



ROLLER CONE BITS

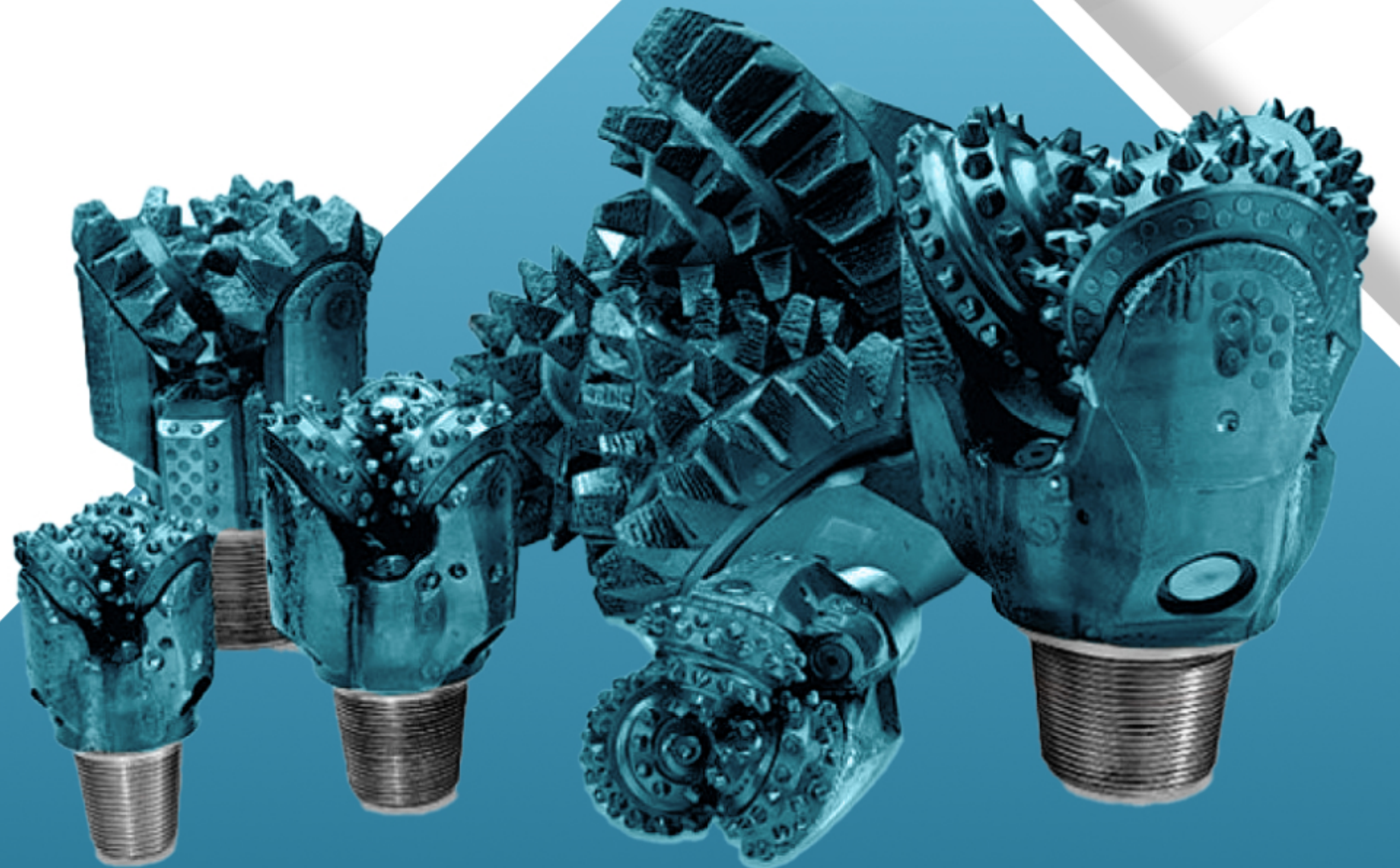




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ABOUT SPS

SPS is a leading drill bits and production materials manufacturer and supplier for the oil & gas and geothermal industry.

We manufacture using leading edge technology and high-quality materials, which ensures sustainable performance, reliability and durability of products.

Since 2020 we have modernized product lines, developed new designs and made field tested them and now new production has been launched.

Our recent growth can be clearly attributed to the adoption of the right technologies and a focus on recruiting talented employees.

The company's development strategy has diversified the product lines, expanded product delivery to new geographical locations.



