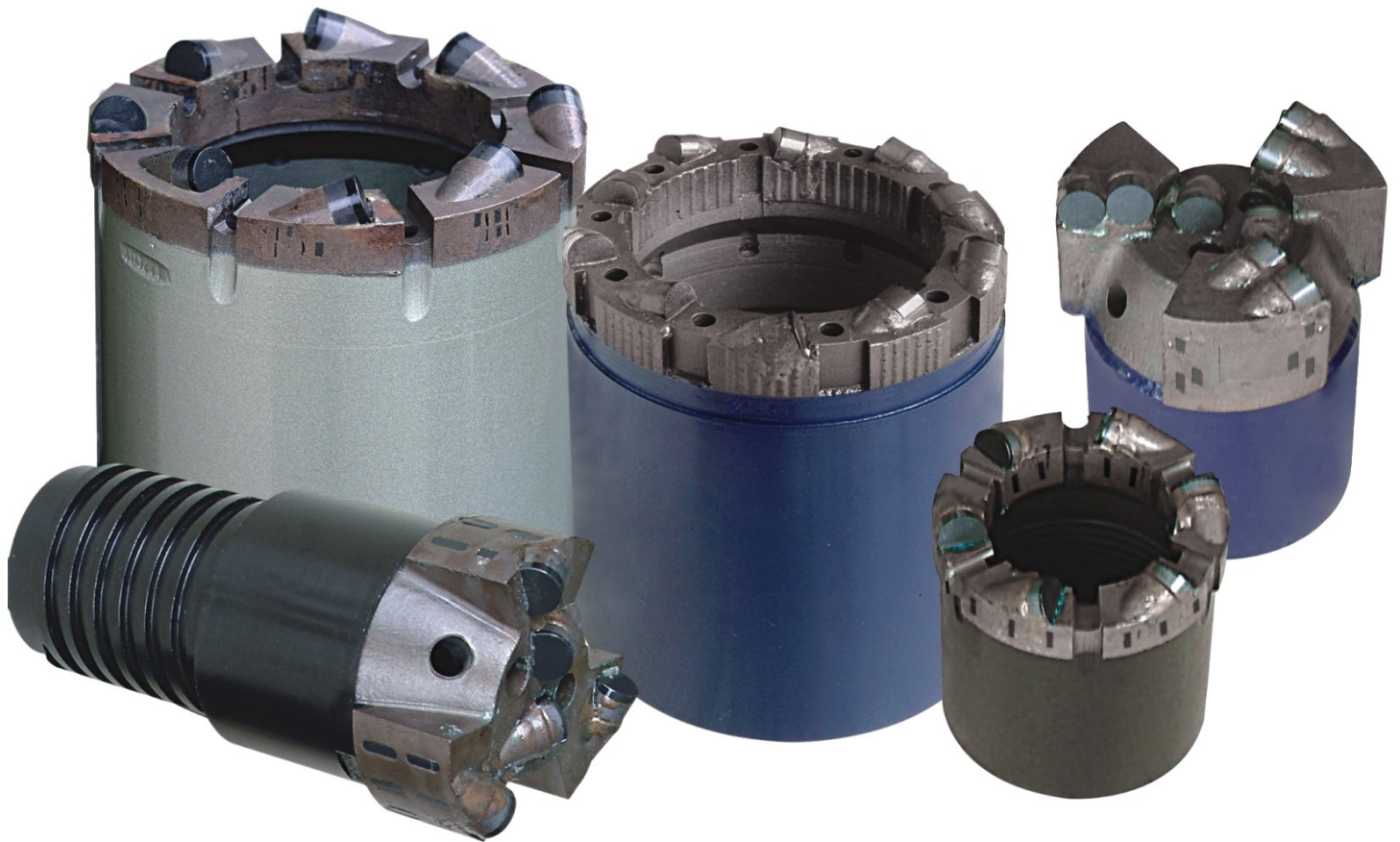




DYNAMIC SUPPLY

DRILLING TOOLS SOLUTIONS

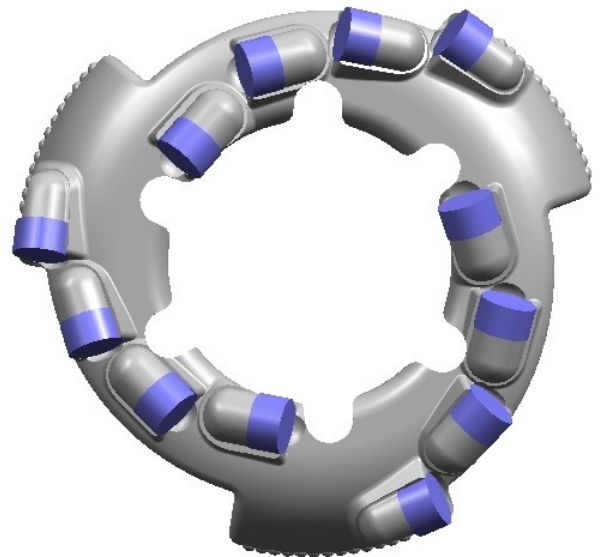
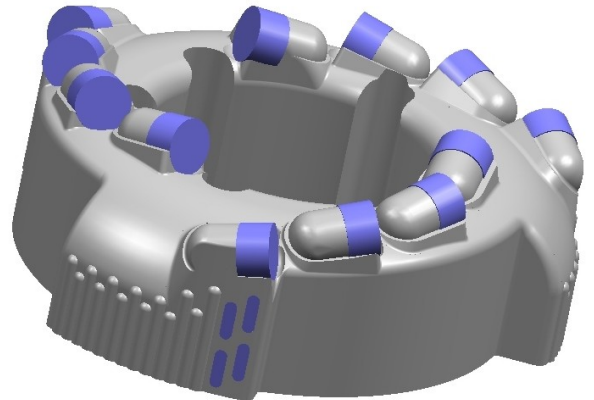
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TTI 12 Pack Core Bit



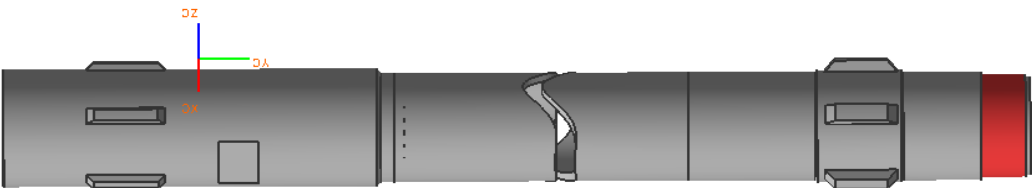
Item No.	OD	ID	No. of Blades	No. PDC	PDC Size
TTI-550-250SP12	5 1/2"	2 1/2"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-550-275SP12	5 1/2"	2 3/4"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-550-300SP12	5 1/2"	3"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-575-250SP12	5 3/4"	2 1/2"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-575-275SP12	5 3/4"	2 3/4"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-575-300SP12	5 3/4"	3"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-601-250SP12	6 1/8"	2 1/2"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-601-275SP12	6 1/8"	2 3/4"	3 Blades	12	13mm x 8mm With 2mm of Diamond
TTI-601-300SP12	6 1/8"	3"	3 Blades	12	13mm x 8mm With 2mm of Diamond

* All other sizes available upon request.

The TTI 12 Pack Core bit is constructed with a matrix body with inner and outer tungsten carbide gauge protection that extends the bit life. The 13mm x 8 mm PDC cutters are of high quality with 2mm of diamond reducing costly repairs. This bit is available with slots for ease of break out.

Replaceable PDC cutters are available part No. TTI-130802PD refer to page 14

TTI Double Tube Core Barrel 4 5/8"

