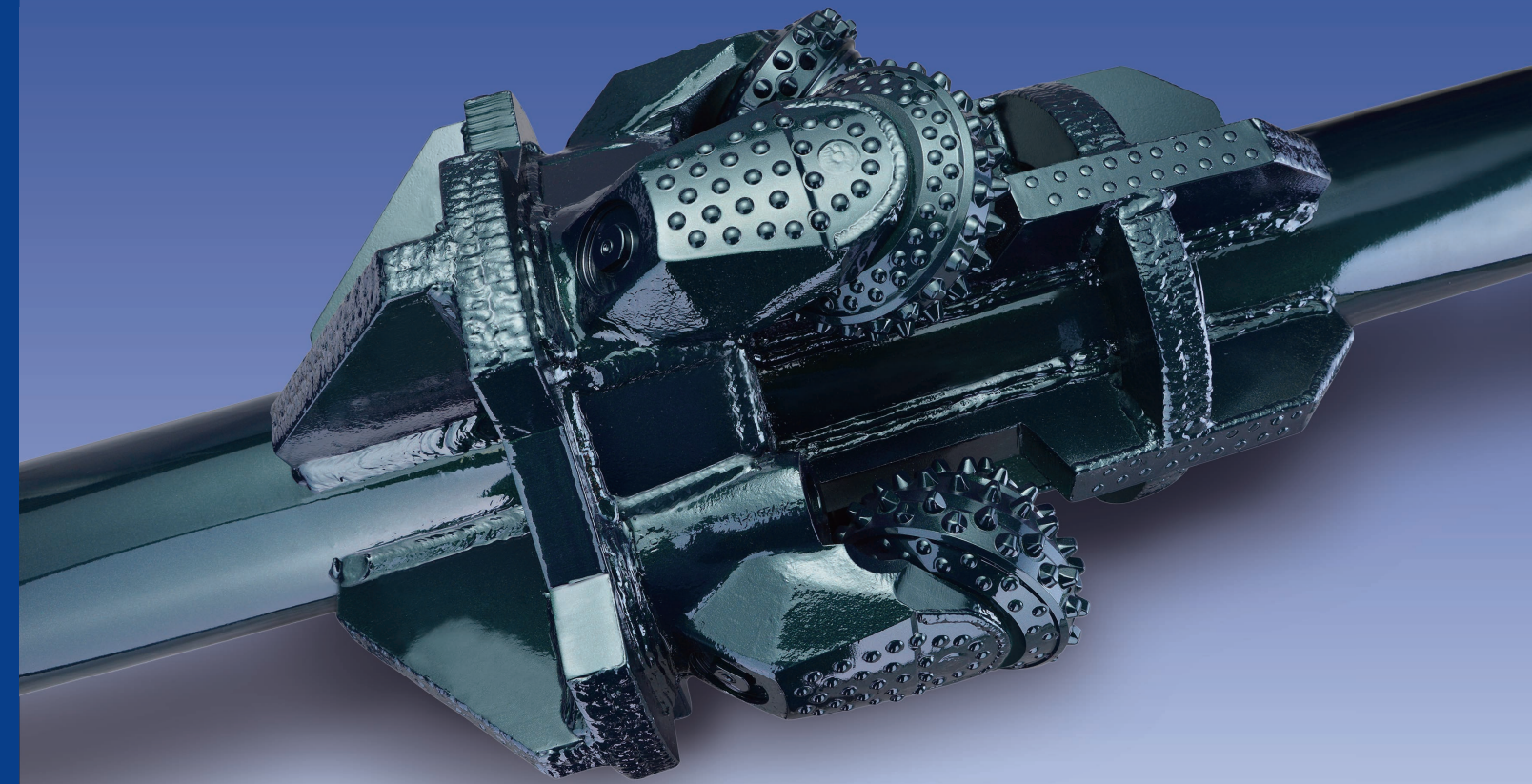




CONTACT US

Phone : +86 0512-62850656

Address : No.6, Weixi Road, Suzhou Industrial Park

Email : info@shareate.com

www.shareate.com



HDD TOOLS

Shareate Tools Ltd.



About Us

Shareate Tools Ltd., located in Suzhou Industrial Park, is a company engaged in the R&D and manufacturing of cemented carbide products and rock drilling tools. It has two major manufacturing bases in Qianjiang and Suzhou, fitted with advanced producing and testing equipment. It is a research and development and manufacturing base of cemented carbide and rock drilling tools with leading technology level and continuously increasing scale in China. Shareate was officially listed on the Sci-tech Innovation Board of the Shanghai Stock Exchange (stock code "688257").

