtail protection with tungsten
carbide inserts

IADC	RPM(r/min)	WOB(KN/MM)
737	70~40	0.7~1.2

Bits for

Medium-Hard/Hard Formation Drilling

Tri-cone rock bits for medium-hard/hard rock formation drilling are distinguished by cutting structure fully consisting of conical tungsten carbide inserts with relatively small curve radius. Such cutting structure layout allows these bits to be used for drilling of rock formations such as medium- and fine-grained basalt, finegrained granite, siliceous limestone, porphyry etc.

Bits of this series have protection of shirrtail with **tungsten carbide inserts**, which increases wear resistance while drilling highly abrasive rocks.



Conical tungsten carbide insert cutting structure



Shirrtail protection with tungsten carbide inserts

IADC	RPM(r/min)	WOB(KN/MM)
637	80~40	0.5~1.2

Bits for

Medium-Hard Formation Drilling

Tri-cone rock bits for medium-hard rock formation drilling are distinguished by cutting structure consisting of chisel tungsten carbide inserts on gauge rows of cones and conical inserts with relatively small curve radius on inner rows. It allows these bits to be used for drilling of rock formations such as apatite, gabbro, coal, silicified magnesite etc., with quite high drilling rate.

Bits of this series also have protection of shirrtail with **tungsten carbide inserts**, which increases wear resistance while drilling highly abrasive rocks.



Chisel and conical tungsten carbide insert cutting structure



Shirrtail protection with tungsten carbide inserts

IADC	RPM(r/min)	WOB(KN/MM)
537	80~40	0.5~1.2
617、627	90~50	0.45~1.1

Bits for Medium-Soft Formation Drilling

Tricone roller bits for drilling of mediumsoft formations are distinguished by most high performance cutting structure of chisel tungsten carbide inserts with relatively big offset from cone shell, which allows to get high drilling rate in soft and medium-soft rock formations, such as aleurolite, soft limestone, dense clay, medium-hard shale etc.

Bits of this series have protection of shirrtail with **tungsten carbide inserts**, which increases wear resistance while drilling highly abrasive rocks.



Chisel and conical tungsten carbide insert cutting structure



Shirrtail protection with tungsten carbide inserts

IADC	RPM(r/min)	WOB(KN/MM)
417、427	150~70	0.3~0.9
437、447	150~70	0.35~0.9
517、527	140~50	0.35~1.0

Bits for Soft Formation Drilling

Tri-cone rock bits for soft rock formation drilling and are thickened hardfacing on the surface and crest of cutters to improve wear resistance. It is suitable for surface hole drilling for every kind of well and upper section with good drillability, such as Limestone, Soft Shales, Soft Marble, Medium Shales, and so on.