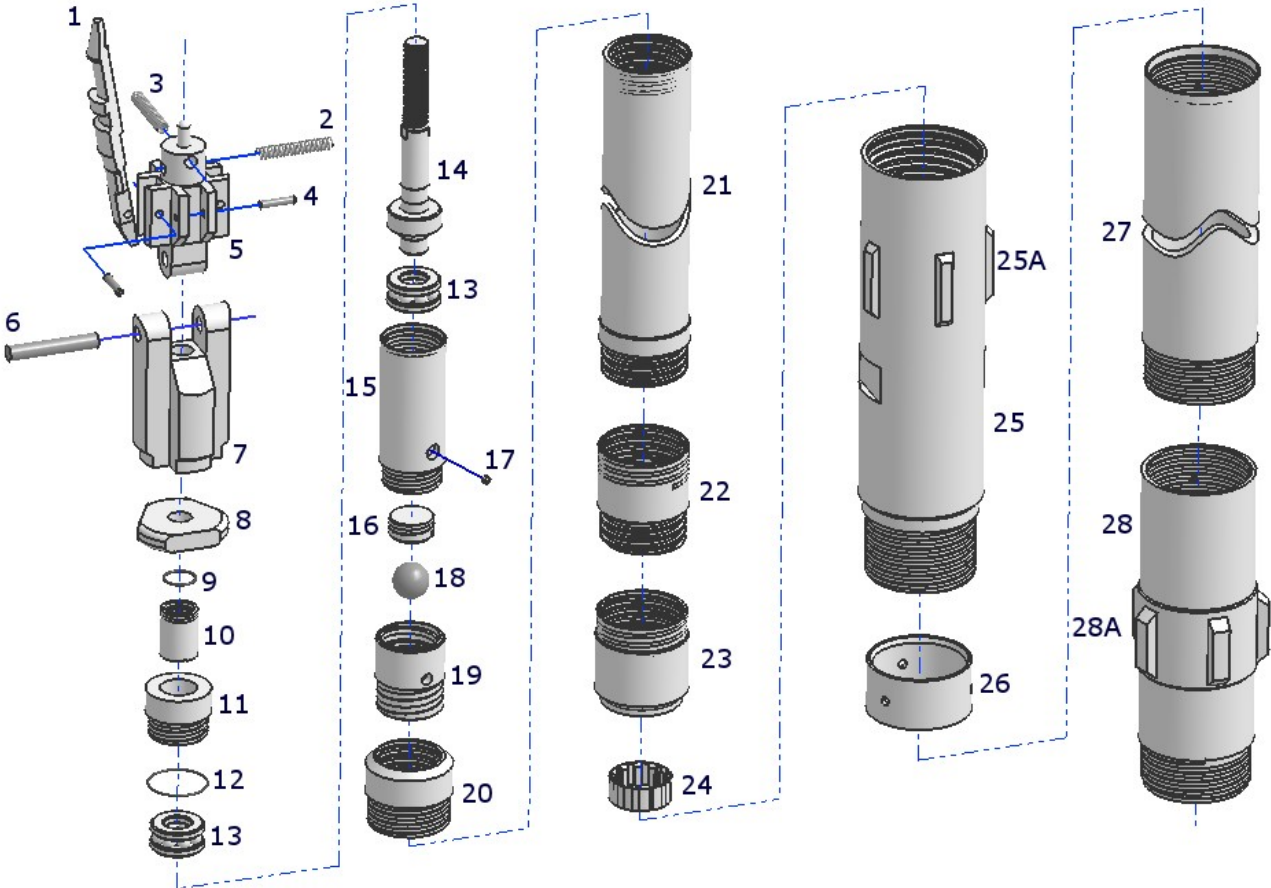


Item	Description	Qty
	Core Barrel Assy 10Ft/3.0m 1-28	
	Inner Tube Assy 10 Ft/3.0m 1-24	
	Quad-Latch Assy 1-7	
	Bearing Assy 8-20	
1	Quad Finger	4
2	Spring Red	1
3	Spring Gold	1
4	Pin	4
5	Pivoting Head Top Base	1
6	Pin	1
7	Pivoting Head Bottom Base	1
8	Landing Shoulder Nut	1
9	O-Ring Upper	1
10	Inner Bearing Retainer	1
11	Outer Bearing Retainer	1
12	O-Ring Lower	1
13	Thrust Bearing	2

Item	Description	Qty
14	Bearing Shaft	1
15	Bearing Housing	1
16	Pipe Plug, Socket Head	1
17	Grease Fitting	1
18	By-Pass Ball	1
19	Fluid By-Pass Adaptor	1
20	Inner Tube Connector	1
21	Inner Tube	1
22	Inner Tube Shoe Upper	1
23	Inner Tube Shoe Lower	1
24	*Core Lifter	1
25	Locking Coupling/Reaming Shell	1
25A	**Tungsten Carbide Wear Pads	6
26	Landing Shoulder Ring	1
27	Outer Tube 10ft/3.0m	1
28	Outer Tube Sub/Reaming Shell	1
28A	**Tungsten Carbide Wear Pads	6

*Core Lifters vary by coarseness

**T.C. Wear Pad Size is determined by bit size



TTI PDC Bit Series

A wide range of PDC drill bits are available and are used in numerous applications, within Water well, Geothermal, Exploration, Civil and Mining.

TTI PDC Bits are manufactured with a MATRIX Crown increasing wear resistance compared to the steel crown bits.

TTI can supply many different types and sizes of PDC bits. The bits shown bellow are only some of the typical configurations. If the bits that are shown cannot meet your requirements, we can also design and produce PDC bits according to your special requests or according to your drawings / samples provided.