Shareate has strong scientific and technological innovation capabilities, and has formed a system of independent intellectual property rights and technolo-

gies. Up to now, Shareate has obtained 75 invention patents and 467 utility model patents. The company has passed the double certification of API and ISO9001. At present, it has won the "National High-tech Enterprise", "National Specialized Special New Little Giant", "Jiangsu Enterprise Technology Center", "Jiangsu Province High-efficiency Rock Drilling Tool Engineering Technology Research Center", "Jiangsu Province Postdoctoral Innovation Practice Base", "Jiangsu Province Enterprise Graduate Workstation", "Jiangsu Province Specialized, Special and New Little Giant", "Jiangsu Province Integration of Industrialization and Industrialization Demonstration Enterprise", "Jiangsu Boutique Brand Certification Enterprise", "Jiangsu Private Technology Enterprise", "Suzhou

Industrial Design Center", "Suzhou Gazelle Enterprise", "Suzhou Manufacturing Brand Certification Enterprise", "Suzhou Industrial Park Technology Leading Talent Enterprise", "Suzhou Industrial Park Demonstration Intelligent Workshop"... The products have obtained the titles of "Jiangsu High-tech Products", "Jiangsu High-quality Products", "Suzhou Famous Brand Products", "Made in Suzhou" and the certificates of "National Standard Qualified Unit, Quality Tracking Key Protection Product".

The company's main products include cemented carbide products for oil drilling, mining, diamond composite chip matrices, and oil drilling bit nozzles, as

well as rock drilling products such as tricone bits, single cone bits, trenchless drilling tools, roller cutters, DTH hammers, and hammer bits. These products are exported to Japan, South Korea, the United States, Canada, Australia, Russia, and over 60 other countries and regions, and are well received by customers worldwide.

Horizontal directional drilling products

Product Coverage

Shareate is committed to the development of horizontal directional drilling products relying on the advanced design and development strength and also manufacturing capacity of roller cone bits. Shareate’s horizontal directional drilling products have formed a variety of series, including tricone bits, reamers and trenchless bits. The product series is complete. At present, our tricone bit has developed more than 20 kinds of sizes and range from 4 1/2” to 17 1/2”, and more than 100 models of TCI bits, Mill tooth bits and trenchless bit.

On the basis of years of R&D and manufacturing of rock drilling products, the company develops reamer products, with sizes ranging from 250 to 1600mm. It is widely used in the construction of municipal, gas, telecommunication and oil&gas pipeline crossing projects, with stable quality and excellent performance. Our reamers can be customized according to the individual requirements of customers.

Nomenclature

The name of the HDD rock drilling product is composed of: diameter specification, series code, IADC code, additional feature code and version number.

► 01 Diameter Specification

Tricone Bits & Lugs: Diameter is denoted in imperial units (Examples: 8 1/2, 9 7/8, 12 1/4). Reamers: Diameter is denoted in metric or imperial units, prefixed with a connection thread code (Examples: NC31 300, 054FH 18, 065FH 1050).

► 02 Serial code

It consists of three letters, which represent the classification and basic characteristics of the product. The following table 1 shows the code principle of the tricone bits and trenchless bit:

Products	Classification code	Bearing Features	Sealing feature
Tricone bit	S—Universal Tricone Bits	G—Rolling bearing H—Journal bearing	A—O-ring rubber seal
	C—Tricone bit for trenchless pilot hole		V—Flat rubber seal
Trenchless bit	C		J—Metal seal

As shown in Table 2 below, it is the code principle of the reamers

Products	Company code	Product code	Sealing feature
Reamer	S	K	A—O-ring rubber seal
			V—Flat rubber seal
			J—Metal seal

► 03 IADC classification code

It is composed of three digits, the first digit represents the type of bit cutting structure and formation hardness, the second digit is the formation classification number, and the third digit is the bearing and sealing feature code.