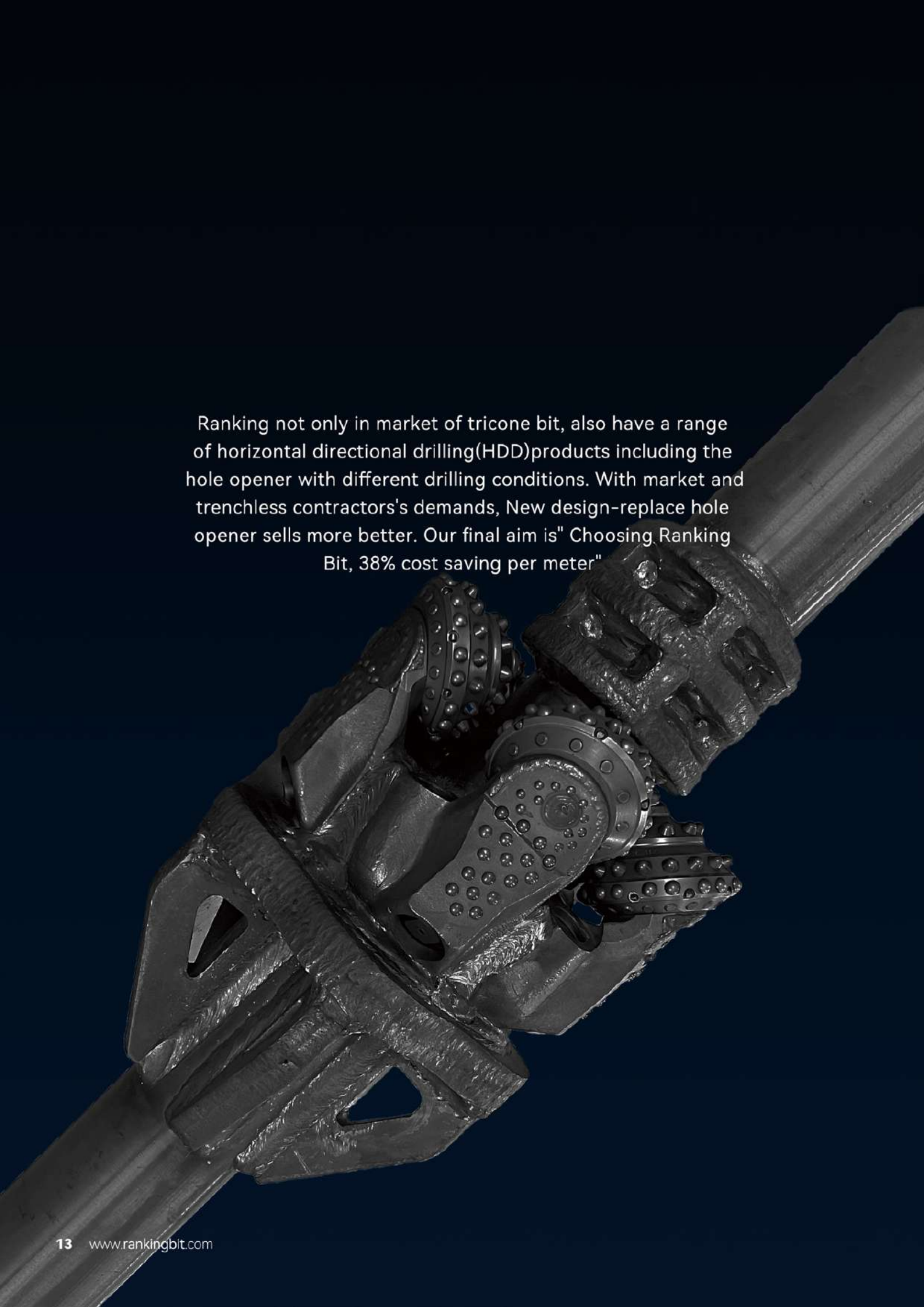


New welding material is used to enhance further wear resistance of cutters.

IADC	RPM(r/min)	WOB(KN/MM)
117	150~70	0.3~0.8
127	150~60	0.3~0.9
137	120~60	0.35~1.0
217	100~60	0.4~1.0

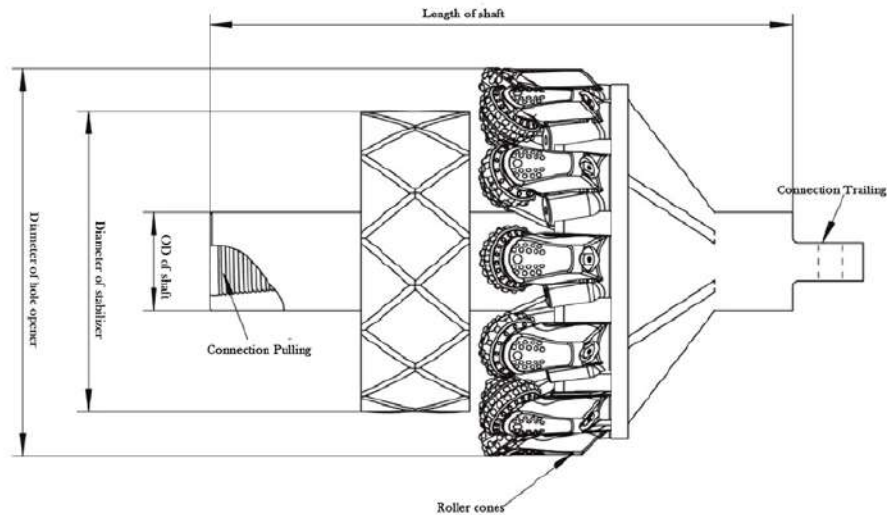
■ PRODUCT PARAMETER

Size(inch/mm)		connection thread (API Reg)	Making up Torque(KN.m)	weight(KG)
4 3/4	120.7	2 7/8	6.1~7.5	12
5 1/2	139.7	2 7/8		17
5 7/8	142.9	3 1/2	9.5~12.2	22
6 1/2	165.1	3 1/2		23
6 3/4	171.5	3 1/2		27
7 1/2	190.5	4 1/2	16.3~21.7	33
7 7/8	200	4 1/2		38
8 1/4	209.6	4 1/2		43
8 1/2	215.9	4 1/2		43
8 3/4	222.3	4 1/2		45
9 1/2	241.3	6 5/8	38~43.4	63
9 7/8	250.8	6 5/8		65
10 5/8	269.9	6 5/8		80
11 5/8	295.3	6 5/8		95
12 1/4	311.2	6 5/8		106
13 3/4	349.3	6 5/8		130
14 5/8	371.5	7 5/8	46.1~54.2	170
14 3/4	374.7	7 5/8		170
15 1/2	393.7	7 5/8		200
17 1/2	444.5	7 5/8		270
20	508	7 5/8		470
22	558.8	7 5/8		590