WE OFFER OUR CUSTOMERS



EFFECTIVE
bit selection to specific applications



IMPROVED
drilling performance



RAPID MANUFACTURING
and delivery times



MORE COST-EFFECTIVE
drilling solutions



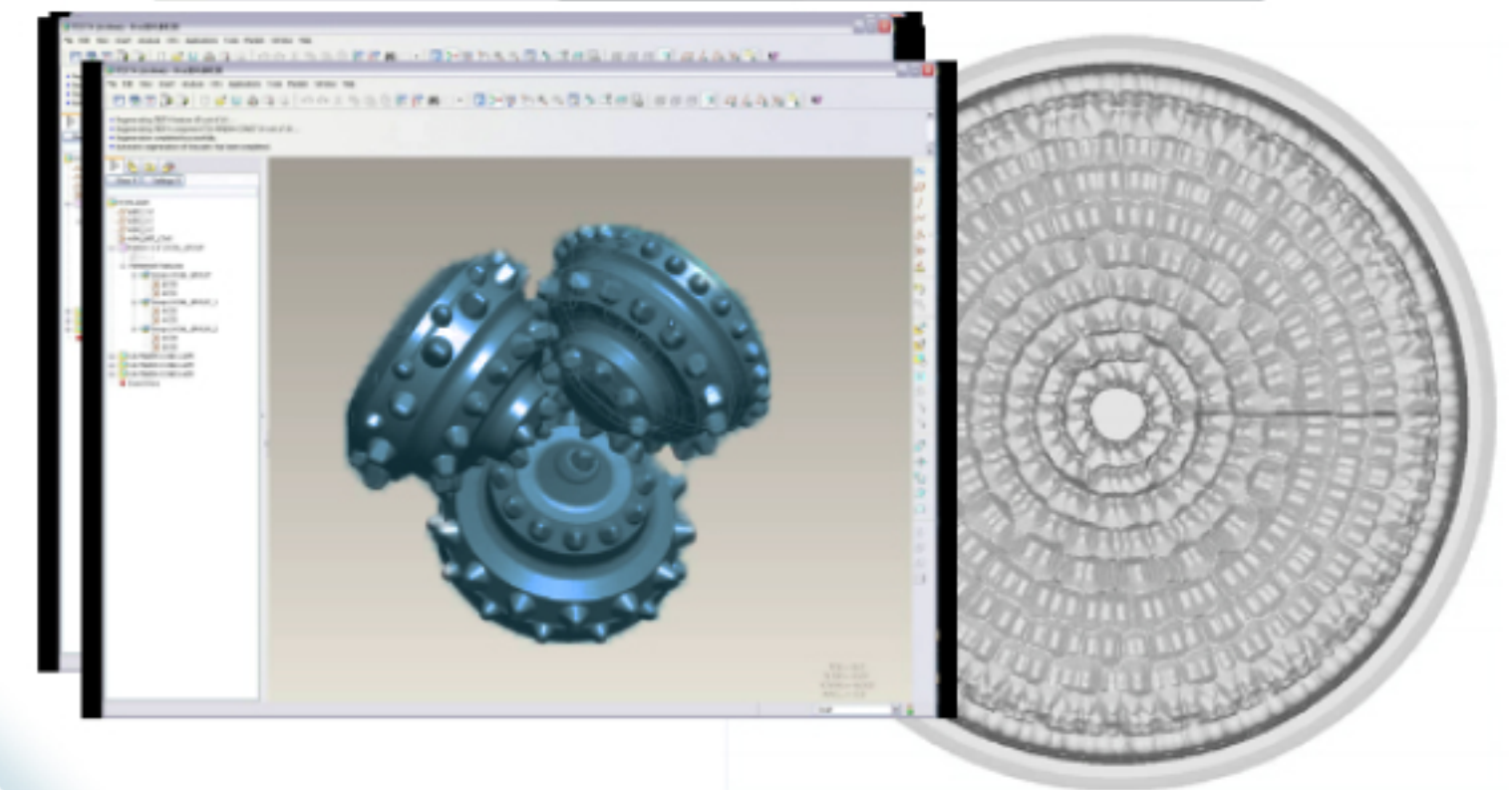
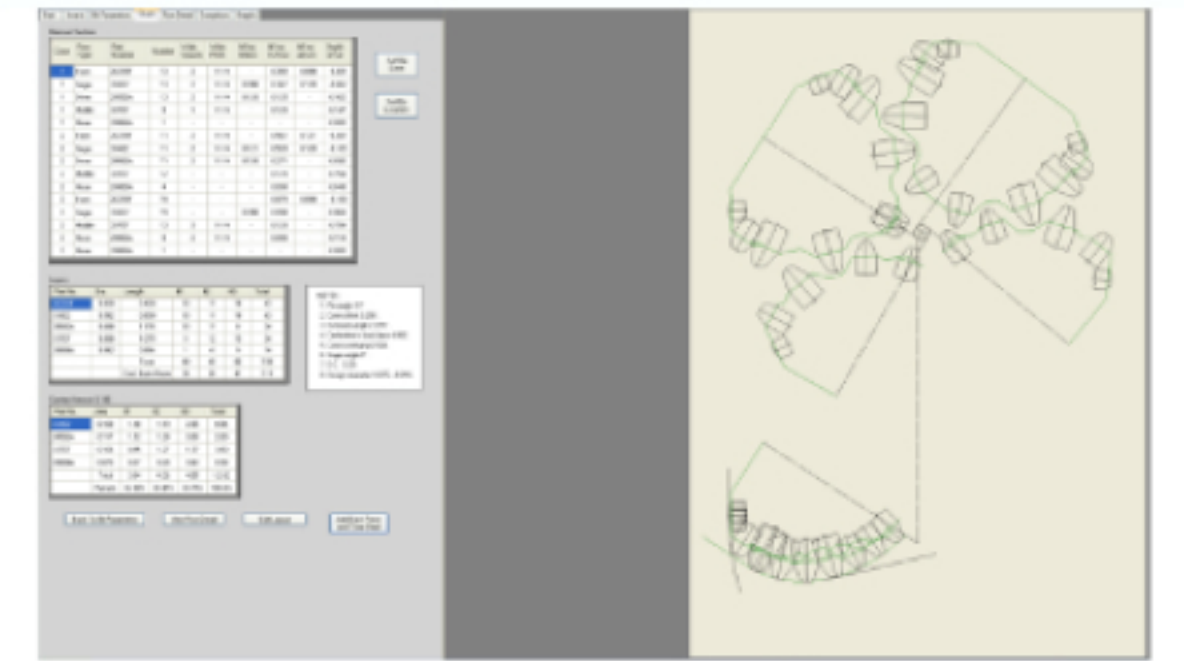
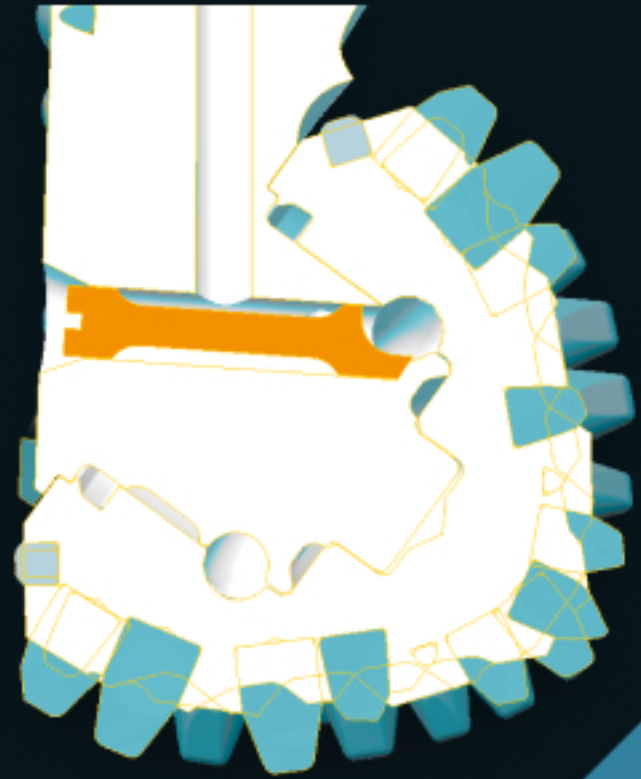
SPS DRILL BIT TECHNOLOGIES