► 04 The additional feature code

Reflects the special structure of the products. The common additional feature codes are shown in the following table:

Code	Additional feature
C	Centre nozzle port
G	Special enhancement of lug back
L	Lug back centralizing
T	Trimming insert
X	Wedge-shaped insert
Y	Conical insert

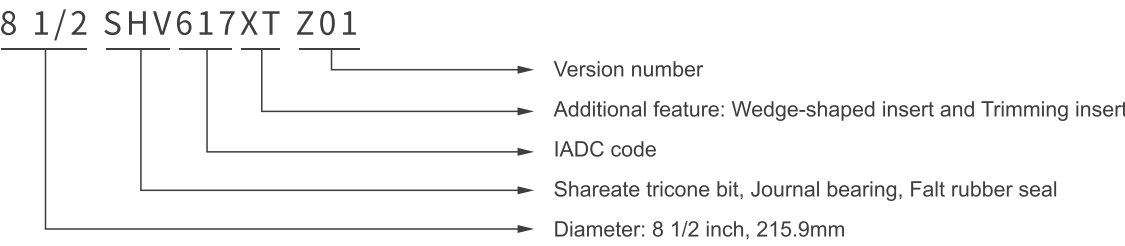
For reamer products, we’ ll use "-" and a number after the additional feature code to indicate the number of trenchless bit.

► 05 Version number

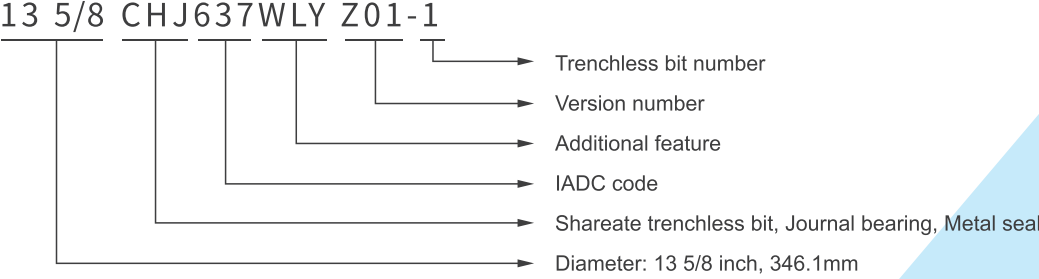
It is represented by letters and numbers with specific meanings, and the numbers represent the number of improvements, among which -1, -2, -3 are added after the version number to distinguish the first, second, and third trenchless bit.

For example:

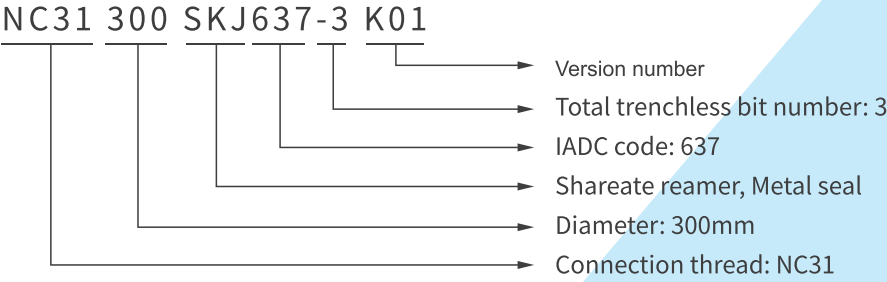
◆ Nomenclature of Tricone bits



◆ Nomenclature of trenchless bit



◆ Nomenclature of Reamers



Formation

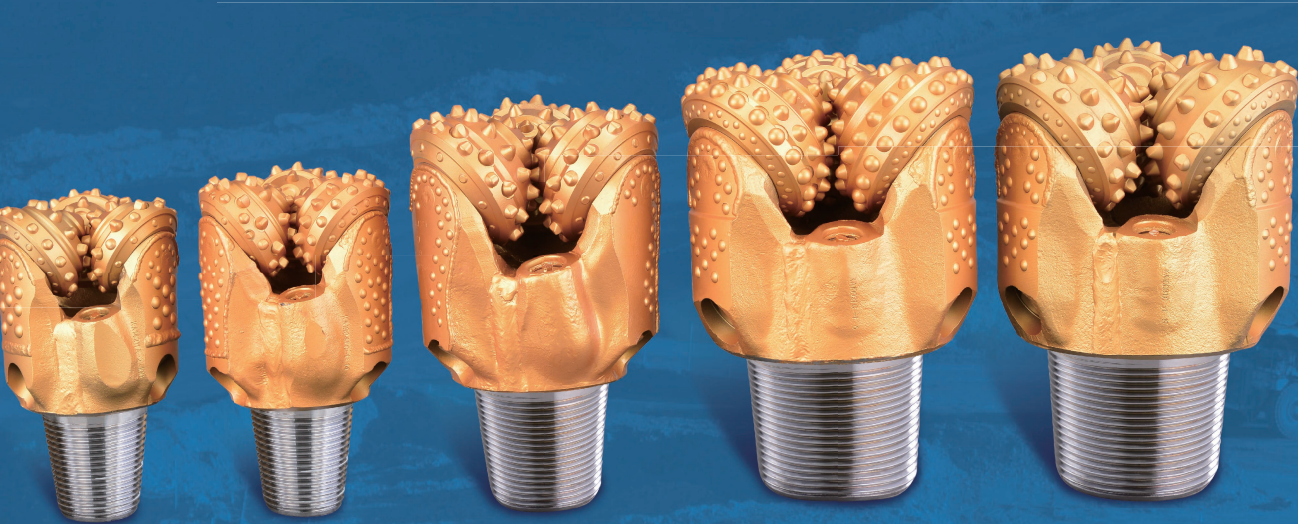
IADC	Formation
117/127	Low compressive strength, high drill ability soft formation, such as shale, clay, salt rock, soft limestone, etc.
537	Compressive strength, medium soft, with hard abrasive inter layer, such as hard shale, anhydrite, soft limestone, sandstone, etc
617	High compressive strength, medium to hard, with thick hard inter calations, such as hard shale, limestone, dolomite, sandstone, etc.
637	High compressive strength, high abrasive and medium hard formations such as limestone, dolomite, sandstone, flint, etc.