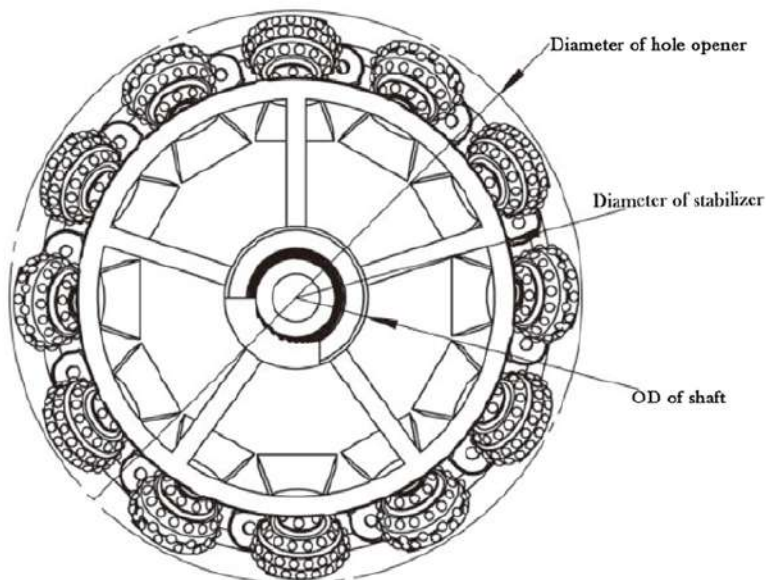


Ranking not only in market of tricone bit, also have a range of horizontal directional drilling(HDD)products including the hole opener with different drilling conditions. With market and trenchless contractors's demands, New design-replace hole opener sells more better. Our final aim is" Choosing Ranking Bit, 38% cost saving per meter"

■ Design Hole Openers



- | | |
|-------------------------------------|---------------------------------|
| 1. Diameter of hole opener (mm) | 2. Diameter of stabilizer (mm) |
| 3. OD of shaft (mm) | 4. Length of shaft (mm) |
| 5. Type of roller cone | 6. Quantity of roller cones |
| 7. attended mode (pulling/trailing) | 8. Rated drilling pressure (KN) |
| 9. Rated speed (r/min) | 10. Applicable Formations |
| 11. Remarks | |



Ranking engineers can design Hole Openers to your specific needs. Simply supply the above information to your local sales representative.

■ THE HORIZONTAL DIRECTIONAL DRILLING METHOD

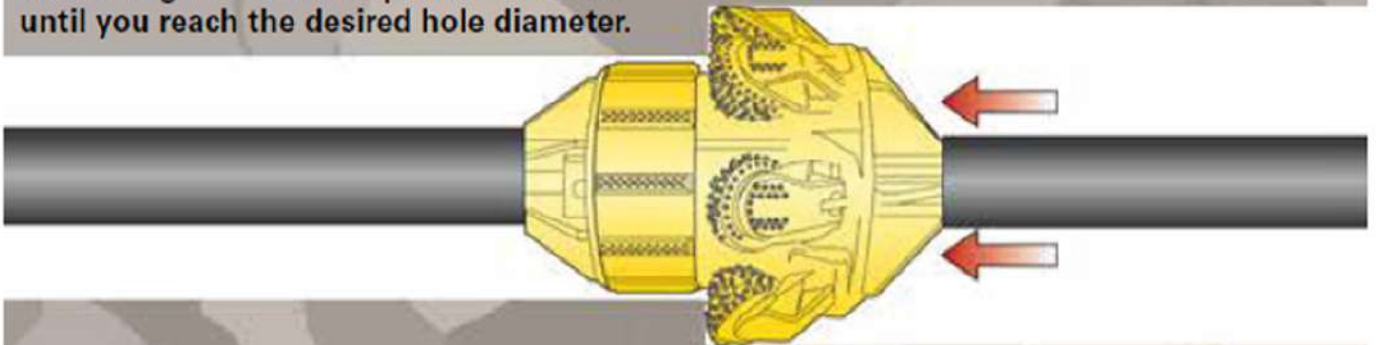
Step 1 – Drill a pilot hole with Rotary.



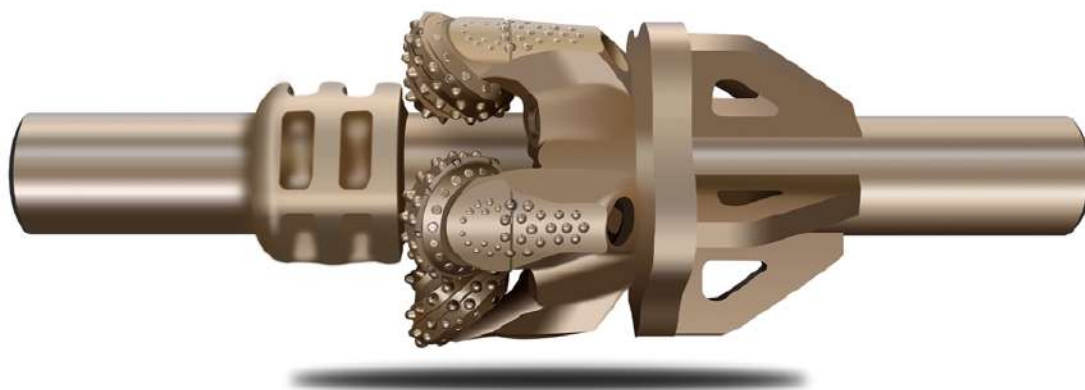
Step 2 – Ream back through the same hole with a HDD hole opener.



Step 3 – Ream back through the same hole with a larger HDD hole opener and so on until you reach the desired hole diameter.