Relying on many years of production experience and offset data of drill bit performances, we have developed our own designs and documentation to optimize drill bits for specific drilling conditions.

SPS BITS HAVE EXTENDED BEARING LIFE.

We have achieved this through focus on vibration resistance at the bearing seats and improved bearing seal performance.

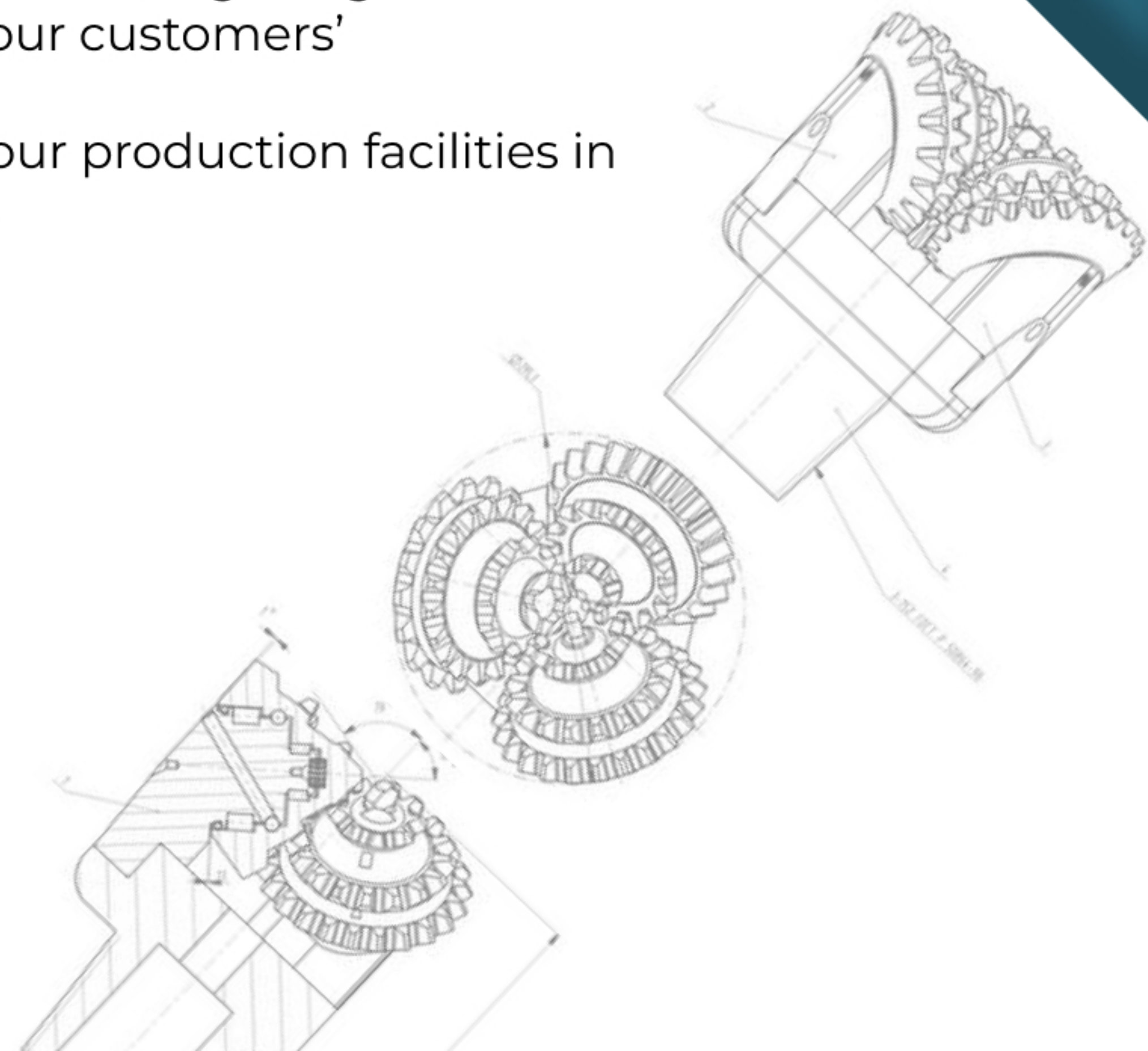




**THE RELIABILITY AND
EFFICIENCY OF OUR
ENGINEERING SOLUTIONS
HAVE BEEN CONFIRMED
IN REAL OPERATIONS AT