TTI PDC Flat Face Bit Series



TTI PDC Reamer Bit Series



TTI PDC Drag Bit Steel Body Series



TTI Impregnated Bit Series



- ① Turbo Type Bit
- ② V-Ring Type Bit
- ③ Deep Hole Bit
- ④ Gear Type Bit
- ⑤ Cylinder Type Bit
- ⑥ Stepped Bit
- ⑦ DHM Bit

The main technical parameters of impregnated diamond core bits include diamond type, size, concentration and diamond grade, Matrix hardness and crown shapes etc. Careful selections according to rock formations, will increase ROP. To avoid excessive bit wear, diamond carbide inserts are used on both sides of the water way and large diamonds are used on the inside and outside of the

Impregnated Bit Matrix Selection

Rock Type	Abrasiveness	Rock Hardness	Matrix Harness	Series .NO	Color
Clay, Shale, Siltstone, Gypsum	Medium	Soft	HRC 50°	Series 1	●
Ash Stone, Coal, Argillite, Volcanic, Sandy Pebble	Very High	Soft	HRC 48-50°	Series 1/2	●
Sandstone, Sandy Shale, Lithoid Limestone, Limonite	Very High	Medium Soft	HRC 45-48°	Series 1/2	●
Med-hard Limestone, Med-hard Shale, Med-hard Ash Stone	High	Medium	HRC 40-45°	Series 3/4	●
Marble, Hard Schist, Hard Streak Stone	Medium	Medium	HRC 38-42°	Series 5/6/7	●
Diabase, Andesite, Gneiss	Medium	Medium Hard	HRC 38°	Series 6/7	●
Granodiorite, Limonite	Medium	Medium Hard	HRC 35-38°	Series 7/8	●
Granite, Basalt, Hard Streak Stone	Med to Low	Hard	HRC 32-35°	Series 8/9	●
Rhyolite, Crystalize Gneiss, Quartz Porphyry	Med to Low	Hard	HRC 25-30°	Series 9/10	●
Siliceous Stone, Hard Sandstone	Med to Low	Extreme Hard	HRC 20-25°	Series 11/12	○
Rhyolite, Dense Quartzite, Iron Stone	Low	Ultra Hard	HRC 10-20°	Series 12	○

TTI Matrix Comparison Table

TTI	LONGYEAR	HOBIC	HOFFMAN	FORDIA	HUDDY
Series 12	#10 #10 / #9 / 9-F	#10 #9	10-Copper/Blake 9-Copper/Blue	DXP-2 Shark #9	H-10 H-8/Gold
Series 11/10	#9 / #9-F	#9	9-Copper/Blue	Shark #9	H-6
Series 09	#8	#8	8-Copper	Shark #7	Copper
Series 08	#8 / #7-F	#7-R / #7-C	8-Copper	Shark #7	Yellow
Series 07	#7	#7AA / #7	7-Bronze	P-200/P-150	Orange
Series 06	#7	#6	7-Bronze	DXP-33	Red
Series 05	#6	#5 / #4	6-Gray	P-150	
Series 04	#6	#4 / #3	6-Grey	DXP-33	Green
Series 03	#4 / #2		5-Blue	P-155	Silver-Blue
Series 03	#2	#3	2-Green(Dark)	P-155	Blue
Series 02	#1	#2	1-Saper Green(Light)	P-160	
Series 01	#2 / #1	#1	6-Grey	DXP-2 P-150	Black

Remarks: The above comparison is based on the similarity between our bits and other companies bits. This table is just for your reference, when ordering bits, please choose bits according to your rock formations.

TTI Q Series Coring Bits



PDC Coring Bits with/without face discharge: Good cutting, fast penetration, long bit life in soft / Medium hard rock formations.



Tungsten Carbide Core Bits with/without face discharge holes: Economy price and fast penetration. It is applied to soft rock formations.