TCL Hole Opener-HDD

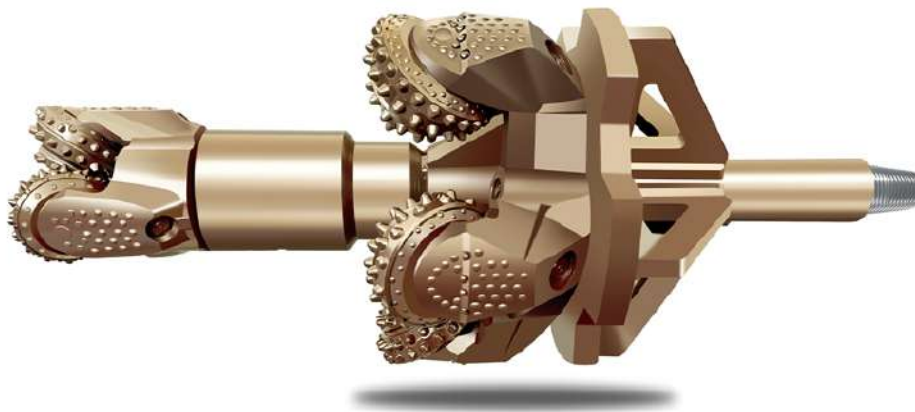


Reamer Diameter	Length	Bit Thirds	Stabilization	Thread
12inch	1000mm	6" IADC637*4 pieces	10inch	3 1/2" REG Pln&box
16inch	1000mm	8 1/2" IADC637*5 pices	12inch	3 1/2" REG Pln&box

Features

- Ranking hole openers utilize random cutting structure bit thirds, precisely positioned to assure equal load distribution and maximizing cutter count for hard rock application.
- The Custom manufactured reamers' OD are between 220mm to 1600mm. According to the features of drilling machine and different methane condition.
- For Full armor protetion, Optimum bit body protection for harsh horizontal drilling conditions.
- Pressure compensated, allows to drill deeper without damaging grease seals.
- Random cutting structure, higher rated of penetration with lighter loads and smaller chip size generation easier to clean the hole.
- Jet nozzle designs, capacity of handing application with high fluid flows.

TCL Hole Opener-Water Well Drilling

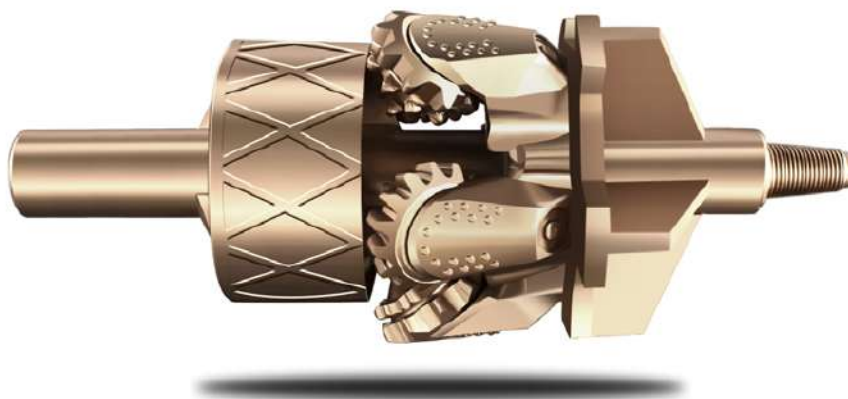


Reamer Diameter	Length	Bit Thirds	Stabilization	Thread
24inch	600mm	12" IADC737*5 pieces	20inch	4 1/2" REG Pln&box
30inch	800mm	12" IADC737*7 pices	26inch	4 1/2" REG Pln&box

Features

- Ranking water well drilling hole openers utilize random cutting structure bit thirds, precisely positioned to assure equal load distribution and maximizing cutter count for hard rock application.
- The Custom manufactured reamers' OD are between 220mm to 1600mm. According to the features of drilling machine and different methane condition.
- Pressure compensated, allows to drill deeper without damaging grease seals.
- Random cutting structure, higher rated of penetration with lighter loads and smaller chip size generation easier to clean the hole.

Steel Tooth Hole Opener



Reamer Diameter	Length	Bit Thirds	Stabilization	Thread
16inch	1000mm	8 1/2" IADC117*5 pieces	12inch	4 1/2" IF pin&box
18inch	1100mm	8 1/2" IADC317*5 pieces	14inch	4 1/2" IF pin*box

Features

- The Custom manufactured reamers' OD are between 220mm to 1600mm. According to the features of drilling machine and different methane condition.
- HDD Cutters and bit thirds have the industry's highest quality, consequently making them the industry's top performers.
- The milled tooth roller have an optimized shirttail protection, hard metal on the bevel, and inner rows of the cone to withstand the harsh drilling conditions that are typically encountered in the HDD application.
- The milled tooth roller are designed with a compensation system to allow for deep drilling without adding pressure to the internal sealing components.

Replaceable Hole Opener



Reamer Diameter	Length	Bit Thirds	Stabilization	Thread
18inch	1100mm	8 1/2" IADC637*6 pieces	14inch	3 1/2" IF pin*box
20inch	1200mm	8 1/2" IADC637*7 pieces	16inch	3 1/2" IF pin*box

Features

- New type drilling hole opener-repalce hole opener, Time saving, quick replaceable roller bit when it was wear.
- Longer working life & fast penetration, HDD special design roller bit.
- The Custom manufactured reamers' OD are between 220mm to 1600mm. According to the features of drilling machine and different methane condition.
- We adopt more suitable tooth type, bearing structure, sealing type and angle of inclination of paws. water cutting, good sand returning can effectively reduce sand gathering, cones are made of hot-coating-anti-waring alloy reducing wearing.