WELL SITES.**

**TODAY WE SUPPLY OVER 50
STANDARD SIZES OF DRILL BITS FROM
4 7/8" TO 26" (123.8 -660.4 MM),**
responsive to drilling parameters, geological
conditions, according to our customers'
requirements.

SPS manufacturing is at our production facilities in
Zhejiang Province, China.



8- 1/2" [215,9]

Bit size Inch (mm)



UR

Product line:
TN – Titan series
VR – Vector series
AZ – Azimut series

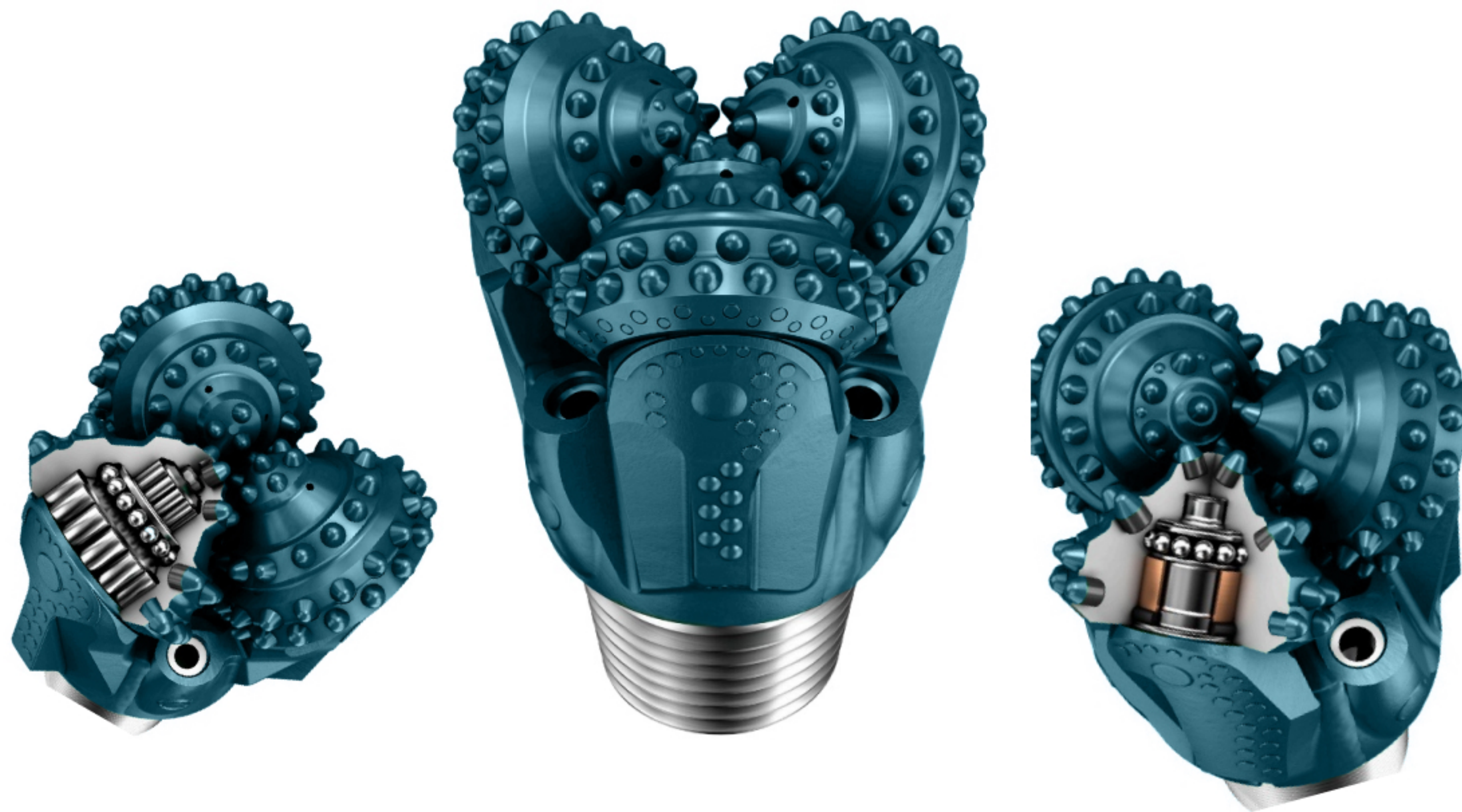
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IADC code