Note: This table specifies the formation for common types of drill bits, and the adaptability of the drill bit and the formation should obey to the IADC principle.

Recommend parameter

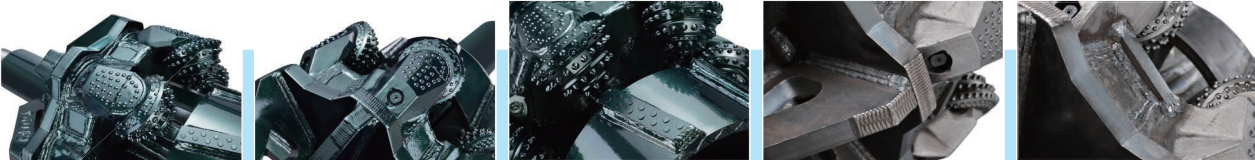
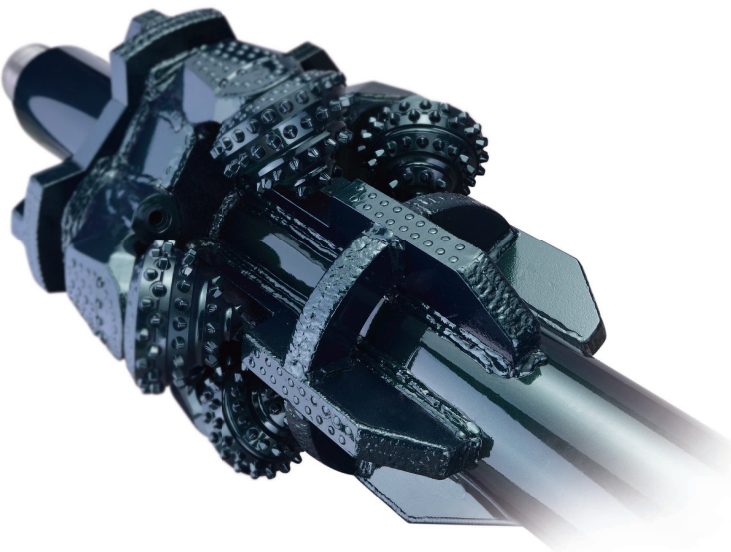
IADC	Pull down(KN/mm)	Recommended ROP for Rubber Seals (r/min)	Recommended ROP for Metal Seals (r/min)
117/127	0.35~0.9	150~80	160~90
537	0.35~1.05	120~50	140~60
617	0.35~1.05	80~40	140~60
637	0.7~1.2	70~40	140~60

Note: 1) The recommended maximum pull down and rotation speed in the table cannot be used at the same time.
2) The recommended parameters in the table are the applicable drilling pressure and rotation speed of the tricone drill bit. When the trenchless bit is used on a reamer, the diameter of the reamer and the specification of the trenchless bit should be considered;
3) The larger the reamer, the lower the rotation speed of the drill pipe should be.