■ Let's Go Deep!

There are so much on the Bit



100-120 MPA
soft to Medium

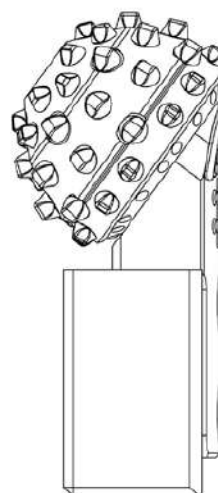
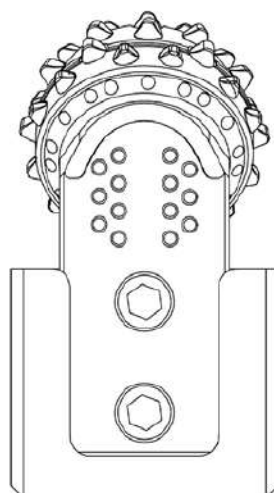


120-140 MPA
Medium to hard



130-180 MPA
Very Hard

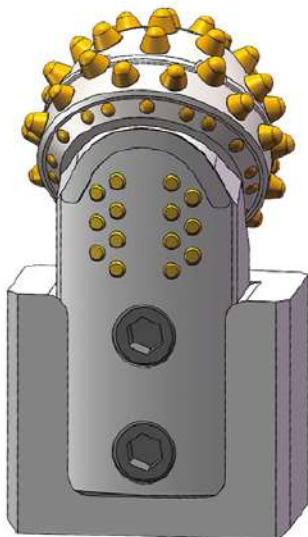
Drawing



REPLACE ROLLER CONE

Design of the seat being separated from the roller cone body, the seat welded on the body of the core barrel or hole opener, roller cone can be easy to disassembly and replacement.

There is no need for the roller cone body to be welded, avoiding high temperature affecting the roller cone structure.



Roller Cone Size	8 1/2"
IADC Codes	537G-737G

Easy to replace, convenient in use.
Maintenance cost is lower than welding type.
Full dotted random insert.
No blind spots.



■ WELDING ROLLER CONE

With years of experience in roller bit processing, Ranking Bit has R&D of various teeth shaped roller bits suitable for drilling varied rock formation.

IADC code	Suitable Rock Formation
537G	Medium hard with high compressive strength and hard abrasive stringers, such as weathered granite, limestone, iron ore and dolomite with stringers.
637G	High compressive strength, medium hard with thick interlayer, such as granite, hard sandstone, limestone, dense conglomerate, etc.
737G	Suitable for very hard formation, such as tight granite, quartzite, basalt, hard limestone, siliceous schist, cobblestone, etc.



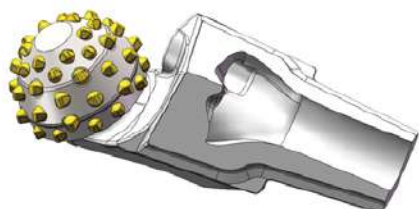
Feature

The cone bearing surface is hard-coated with a hard alloy layer, and the journal bearing is silver-plated, which improves the bearing capacity and the resistance to seizure.

Adopt high-strength and high-toughness cemented carbide teeth to improve the impact resistance of teeth and reduce the rate of broken teeth.

New type oil reservoir system, high temperature resistance, low wear and long service life

Lug back alloy full coverage improves the abrasion resistance of the cone.



A detailed, close-up photograph of a drill bit's cutting edge, showing multiple rows of PDC (Polycrystalline Diamond Composite) bits. The bits are arranged in a curved, overlapping pattern, with some showing signs of wear and chipping. The background is a dark, solid blue.

PDC BIT

PDC BIT SELECTION RECOMMENDATION TABLE

Formation description	Rock sample	Compressive strength psi	IADC type	Recommend Bit
Very soft; soft formation with low sticky layers and low compressive strength	Clay, Siltstone, Sandstone	<4000	M/S112-M/S223	M1303, M1904 S1904, S1905
Soft formation, low compressive strength, good drilling ability	Clay stone, Marl, Lignite, Sandstone	<8000	M/S222-M/S333	M1304, M1604 M1904, M1905 S1904, S1905
Medium soft: Soft to medium hard formation with low compressive strength inter bedded with hard layers	Clay stone, Marl, Lignite, Sandstone, Anhydrite, Tuff	<12000	M/S323-M/S433	M1604, M1605 M1606, M1905 M1906, M1904 S1905, S1906 S1605, S1606
Medium : Medium hard to hard formation with high compressive strength and thin abrasive layers	Mudstone, Limestone, Anhydrite, Calcareous, Sandstone, Shale	<16000	M333-M443	M1305, M1605 M1604, S1605 S1306
Medium hard and compact formation with very high compressive strength but no abrasive layers	Limestone, Anhydrite, Dolomite	<24000	M432-M444	M1306, M1307 M1605, M1606 M1608, S1605 S1606, S1604 S1308
Hard and compact formation with very high compressive strength, and some abrasive	Calcareous shale, Siliceous sandstone, Siltstone	<32000	M611-734	M1306, M1307 M1308, M1606 M1308
Extremely hard and abrasive formation	Quartzite, Igneous rock	>32000	M711-M844	M1308, M1307