RS

SEAL TYPE:
RS – rubber seal
CS – composite seal
MS – metal seal

REFERENCES





BIT OPTIONS

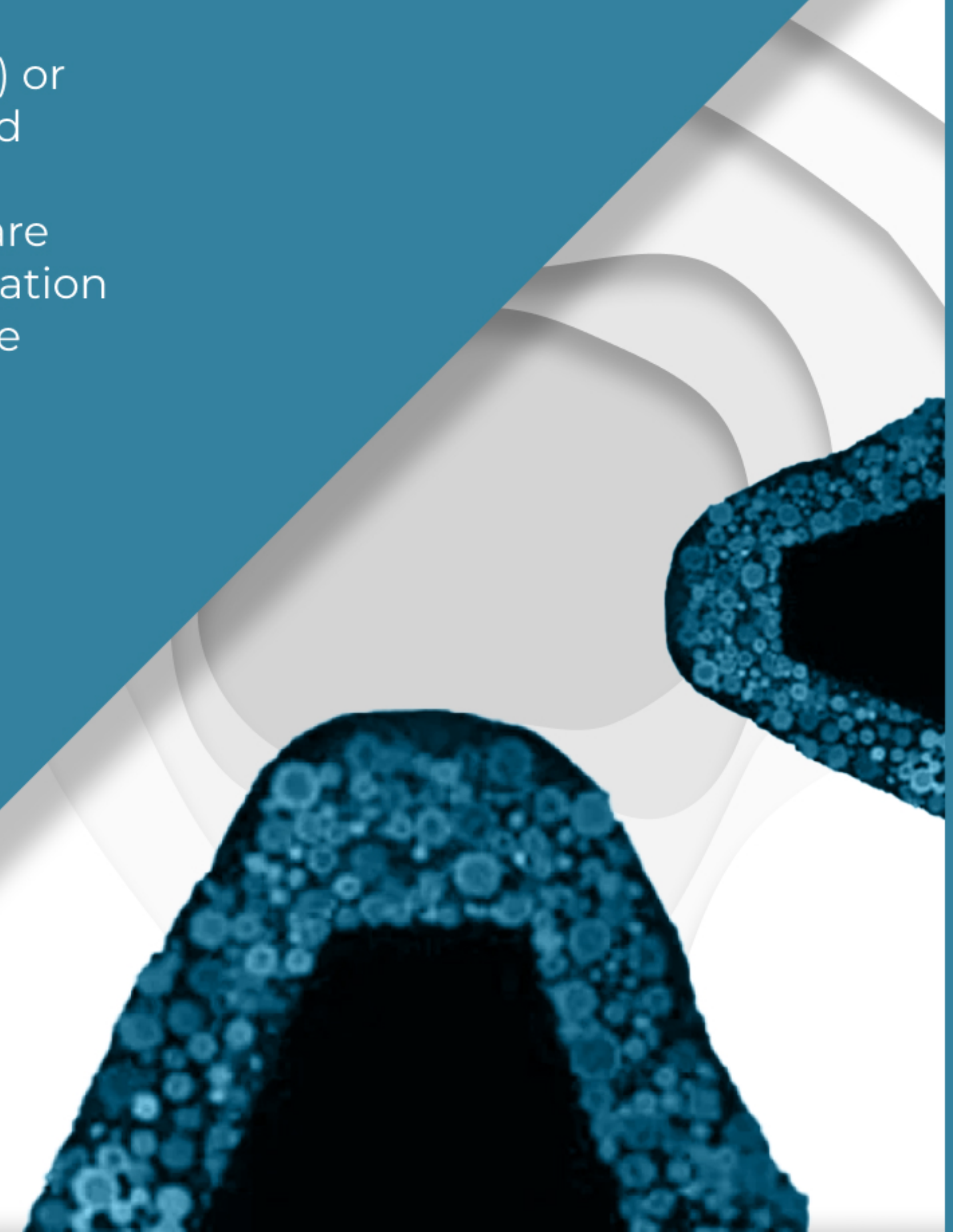




CUTTING STRUCTURE

The cutting structure can be steel (milled) or carbide inserts depending on the required application.

Steel milled teeth, including gage teeth, are hard faced with Tungsten Carbide. Application of the hard facing is controlled to optimize thickness.

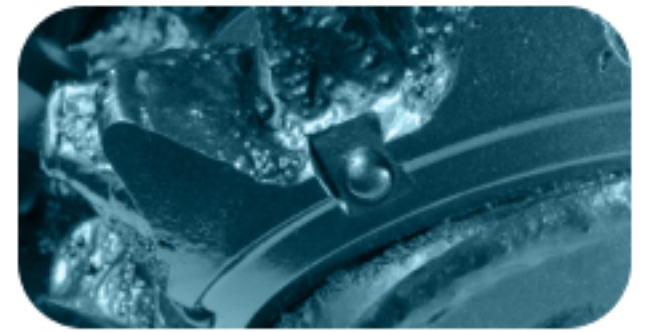




CARBIDE INSERT SHAPES CAN BE CONICAL, chisel or spherical, made from SPS's special hard alloy formula to increase strength and anti-wear properties.