Technical characteristics of reamers

- ◆ According to the different construction conditions on site, select the appropriate trenchless bit type and quantity ratio to ensure product life and construction efficiency;
 - ◆ The trenchless bit is produced by ourself, the production and assembly of the reamer are strictly implemented according to the quality standard of the roller cone bit, and the process quality is controllable;
 - ◆ Using special high-precision tooling to control the consistency of the welding angle and position of the trenchless bit, the welding process ensures that the trenchless bit does not overheat, and the bearing life can be better guaranteed;
- The easy-to-wear surfaces such as the centering and reinforcing ribs of the reamer are welded with WC wear-resistant materials, and cemented carbide teeth are embedded for protection to improve the wear resistance of the reamer.



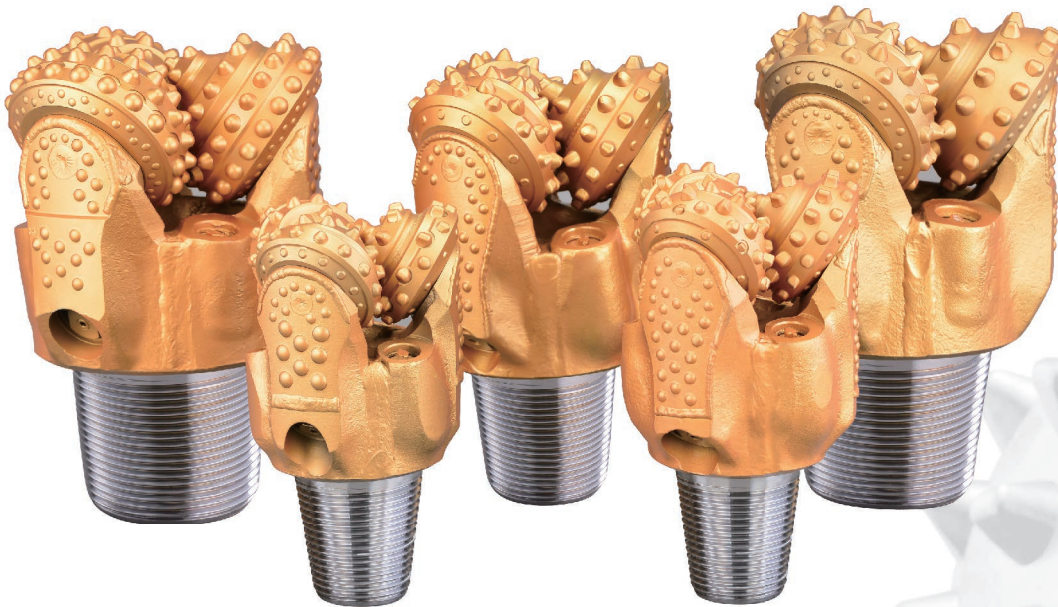
Trenchless bit configuration table

Items	Reamer	Segments			
	Dia (mm)	8 1/2	9 7/8	12 1/4	13 5/8
1	300	3	/	/	/
2	400	5	4	/	/
3	500	6	5	4~5	5
4	600	/	6~7	5~6	5~6
5	700	/	7~8	7	6~7
6	800	/	/	8	7~8
7	900	/	/	9	8~9
8	1000	/	/	/	9~10
9	1100	/	/	/	10~11
10	1200	/	/	/	10~12
11	1300	/	/	/	11~13
12	1400	/	/	/	12~14
13	1500	/	/	/	14~16
14	1600	/	/	/	15~17
15	1700	/	/	/	16~18
16	1800	/	/	/	17~20

Note: 1) The configuration of the trenchless bit can be adjusted according to customer requirements, formation, drilling rig model or any other construction requirements;
2) Different types of plate or barrel centralizing structures can be applied according to customer requirements.