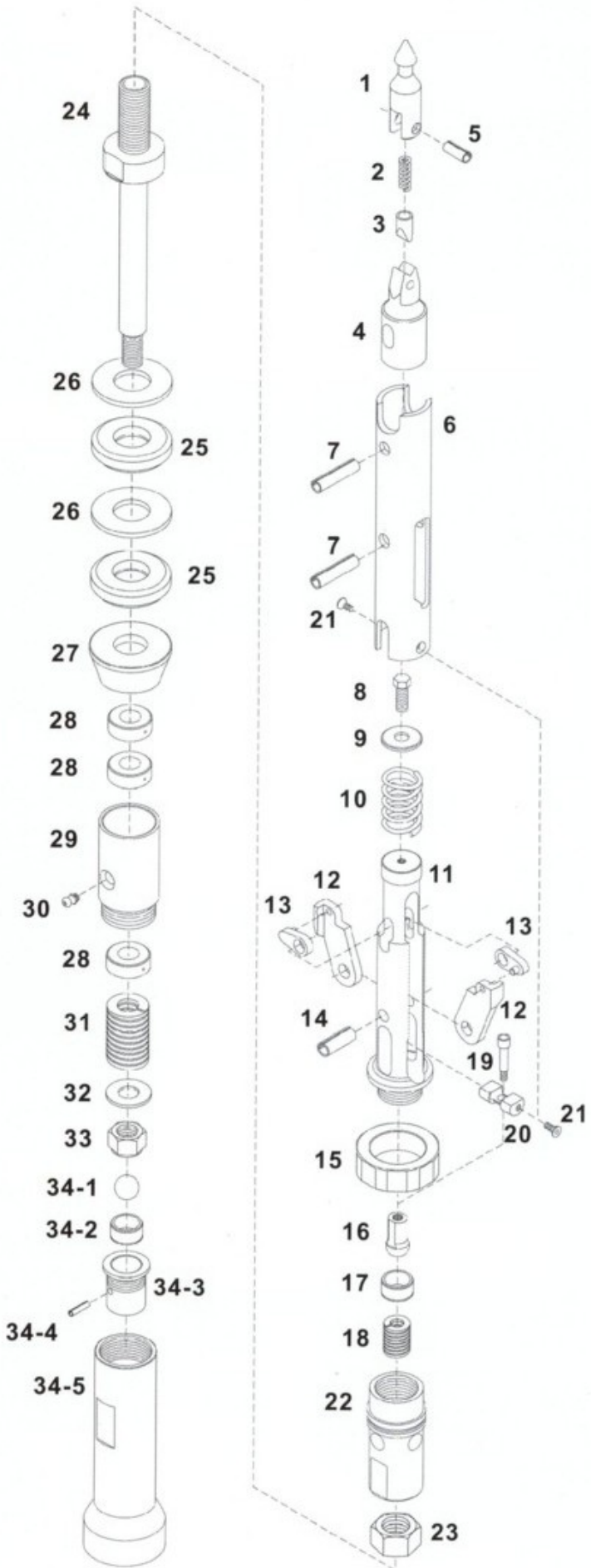
TTI Wireline Corebarrel Assembly NQ & HQ