THE GAGE ROW ON STEEL tooth bits can be reinforced with carbide inserts.



THE GAGE ROW ON TCI BITS CAN BE REINFORCED WITH HARDER - carbide inserts for additional wear resistance.



SHIRTTAIL Shirrtail can be reinforced with hard facing and TCI studs.





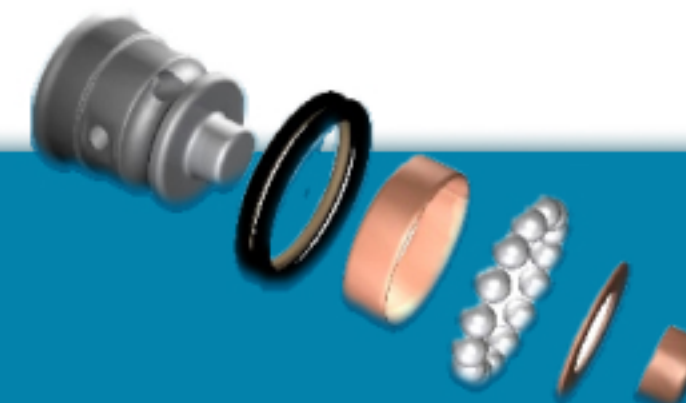
BEARING



Standard bit bearings are assembled with O-section elastomeric seals (RS), bushings and washers are of maximum sizes. This allows to high axial drilling loads on the bit to obtain maximum ROP rates when drilling hard rocks.



Optional composite seals (CS) are highly wear-resistant allowing extended durability at high rotary speeds .



The bushings and washers are coated with a layer of wear-resistant alloy, and the mating surfaces of the cone body are silver coated, which greatly increases the load capacity of the bearing.

ALL OUR BEARINGS ARE PACKED WITH A SPECIAL GREASE WHICH WILL MAINTAIN ITS PROPERTIES AT INCREASED TEMPERATURES.

SELF-DRAINING RESERVOIR

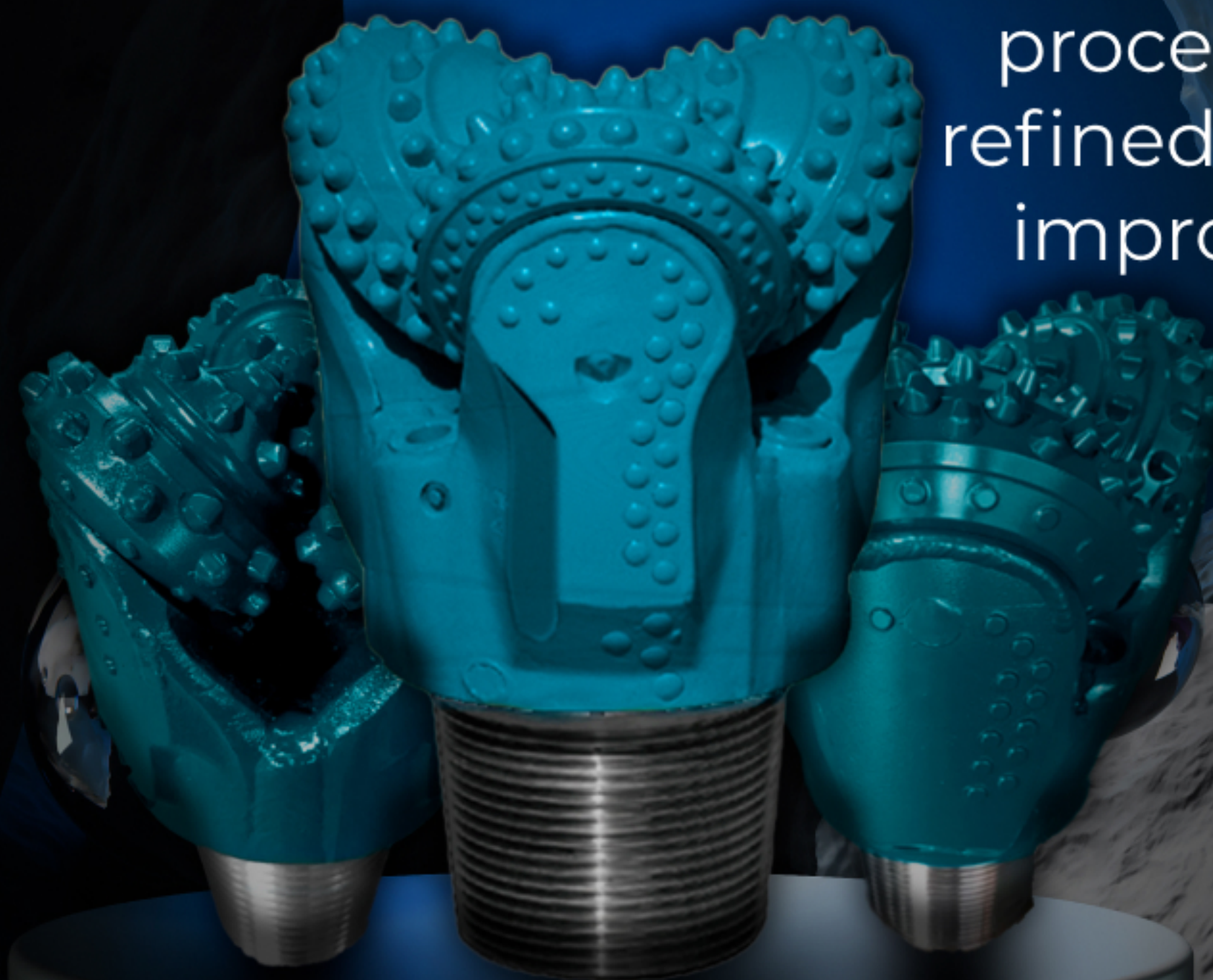
The bearing lubrication system is designed to compensate grease consumption and pressure during long term operation and extra bit runs. It consists of a grease reservoir with rigidly mounted cap, a flexible diaphragm, metal canister for protection and channels to connect the grease reservoir with friction areas in bearings. The grease formula allows to retain lubricating properties at high temperatures.