Matrix Body PDC Bit

DESCRIPTION			
Bit size	12 1/4"	Making up Torque	51.1-56.9
Blades	6	Rotary Speed	60-260
Cutter Size	13mm	Flow Rate	35-70
Nozzle QTY	6NZ	Weight on Bit	30-140
Gauge length	2.5"	Max. WOB	180



Features

- Advanced tungsten carbide material matrix body 20% improvement in erosion resistant than precious matrix bit Less cutting structure less and bit body damage Provide multiple advantages in interbedded lithology. Enhanced bit stability for BHA shock and vibration mitigation. Increase cleaning and reduce balling.
- Superior PDC cutter technology made a perfect performance on impact strength resistance and abrasive resistance. Dual row cutter extend the aggressiveness and durability. The FEA software for the cutters distribution and layout made the drilling more efficient and reduce
- NPT. Optimize the angle of the cutter in both axial and radial by FBS(force balance analyze) software resulting in stronger aggressive and more durability of the bit. DOC(depth of cutters) was calculated and optimized by a series experiences of the bit,made the cutter penetrate the formations more rationally.

Steel Body PDC Bit

DESCRIPTION

Bit size	8 1/2"	Making up Torque	24.1-26.6
Blades	6	Rotary Speed	60-260
Cutter Size	13mm	Flow Rate	22-35
Nozzle QTY	5NZ	Weight on Bit	20-100
Gauge length	2.7"	Max. WOB	130



Features

- Improving cutting efficiency and increasing ROP and durability with advanced technology that helps cutters stay sharper longer. Five blades and dual cutter rows extend the bit life and penetrate efficiency. Enhanced bit stability for BHA shock and vibration mitigation. Increase cleaning and reduce balling.
- The FEA software for the cutters distribution and layout made the drilling more efficient and reduce NPT. Optimize the angle of the cutter in both axial and radial by FBS(force balance analyze) software resulting in stronger aggressive and more durability of the bit.
- DOC(depth of cutters) was calculated and optimized by a series experiences of the bit, made the cutter penetrate the formations more rationally. Effectively improve the stability and ROP of the bit by spiral blade.

BRIEF IN PDC BIT OPERATION MENU

A. The hole preparation

- 1) Make sure the hole is clean and no any junk
- 2) Run previous bit with junk basket if junking anticipated

B. PDC Bit Preparation

- 1) Remove bit from packing box
- 2) Stand bit on wood or rubber cushion - not on steel decking
- 3) Inspect bit for damage
- 4) Screw up proper bit nozzles according to drilling engineer's design
- 5) Check inside of bit clean and junk free

C. Making up the bit

- 1) Clean and grease the pin and box
- 2) Fit bit breaker to bit and engage latch
- 3) Fit bit breaker in rotary table
- 4) Torque up with Recommended torques

D. Tripping in

- 1) Approach casing shoe/obstructions cautiously
- 2) Ream tight spots - see reaming
- 3) Last joint - wash to bottom
- 4) Tag bottom gently with full flow and low RPM
- 5) Circulate for 5 minutes

E. Reaming

- 1) Reaming under - gauge holes are not Recommended - only tight spots
- 2) Full flow
- 3) Low WOB - 1/10 max WOB
- 4) Maintain a low ROP and high RPM
- 5) Avoid high torque

F. Drilling in

- 1) Low WOB to drill first foot - cutting profile

G. Making connection

- 1) Full flow until Kelly up
- 2) Making connection
- 3) Record pressure on and off bottom
- 4) Check pump strokes

H. Drilling ahead

- 1) Find optimum drilling parameter for each formation within Recommended limit - by varying - WOB - RPM- flow, Do not set and forget Soft formation - High ROP increases risk of plugging High stringers - Reduce RPM to avoid overheating Limit WOB - high WOB shortens bit life
- 2) Survey - Regular survey recommended.

I. Unplugging

- 1) Blocked waterways- increase in pressure difference off and on bottom Kick brake Maintain full flow Maintain rotation
- 2) Blocked nozzles - increase in pressure drop off and on bottom. Circulate for 5 minutes Raise Kelly , allow to fall rapidly - avoid surge. Do NOT drop bit on bottom.