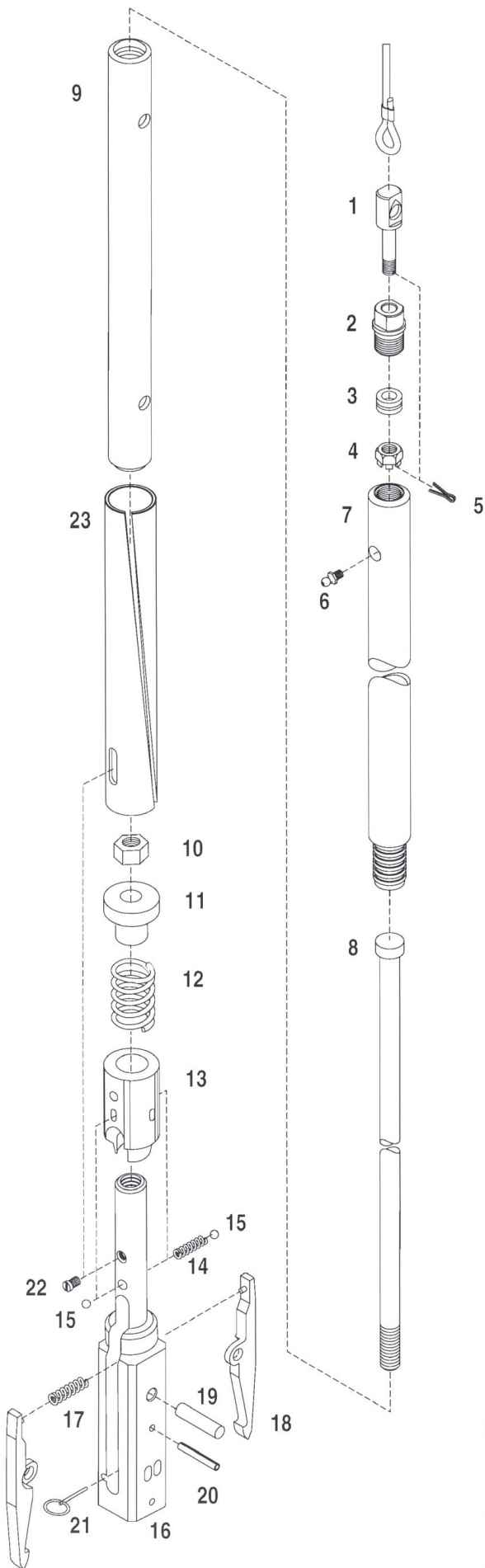
Item	Part No		Description	Weight		
	NQ	HQ		No	NQ	HQ
	NQ-A-1	HQ-B-1	Core Barrel Assy 5 Ft		39	70
	NQA-2	HQ-B-2	Core Barrel Assy 10 Ft		60	103
	NQ-A-3	HQ-B-3	Inner Tube Assy 5Ft		17	30
	NQ-A-4	HQ-8-4	Inner Tube Assy 10 Ft		21	39.0
	NQ 0000	HQ 0000	Head Assy		10	19
1	NQ 0001	HQ 0001	Spearhead Point	1	0.2	0.2
2	NQ 0002	HQ 0002	Compression Spring	1	*	*
3	NQ 0003	HQ 0003	Detent Plunger	1	*	*
4	NQ 0004	HQ 0004	Spearhead Base	1	0.36	0.8
5	NQ 0005	HQ 0005	Spiral Pin	1	*	*
6	NQ 0006	HQ 0006	Latch Retracting Case	1	1.1	2.95
7	NQ 0007	HQ 0007	Spring Pin	2		
8	NQ 0008	HQ 0008	Bolt	1		
9	NQ 0009	HQ 0009	Washer	1		
10	NQ 0010	HQ 0010	Upper Latch Body	1		
11	NQ 0011	HQ 0011	Latch Spring	1	1.4	2.3
12	NQ 0012	HQ 0012	Latch	2	0.3	0.7
13	NQ 0013	HQ 0013	Link	2		
14	NQ 0014	HQ 0014	Spring Pin	1		
15	NQ 0015	HQ 0015	Stainless Steel Ball, 22mm	1		
16	NQ 0016	HQ 0016	Landing Indicator Bushing	1		
17	NQ 0017	HQ 0017	Landing Shoulder	1	0.14	0.2
18	NQ 0018	HQ 0018	Lower Latch Body	1	1.2	2.3
19	NQ 0019	HQ 0019	Hex Nut	1		
20	NQ 0020	HQ 0020	Spindle	1	1.4	
21	NQ 0021	HQ 0021	Shut-Off Valve, Hard	2		
22	NQ 0022	HQ 0022	Valve Adjusting Washer	2		
23	NQ 0023	HQ 0023	Thrust Bearing	2		
24	NQ 0024	HQ 0024	Spindle Bearing	1	0.7	1.8
25	NQ 0025	HQ 0025	Hanger Bearing	1		
26	NQ 0026	HQ 0026	Compression Spring	1		0.5
27	NQ 0027	HQ 0027	Self Lock Nut	1		
	NQ 0028	HQ 0028	Inner Tube Cap Assembly(28.29.30.31)	1	1.5	3.3
28	NQ 0029	HQ 0029	Grease Fitting	1		
29	NQ 0030	HQ 0030	Stainless Steel Ball	1		
30	NQ 0031	HQ 0031	Inner Tube Cap	1	1.3	3.1
31	NQ 0032	HQ 0032	Check Valve Body	1	1.42	2.9
32	NQ 0033152	HQ 0033152	Inner Tube 1.52m/5Ft	1	5.6	8.1
32	NQ 0033305	HQ 0033305	Inner Tube 3.05/10Ft	1	11.1	16.1
33	NQ 0034	HQ 0034	Stop Ring	1		
34	NQ 0035	HQ 0035	Core Lifter	1		
35	NQ 0036	HQ 0036	Fluted Core Lifter	1		
36	NQ 0037	HQ 0037	Core Lifter Case	1		
37	NQ 0038	HQ 0038	Locking Coupling	1	2.5	4.3
38	NQ 0039	HQ 0039	Landing Ring	1	0.2	0.3
39	NQ 0040152	HQ 0040152	Outer Tube 1.52m/5Ft	1	20.0	25.9
39	NQ 0040305	HQ 0040305	Outer Tube 3.05m/10Ft	1	35.9	51.4
40	NQ 0041	HQ 0041	Inner Tube Stabilizer	1	0.16	0.26
41	NQ 0042	HQ 0042	Thread Protector	1	1.8	3.5