**ALL SPS BITS HAVE BEEN
DESIGNED USING AN
INTEGRATED SYSTEM
APPROACH.**

At each point in the development process, bit components have been refined and enhanced with a drive to improve durability and drilling rate.



TITAN SERIES

TITAN – LARGE DIAMETER BITS FOR THE FIRST SECTION, CONDUCTOR AND TECHNICAL CASING DRILLING.

Advanced cutting structures – both in TCI and steel tooth, reliable bearing packages engineered for dependable service in the most demanding applications and optimum features designed to allow for customization to enhance bit performance in particularly challenging drilling conditions.

Due to the increased demand for large diameter roller cone bits, SPS invested heavily to expand our product by implementing “lean” manufacturing operations. This investment in equipment has improved manufacturing efficiencies resulting in optimum product availability, which allows our customers to reduce costs and time.

Available from 11 5/8" up to 26" (295.3 mm – 660.4 mm).



STEEL TOOTH BITS

Size, Inch	Size, mm	Product line	IADC	Connection		Approximate Net Weight, kg
				API	GOST	
11-5/8	295.3	TN	from 111 to 317	6-5/8 Reg	3-152	80
12	304.8					85
12-1/4	311.2					96
12-5/8	320.7					105
13-1/8	333.4					112
13-5/8	346.1					118
13-3/4	349.3					120
14-1/2	368.3					147
14-3/4	374.7					7-5/8 Reg
15-1/2	393.7			165		
16	406.4			176		
17-1/2	444.5			203		
20	508			282		
22	558.8			495		
24	609.6			518		
26	660.4			574		

TCI BITS

Size, Inch	Size, mm	Product line	IADC	Connection		Approximate Net Weight, kg		
				API	GOST			
11-5/8	295.3	TN	OT 415 AO 637	6-5/8 Reg	3-152	87		
12	304.8					95		
12-1/4	311.2					96		
12-5/8	320.7					112		
13-1/8	333.4					120		
13-1/2	342.9					135		
13-5/8	346.1					136		
13-3/4	349.3					140		
14-1/2	368.3					7-5/8 Reg	3-177	147
14-3/4	374.7							153
15-1/2	393.7			180				
16	406.4			238				
17-1/2	444.5			251				
20	508			300				
22	558.8			506				
24	609.6			529				
26	660.4			596				

VECTOR SERIES

VECTOR – MEDIUM SIZE BITS FOR PRODUCTION CASING, PILOT BOREHOLE DRILLING, KICK-OFF FROM THE CEMENT PLUGS ETC.

This series includes engineering solutions that increase bit performance in tough conditions with high rotary speeds and axial loads. The “anti-shale packing” configuration is incorporated, providing better cuttings clearance away from the bearing seal.

The special TCI formula of shirrtail protection significantly increases durability in directional drilling applications.

Available from 7-1/2" up to 10-5/8" (190.5 mm – 269.9 mm).



STEEL TOOTH BITS

Size, Inch	Size, mm	Product line	IADC	Connection		Approximate Net Weight, kg
				API	GOST	
7-1/2	190.5	VR	OT 117 AO 317	4-1/2 Reg	3-117	31
7-5/8	193.7					32
7-7/8	200.0					35
8-1/2	215.9					37
8-5/8	219.1					38
8-3/4	222.3					38
9-1/2	241.3			6-5/8 Reg	3-152	58
9-5/8	244.5					59
9-7/8	250.8					60
10-1/2	266.7					65
10-5/8	269.9					71
11	279.4					74

TCI BITS

Size, Inch	Size, mm	Product line	IADC	Connection		Approximate Net Weight, kg
				API	GOST	
7-1/2	190.5	VR	OT 415 AO 637	4-1/2 Reg	3-117	33
7-5/8	193.7					34
7-7/8	200.0					35
8-1/2	215.9					40
8-5/8	219.1					40,5
8-3/4	222.3					40,5
9-1/2	241.3			6-5/8 Reg	3-152	60
9-5/8	244.5					61
9-7/8	250.8					62
10-1/2	266.7					65
10-5/8	269.9					79
11	279.4					85

AZIMUTH SERIES

AZIMUTH – SMALL DIAMETER BITS DESIGNED FOR REDUCED SIZE CASING PROGRAMS, RE-ENTRIES, MULTI-LATERALS, AND COILED TUBING DRILLING.

These bits provide excellent steerability and high rates of penetration even when weight on bit is limited. Bearing package provides long, reliable performance in deep hole, long reach sections where increased RPMs in motor applications are commonly required.