P D C REAMER



PDC Hole Opener for Water Well Drilling



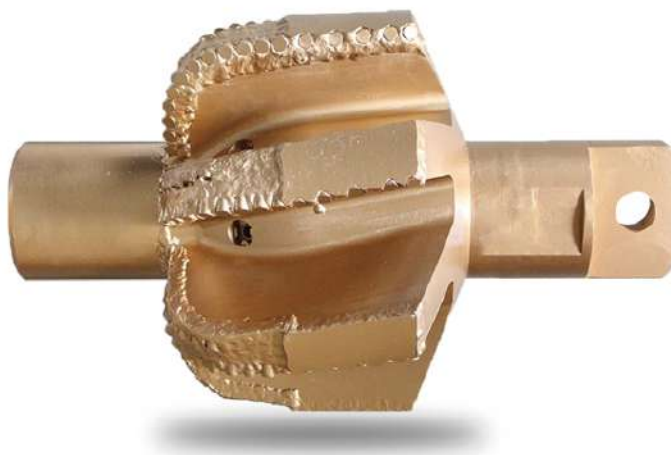
DESCRIPTION

Reamer size	17 1/2"	Junk Slot Area	108.8
Blades	4	Rotary Speed	60-280
Primary Cutter Size	19mm	Flow Rate	45-80
Thread Connection	4 1/2" Reg 6 5/8" Reg	Weight on Bit	30-200
Gauge length	6"	Max. WOB	280

Features

- In water well drilling, the special structure of the reamer makes the wellbore smoother and more stable, and the unique chip flute design can quickly clear the cuttings and drill quickly with less torque and pressure.
- We offer innovative drilling technology to mitigate drill string vibration during reaming. PDC hole opener solution can help you solve your challenges, whether you use a rotary steerable drill combination, a rotary motor drill combination, or a traditional rotary drilling system. Our reaming tools operate at high efficiency, increase equivalent cycle density, reduce the risk of fractured formations, reduce torque and drag, and overcome drilling challenges.
- This is a spiral blades PDC hole opener, upper is 6 5/8 API reg box, bottom is 4 1/2 API reg box, drillers could fit PDC bits or motor applicable tricone bits in front.
- We can provide you with customized service between 8"-50"

Hole Opener for HDD



DESCRIPTION

Reamer size	16"	Junk Slot Area	105.6
Blades	7	Rotary Speed	60-280
Primary Cutter Size	13mm	Flow Rate	45-80
Thread Connection	3 1/2" IF box&pulling eye	Weight on Bit	30-180
Gauge length	6"	Max. WOB	220

Features

- Our PDC reamers come in conical and helical designs; these very important attributes make our reamers one of the best in China.
- The purpose of the taper is to center the reamer in the pilot hole to ensure a symmetrical hole cut, balance the cut size left and right, and allow you to ream from pilot to finish in most holes. The helix on the reamer helps reduce chatter and reduce fluctuating torque.
- Our PDC reamers are cut from a single piece of high-quality steel. According to the needs of horizontal directional drilling projects, the reasonable distribution of PDC cutters ensures the best drilling results
- We can provide you with customized service between 8"-50"

Type-One

Welded PDC Reamer



DESCRIPTION

Reamer size	18"	Junk Slot Area	108.9
Blades	6	Rotary Speed	60-280
Primary Cutter Size	13mm	Flow Rate	45-80
Thread Connection	4 1/2" IF box&pulling eye	Weight on Bit	30-200
Gauge length	6"	Max. WOB	240

Features

- Our PDC reamers come in conical and helical designs; these very important attributes make our reamers one of the best in China.
- High-quality steel is selected as the main body of Reamer, advanced machine precision cutting blade, professional engineers design drawings, and operators complete the welding.
- The layout of PDC cutters is reasonable to ensure the best drilling in horizontal directional drilling. Different types of PDC cutters can be selected according to the rock hardness.
- We can provide you with customized service between 8"-50"

Type-Two

Welded PDC Reamer



DESCRIPTION			
Reamer size	18"	Junk Slot Area	105.6
Blades	7	Rotary Speed	60-280
Primary Cutter Size	13mm	Flow Rate	45-80
Thread Connection	4 1/2" IF box&pulling eye	Weight on Bit	30-200
Gauge length	6"	Max. WOB	240

Features

- Our PDC reamers come in conical and helical designs; these very important attributes make our reamers one of the best in China.
- More wear-resistant alloys are welded on the outside of Reamer to increase the wear resistance and durability of the product
- Customized for customers according to the characteristics of horizontal directional drilling projects to ensure the efficiency of horizontal drilling
- We can provide you with customized service between 8"-50"

■ PDC Hole Opener Operation Menu

A. PDC hole opener selection should be considered:

- 01 Formation condition.
- 02 Drilling condition.
- 03 Power equipment to ensure the continuous use of drilling operations.
- 04 Water system to ensure the drilling fluid displacement and pump pressure to meet the requirements of PDC hole opener.
- 05 Make sure the hole is clean and no any steel junk.

B. PDC hole opener should be checked nozzles before goes down, and the type, size, serial number should be recorded.

C. PDC hole opener buckle should use special device, hole opener cutting surface to fill soft things, no collision with steel or other hard materials.

D. PDC hole opener drill to smooth operation, must be righting. Improve the pump displacement, low WOB, low speed.

E. PDC hole opener drill with low WOB, low speed, after drilling 0.5M, until entered the hole, making the hole shape consistent with bit and then gradually increase the drilling pressure, rotational speed.

■ DRAG BIT

Drag bits are suitable for drilling rock and soft soil. In the process, the rock pieces are washed away by water or foamy mud. Due to their sharp teeth, drag bits can carry out drilling and cutting processes at high speeds.

Applications water well drilling, coal mining, frozen ground drilling, geological prospecting, etc.