TTI PQ Head Assembly

Item	Description	Qty
	Core Barrel Assy 10Ft	1
	Inner Tube Assy 10 Ft	1
	Head Assy	1
1	Spearhead Point	1
2	Compression Spring	1
3	Detent Plunger	1
4	Spearhead Base	1
5	Spiral Pin	1
6	Latch Retracting Case	1
7	Spring Pin	2
8	Bolt	1
9	Washer	1
10	Latch Compression Spring	1
11	Upper Latch Body	1
12	Latch	2
13	Link	2
14	Spring Pin	1
15	Landing Shoulder	1
16	Threaded Ball	1
17	Fluid Retention Bushing	1
18	Fluid Retention Spring	1
19	Shoulder Belt	1
20	Dry Hole Valve Holder	1
21	Nylon Insert Machine Screw	2
22	Lower Latch Body	1
23	Hex Nut	1
24	Spindle, Hollow	1
25	Shut-off Valve	2
26	Valve Adjusting Washer	2
27	Washer, Tapered	1
28	Thrust Bearing	3
29	Spindle Bearing	1
30	Grease Fitting	1
31	Compression Spring	1
32	Washer	1
33	Strover Lock Nut	1
34	Inner Tube Cap Assembly	1
34-1	Stainless Steel Ball 22mm	1
34-2	Bushing	1
34-3	Check Valve Body	1
34-4	Spring Pin	1
34-5	Inner Tube Cap	1



TTI Ezy Lock Overshot Assembly NQ & HQ



Item	Part No	Description	No
1	D-1	Eye Bolt	1
2	D-2	Cable Swivel	1
3	D-3	Thrust Bearing	1
4	D-4	Castle Nut	1
5	D-5	Cotter Pin	1
6	D-6	Grease Fitting	1
7	D-7	Cable Swivel Body	1
8	D-8	Jar Staff	1
9	D-9	Jar Tube	1
10	D-10	Hex Nut	1
11	D-11	Cap, Ezy Lock O/Shot	1
12	D-12	Spring, Ezy Lock O/Shot	1
13	D-13	Sleeve, Ezy Lock O/Shot	1
14	D-14	Compression Spring	1
15	D-15	Ball	2
16	D-16	Ezy Lock Overshot Head	1
17	D-17	Compression Spring	1
18	D-18	Lifting Dog	2
19	D-19	Plain Pin	1
20	D-20	Spring Pin	1
21	D-21	Locking Pin	1
22	D-22	Set Screw	1
23	D-23	Locking Sleeve	1



TTI Diamond Reaming Shell

Diamond Reaming Shells are to be used together with core bits. Its main functions are maintaining the bore hole gage, improving drill rod stability and protecting the core barrel from excessive wear. Helical type reaming shells provides good passage for cuttings and water.



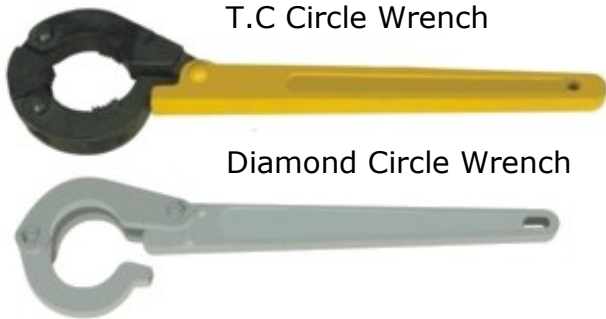
TTI Wire-Line Core Drilling Tools

TTI has a complete set of wire-line drilling tools include: core barrel assembly, overshot assembly, core pipe, holding dog, hoisting plugs, core catchers, baskets etc.