Products Image

Pilot bit

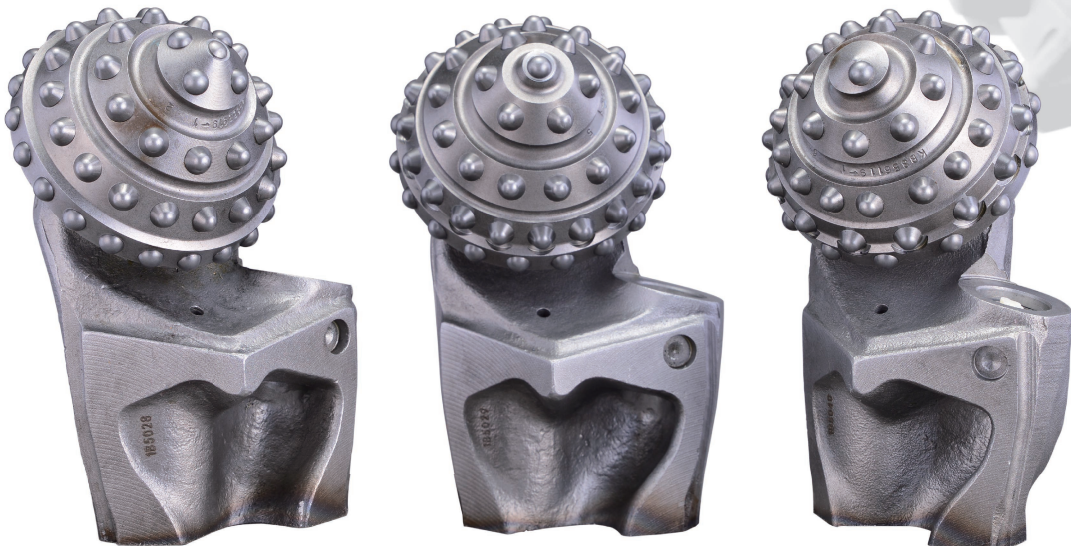


9 7/8" trenchless bit



Trenchless bit

8 1/2" trenchless bit



12 1/4" trenchless bit



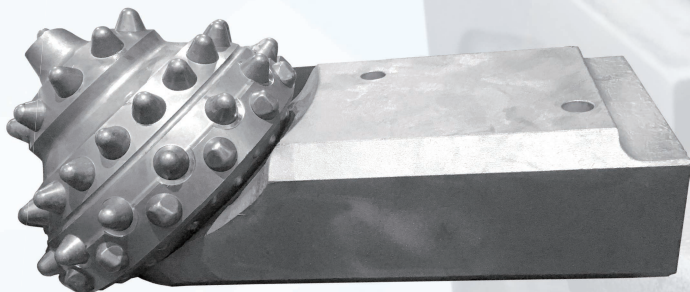
13 5/8" trenchless bit



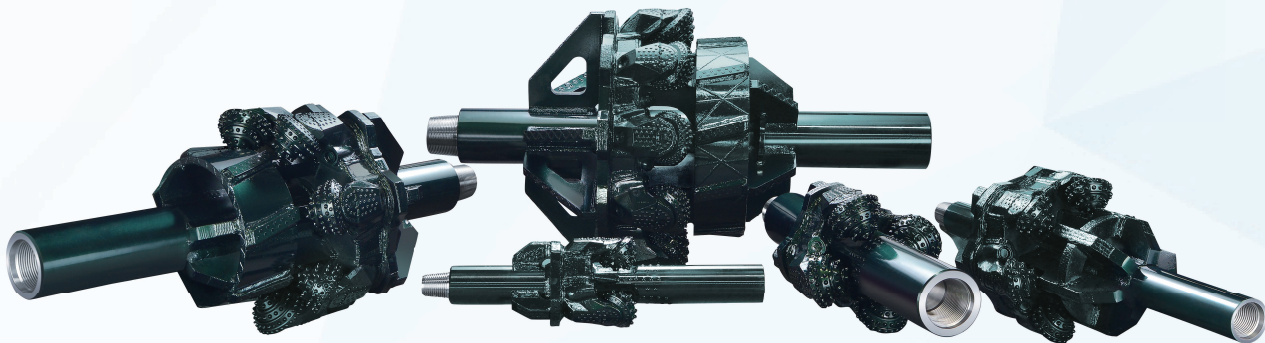