Step Type Drag Bits



Chevron Type Drag Bits



Size	Thread
3"	2 3/8"API REG
3 1/2"	2 3/8"API REG
4"	2 3/8"API REG
4 1/2"	2 3/8"API REG
5"	2 3/8"API REG
5 1/2"	2 3/8"API REG
6"	3 1/2"API REG
6 1/2"	3 1/2"API REG
7"	4 1/2"API REG
7 1/2"	4 1/2"API REG
8"	4 1/2"API REG
8 1/2"	4 1/2"API REG
9"	4 1/2"API REG
9 1/2"	6 5/8"API REG
10"	6 5/8"API REG
11"	6 5/8"API REG
12 1/4"	6 5/8"API REG
15"	6 5/8"API REG
17 1/2"	6 5/8"API REG

■ Adaptor Subs

Adaptor subs are an important integral part of everyday drilling.

Ranking Bit's adapters subs are made to any length, outside diameter(OD), inside diameter(ID), and thread combination.

We have a large inventory of semi-finished adaptor subs and finished adaptor subs.

Quick delivery, custom sizes are always available.



Code	Thread type	Male(Pin) DS	Male(Pin) DF	Male(Pin) length	Female(Box) QF	Female(Box) Length
	NC23	65.1	52.4	76.2	66.7	92
2A10	NC26(2 3/8"IF)	73	60.35	76.2	74.6	92
210	NC31(2 7/8"IF)	86.13	71.32	88.9	87.7	104.8
	NC35	94.97	79.09	95.2	96.8	111.1
310	NC38(3 1/2"IF)	102	85.07	101.6	103.6	117.5
4A20	NC40(4"FH)	108.71	89.66	114.3	110.3	130.2
	NC44	117.48	98.43	114.3	119.1	130.2
4A10	NC46(4"IF)	122.48	103.73	114.3	124.6	130.2
410	NC50(4 1/2"IF)	133.35	114.3	114.3	134.9	130.2
	NC56	149.25	117.5	127	150.8	142.9
	NC61	163.52	128.8	139.7	165.1	155.6
	NC70	185.75	147.65	152.4	187.3	168.3
	NC77	203.2	161.95	165.1	204.8	181
2A30	23/8"REG	66.67	47.625	76.2	68.3	92.1
230	27/8"REG	76.2	53.975	88.9	77.8	104.8
330	3 1/2"REG	88.9	65.075	95.2	90.5	111.1
430	4 1/2"REG	117.47	90.475	108	119.1	123.8
530	5 1/2"REG	140.21	110.06	120.6	141.7	136.5
630	65/8"REG	152.2	131.04	127	154	142.9
730	75/8"REG	177.8	144.48	133.4	180.2	149.2
830	85/8"REG	201.98	167.84	136.52	204.4	152.4
320	3 1/2"FH	101.45	77.622	95.2	102.8	111.1
420	4 1/2"FH	121.72	96.317	101.6	123.8	117.5
520	51/2"FH	147.96	126.79	127	150	142.9
620	6 5/8"FH	171.5	150.36	127	173.8	142.9
	5 1/2"IF	162.48	141.32	127	163.9	142.9

NOZZLE SELECTION GUIDE

Select nozzle bore size based on your available fluid volume and pressure limitations.



Size	Material	Bore Size IN	Bore Size mm
RK-06S	Steel	6/32	0.188" 4.763mm
RK-08S	Steel	8/32	0.250" 6.35mm
RK-10S	Steel	10/32	0.313" 7.938mm
RK-12S	Steel	12/32	0.375" 9.525mm
RK-14S	Steel	14/32	0.438" 11.125mm
RK-06C	Carbide	6/32	0.188" 4.763mm
RK-08C	Carbide	8/32	0.250" 6.35mm
RK-10C	Carbide	10/32	0.313" 7.938mm
RK-12C	Carbide	12/32	0.375" 9.525mm
RK-14C	Carbide	14/32	0.438" 11.125mm
RK-16C	Carbide	16/32	0.5" 12.7mm
RK-18C	Carbide	18/32	0.563" 14.288mm
RK-20C	Carbide	20/32	0.625" 15.875mm

■ Product Listing

■ Quick disconnect sonde housing with drill bits



■ Side-load sonde housing with drill bits



■ Sonde housing with drill bits



■ Eagle claw drill head



■ Drill bits

■ Cutter heads



■ Various Connectors



■ Product Listing



■ HDD Drill rod



■ Barrel Reamer



■ Fluted reamer



■ All Terrain Fluted reamer



■ Fly Cutter reamer



■ Starter Rods



■ Swivel



■ Collar



■ Reamer Waterwing



[illegible]



Ranking offering product lines of Tricone bits, PDC bits ,
Hole Openers, Drag Bits, Roller Cutters, adapter subs.
mainly for Horizontal Directional Drilling (HDD), Piling, Water well,
Geothermal, Mining, Exploration drilling etc.

We work with our customers to achieve goals and solve problem.
Choose Ranking Bit, 38% costs saving per meter.

Web & Email

www.rankingbit.com
sales@rankingbit.com

Phone & Fax

+86-317-558 1117
+86-317-366 7079

Address

Economic Development Zone(West Area),
Hejian City, Hebei Province