TTI Circle Wrenches

Wrench Size	Torque (kgf.m)		Scope Of Application
	Diamond	T.C.	
Ø41	34	-	SC56 Inner Tube Assembly
Ø42	34	-	
Ø43	34	-	S59 Inner Tube, S46 Rod, BQ Inner Tube
Ø44	34	-	S46 Box and Pin, Ø46 Bit and Reaming Shell
Ø45	34	-	S46 Outer Tube Assembly
Ø53	36	-	SC56 Rod
Ø54	36	-	SC56 Box and Pin, Ø56 Bit and Reaming Shell
Ø55	36	-	SC56 Outer Tube, S59 Rod and Coupling
Ø56	36	46	S75 Inner Tube, S59 Rod and Coupling, NQ Inner Tube
Ø71	40	52	S75 Rod Box and Pin, NQ Rod
Ø73	40	52	S75 Outer Tube, NQ Outer Tube, HQ Inner Tube
Ø74	40	-	Ø75 Bit, Reaming Shell, NQ Bit and Reaming Shell
Ø89	48	60	S95 Rod, Box and Pin, Outer Tube and HQ Rod
Ø92	48	60	HQ Outer Tube, S95 Bit and Reaming Shell
Ø95	48	-	Inner Core Barrel
We can produce according to customers requirements			



T.C Circle Wrench

Diamond Circle Wrench

TTI Tungsten Carbide Wear Pads



Item	Dimensions
Wear Pad DS01	Top 61*14mm, Bottom 76*16mm, 8.5mm Thick
Wear Pad DS02	Top 56*18mm, Bottom 76*20mm, 11.5mm Thick
Wear Pad DS03	Top 52*16mm, Bottom 76*19mm, 14mm Thick
Wear Pad DS04	Top 46*17mm, Bottom 76*20mm, 16.5mm Thick
We can produce according to customers requirements	

TTI PDC Cutters

Polycrystalline Diamond Composites (PDC) is formed by polycrystalline diamond layer sintered with tungsten carbide substrate made under advanced high temperature and ultra-high pressure with complex technology and materials.

PDC cutter has high hardness, wear resistance and great tenacity, widely used for making drill bits / tools for oil, gas, mining, engineering and etc.



Item	Diameter	Height
1308	13.44 mm	8.00 mm
1313	13.44 mm	13.20 mm
1613	16.00 mm	13.20 mm
1616	16.00 mm	16.31 mm
1619	16.00 mm	19.00 mm
1913	19.05 mm	13.20 mm
1916	19.05 mm	16.31 mm
1919	19.05 mm	19.00 mm

TTI Tricone Bit



Tricone rock bits are widely applied in oilfield, mine, geology, water well and construction. Our tricone bits are made from high quality materials (steel forging, carbide, and others) with advanced processing, and have high wear resistance, lifetime seal and high drilling efficiency. Tricone bits consist of three cones that are mounted on three legs with bearings. To meet with different drilling requirements, there are many kinds of tricone bits. The milled teeth or steel tooth type of tricone bit has teeth machined out of the solid cones that are designed to flake the rock. This bit is used for relatively soft (long, widely spaced teeth) and medium (short, closely spaced teeth) hardness rocks. The insert or button type of tricone bit has holes drilled into the solid cone. Buttons of tungsten carbide stick out of the holes and are designed to crush the rock. It is used to drill relatively hard rock.

To make it easier for drillers to describe what kind of tricone bit they are looking for to the supplier, International Association of Drilling Contractors (IADC) rules IADC Codes in which the first three digits classify the bits according to the designed to drill and the bearing/seal designed to used.

First Digit:

1, 2, and 3 designate STEEL TOOTH BITS with 1 for soft, 2 for medium and 3 for hard formations. 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 and special gauge wear protection as follows:

1. Standard open bearing roller bit
2. Standard open bearing roller bit, air-cooled
3. Standard open bearing roller bit with gauge protection which is defined as carbide inserts in the heel of the cone
4. Sealed roller bearing bit
5. Sealed roller bearing bit with gauge protection
6. Journal sealed bearing bit
7. Journal sealed bearing bit with gauge protection

We supply steel tooth tricone bits and insert tricone bits, which meet the drilling requirements in different formations. Our tricone bits follow the IADC tricone bit classification system.

TTI Drag Bit



Step 3 Wing



Chevron 3 Wing

Each bit is machined from a forging to exacting standards and then tipped with suitable grade tungsten carbide for long life. Our drag bits range from step bits, for soft and medium formations, to chevron style bits for harder formations.

TTI Wire Line Core Drill Rod



Our Drilling Rods are manufactured by CNC, and made of high quality alloy steel. All our drill rods are heat treated.



TTI Wire Line Split Core Barrel



For broken core, the split barrels can increase core recovery.

TTI Now Has Sonic Tooling

Contact us about Sonic Bits, Casing and Subs.



TTI



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