The cutting structure designed for increased drilling speed and unsurpassed steerability.

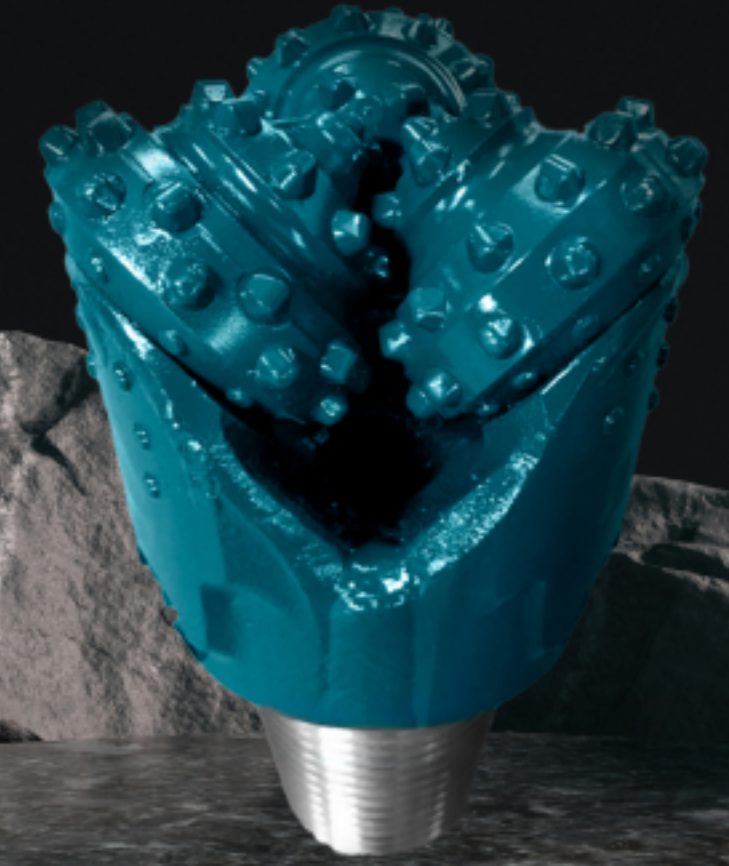
Bits up to 5" (127.0 mm) design include one central nozzle port.

To increase the durability of the bit, a composite seal (CS) or a metal seal (MS) can be requested when placing an order.

The metal seal is an advanced design that is ideal for high RPM directional and horizontal drilling.

The metal seal bearing life is 35% higher than elastomeric seal bearing in average.

Available from 4-7/8" up to 6-1/2" (123.8 mm – 165.1 mm).



STEEL TOOTH BITS

Size, Inch	Size, mm	Product line	IADC	Connection		Approximate Net Weight, kg
				API	GOST	
4-7/8	123.8	AZ	OT 117 ΔO 317	2-7/8 Reg	3-76	7
5	127.0					10
5-1/2	139.7					12,5
5-5/8	142.9			3-1/2 Reg	3-88	12,5
5-3/4	146.1					13
5-7/8	149.2					13
6	152.4					14
6-1/4	158.8					18
6-1/2	165.1			21		

TCI BITS

Size, Inch	Size, mm	Product line	IADC	Connection		Approximate Net Weight, kg
				API	GOST	
4-7/8	123.8	AZ	OT 415 ΔO 637	2-7/8 Reg	3-76	8
5	127.0					10,4
5-1/2	139.7					11
5-5/8	142.9			3-1/2 Reg	3-88	12,5
5-3/4	146,1					13
5-7/8	149,2					14
6	152.4					15,8
6-1/4	158.8					18
6-1/2	165.1			20		

NOZZLE TOTAL FLOW AREA (TFA) TABLE

Nozzle size, Inch	Total Flow Area (TFA)			
	1 nozzle	2 nozzles	3 nozzles	4 nozzles
7/32	0 .0376	0 .0752	0 .1127	0 .1503
8/32	0 .0491	0 .0982	0 .1473	0 .1963
9/32	0 .0621	0 .1243	0 .1864	0 .2485
10/32	0 .0767	0 .1534	0 .2301	0 .3068
11/32	0 .0928	0 .1856	0 .2784	0 .3712
12/32	0 .1104	0 .2209	0 .3313	0 .4418
13/32	0 .1296	0 .2592	0 .3889	0 .5185
14/32	0 .1503	0 .3007	0 .4510	0 .6013
15/32	0 .1726	0 .3451	0 .5177	0 .6903
16/32	0 .1963	0 .3927	0 .5890	0 .7854
17/32	0 .2217	0 .4433	0 .6650	0 .8866
18/32	0 .2485	0 .4970	0 .7455	0 .9940
19/32	0 .2769	0 .5538	0 .8307	1 .1075
20/32	0 .3068	0 .6136	0 .9204	1 .2272
21/32	0 .3382	0 .6765	1 .0147	1 .3530
22/32	0 .3712	0 .7424	1 .1137	1 .4849
24/32	0 .4418	0 .8836	1 .3254	1 .7671
26/32	0 .5185	1 .0370	1 .5555	2 .0739
28/32	0 .6013	1 .2026	1 .8040	2 .4053
30/32	0 .6904	1 .3808	2 .0711	2 .7615
32/32	0 .7855	1 .5710	2 .3565	3 .1420



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