Straight lug 8 1/2" trenchless bit



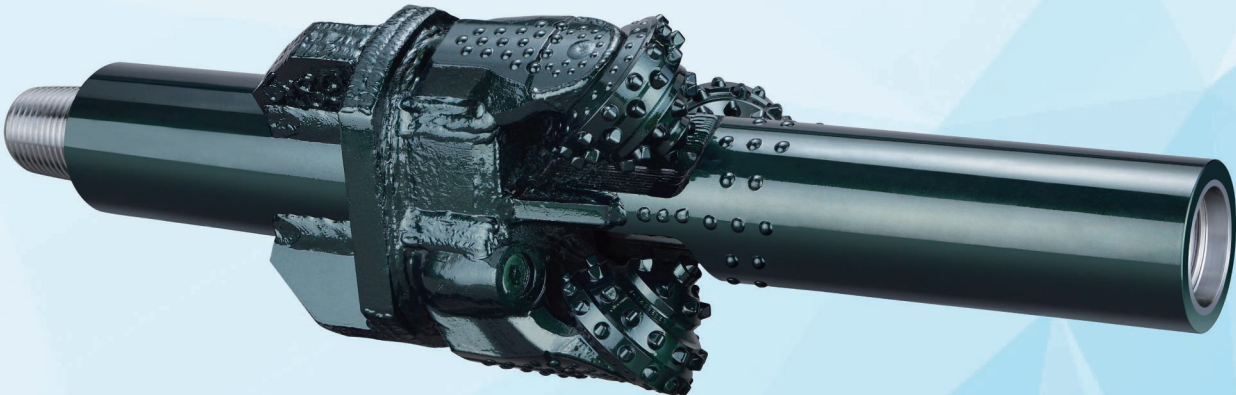
Straight lug 14" trenchless bit



► Reamer



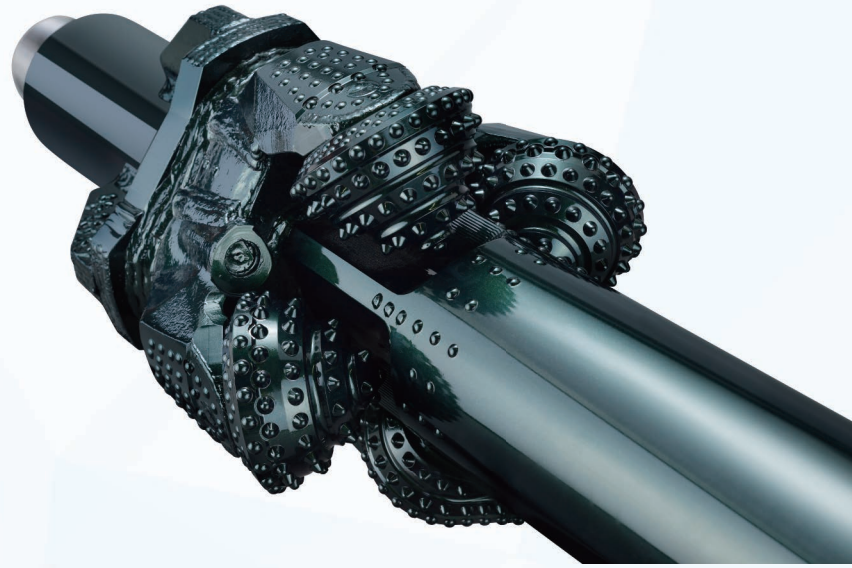
Diameter: 300 mm
Trenchless bit type: 3 x 8 1/2" 537 Composite seal
Connection thread: NC31



Diameter: 457 mm

Trenchless bit type: 4x12 1/4" 637 Metal seal

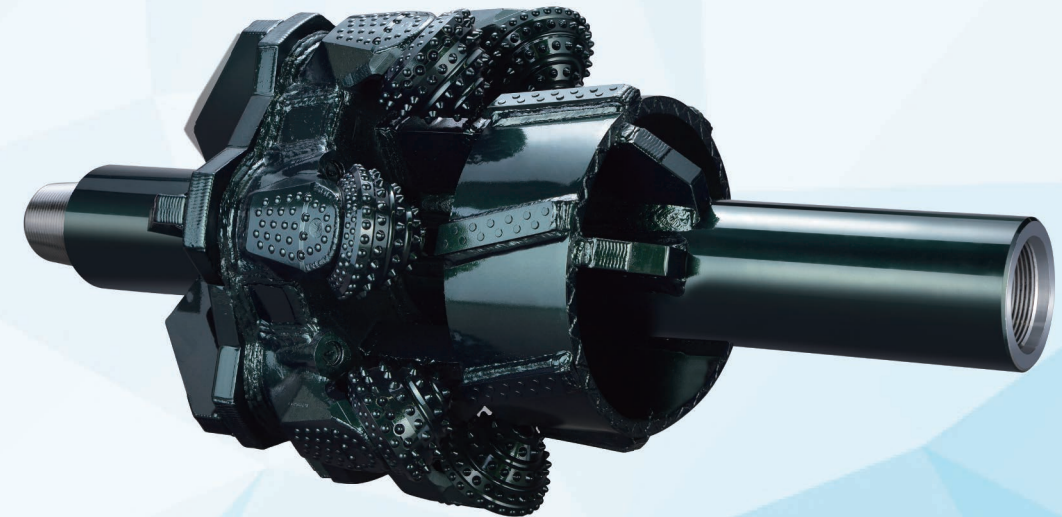
Connection thread: 5 1/2 FH



Diameter: 762 mm

Trenchless bit type: 7x12 1/4" 637 Metal seal

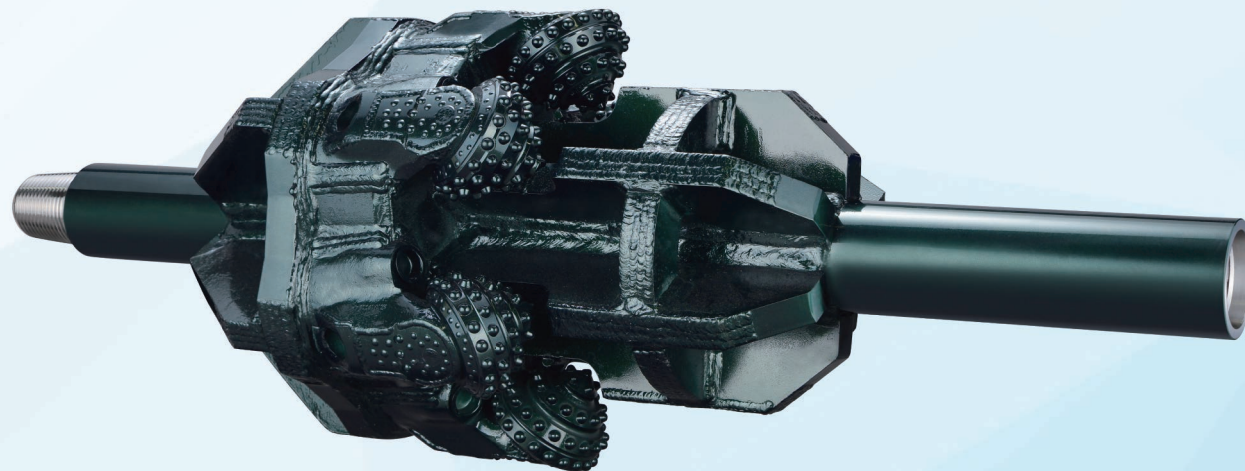
Connection thread: 6 5/8 FH



Diameter: 500 mm

Trenchless bit type: 5 x 9 7/8" 637 Metal seal

Connection thread: NC38



Diameter: 1066 mm

Trenchless bit type: 10x13 5/8" 637 Metal seal

Connection thread: 6 5/8 FH



Construction Cases

In recent years, with the launch of major national projects such as the China-Russia Eastern Route, West-to-East Gas Pipeline, and Sichuan-to-East Gas Delivery, demand for trenchless crossing construction has surged, placing higher technical requirements on horizontal directional drilling. Shareate roller reamers, renowned for their outstanding quality, have taken part in multiple key domestic projects and earned unanimous praise from clients.

- ◆ China-Russia Eastern Route Gas Pipeline—Shandong Network East Mainline Jiaohe $\Phi 1219$ crossing: 753 m in 85 MPa rock, completed with one Shareate rock reamer set.
- ◆ Qingdao Jiaozhou Bay Sub-sea Gas Line—Dagu River $\Phi 1016$ crossing: 2,485 m in 50 MPa rock, every stage drilled with a single Shareate rock reamer; highly commended by the client.
- ◆ China-Russia Eastern Route—Shandong Network East Mainline Hetai interchange $\Phi 1016$ crossing.
- ◆ Pipe China Fujian Network Phase II Nanxi $\Phi 1016$ crossing.
- ◆ Ningzhou Gas-Power Project, Beijing-Kowloon Railway $\Phi 813$ crossing.
- ◆ Hefei Gas Group Chaohu High-pressure Loop $\Phi 600$ crossing.
- ◆ Hefei Gas Group Medium-pressure Tie-in $\Phi 600$ crossing.
- ◆ Pipe China Guangdong “County-to-County” Gas Network.
- ◆ Shandong East Mainline crossing beneath S313 Expressway.
- ◆ Xiangshan China Resources Gas High-pressure Phase II $\Phi 273 \times 3\,960$ m (100 MPa+) directional crossing.
- ◆ Yantai Port West District—Longkou Yulong Island crude-oil pipeline Nanshan Hill $\Phi 711 \times 2\,387$ m (120 MPa) directional drill crossing.



Production

Shareate adopts advanced flexible manufacturing system to build production line with CNC machining center as the main body. The company has advanced heat treatment, welding and painting robot, as well as three coordinate detector, projector, electron microscope scanner, grating detector and other high-precision testing equipment. All of those provide Shareate with a solid foundation of reamers and segments manufacturing.

