PRODUCTS CATALOG

ARCHON SP. Z O.O.

ARCHON Sp. zo.o.
32-540 Trzebinia, ul. Kościuszki 130
Produkcja osprzętu wiertniczego
tel./fax 032 719 91 34, 032 719 92 35, 032 719 92 34, e-mail: archon4@poczta.onet.pl

Our company

Ladies and gentlemen!

Archon company exists on the market since 21st July 1993. At first it engaged in selling the drill equipment of recognised domestic and foreign producers, cooperating with world leaders in this field as BOART LONGYEAR.
Making an effort to meet the demand of customers, in 1999 the production of the drilling equipment started in our own establishment in Trzebinia. The production is conducted in a modern factory of around 1300 m^2. The plant includes also comfortable social background for the crew.
The company is equipped with modern machines in the form of turning lathes, processing centres, friction welding machines, induction heating machines and other. It can perform a wide range of works associated with machining, heat processing, soldering and welding.
In 2008 we began cooperation with Comacchio S.R.L. - producer of drilling devices recognised in Europe and in the world. In the following year we increased the circle of our partners by Drillco Tools - producer of popular DTH hammers „Puma" and Interfels GmbH - geotechnical instrumentation manufacturer.

Our clients

We are cooperating with the majority of large firms and with many smaller drilling companies in Poland. Mines of hard coal, mineral resources, rock materials etc. are also our customers. We care about cooperation with every company engaged in drilling activity. We are vaunting the completeness of the offer package in the field of technique and the drilling technology that we can present to our Partners.
The reputation of our company is based on a great number of satisfied customers.

Our motto

Our motto: "**Reply to every problem**", we are treating very seriously. Design of machines and tools, their selection for different conditions, drawing up drilling technologies to specific needs of Customers - this is our mission in the business.

You need the assistance in solving problems connected with the drilling, with drilling technology, with drilling tools? Do you have a problem with the supply of appropriate devices?

If yes, we are ready to offer you advice and help.

We expect that our qualified staff, well equipped production plant and fast and competent service convince you to choose „ ARCHON " as your business partner. We aren't concealing that at first contacts we need your acceptation. Then we will do everything in order not to disappoint your confidence.

SPIS TREŚCI

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1. DRILLING PIPES

Drilling pipes are assigned to rotational and percussion drillings. Their main tasks are transferring the torque from the engine to the drilling tool and leading the drilling fluid to the bottom of the hole. They also serve as a medium to exert pressure on the tool during drilling a hole.

1.1. Wireline drill rods

They are used for drilling geological holes with the help of wireline core barrel without the need to take the drill string out.
Wireline core barrel with the core sample is pulled up to the surface, inside the pipes, using the rope. Thanks to that the time needed is considerably shortened.
Pipes are made in standard lengths 1.5 and 3.0 m

Type	Outer diameter (mm)	Inner diameter (mm)	Weight (kg)
AQ L = 1,5 m	44,5	34,9	7,0
AQ L = 3 m			14,0
BQ L = 1,5 m	55,6	46,0	9,0
BQ L = 3 m			18,0
NQ L = 1,5 m	69,9	60,3	11,7
NQ L = 3 m			23,4
HQ L = 1,5 m	88,9	77,8	17,2
HQ L = 3 m			34,4
PQ L = 1,5 m	117,5	103,4	23,6
PQ L = 3 m			47,2

1.2. Drill rods

Drill rods consist of a pipe and friction welded with it couplings: pin and box or box and box. For linking pipes of the type box - box subs are needed. Thanks to steel of the best quality that is used to manufacture the couplings, the durabilities of individual drill rods connections are significantly increased, therefore extending the time of their exploitation.
We are making drill rods in standard lengths: 0.75; 1.0; 1.5; 2.0; 3.0; 4.5; 6.0 m (producing any length of drill rod is possible, according to the needs of the customer).

Dimensions (mm)	Type	Thread	Weight of 1 m (kg)
32 x 4,5	32 Cr	TrP 26	3,2
42 x 5,0	42 Cr	TrP34	4,5
51 x 5,6	51 Cr 51 Rd 51 N42	TrP 42 Rd 40 N 42	6,5 6,5 6,6
60,3 x 6,3 60,3 x 7,1 60,3 x 8,8	60 Cr 60 N42 60 2 3/8”	TrP 54 N 42 2 3/8” API	8,5 9,6 9,7
63,5 x 7,1		A50; N42, 2 3/8”	10,0
73 x 7,1		ditto	11,8
76,1 x 6,3 76,1 x 7,1 76,1 x 8,8 76,1 x 10,0		ditto; 2 7/8” ;	11,0 12,0 14,0 16,0
88,9 x 6,3 88,9 x 7,1 88,9 x 8,8 88,9 x 10,0		ditto ; 3 ½”	13,0 15,0 18,0 20,0
114,3 x 6,3 114,3 x 7,1 114,3 x 8,8 114,3 x 10		ditto ; 4 ½”	17,0 19,0 23,0 26,0
140 x 6,3 140 x 7,1 140 x 8,8 140 x 10		ditto	20,8 23,3 28,4 32,0

1.3. Reverse circulation drill rods

Pipe in pipe system, used to drill with reverse circulation.

Type	Catalogue no.	Outer pipe dia. (mm)	Inner pipe diam. (mm)	Weight of 1 m (kg)
3” 3 1/2” 4” 4 1/2”		76,0 88,9 101,6 114,3	32 42 51 60,3	15,3 19,1 22,9 27,3

1.4. Weights

They are used to exert pressure on the drill tool as well as to facilitate keeping the rectilinearity of the borehole. They are selected depending on the diameter of the drilled hole and the required pressure on drill tools. We are making weights of lengths adapted to needs of the customer.

1.5. Casings

Archon offers the complete range of casing tubes for use during drilling boreholes, including wireline system. Produced pipes have surface tempered pins. The difference of the hardness in comparison to the box is greatly improving the cooperation of threads, prolonging their permanence and reducing danger of the seizure.
As a default we produce pipes in lengths: 1.0; 1.5; 2.0; 3.0; 4.0; 6.0 m. In case of ordering other lengths please contact the sales departament.

1.5.1. Casings used with wireline core barrels

Type	Catalogue no.	Outer diam. (mm)	Inner diam. (mm)	Weight (kg)
AW x 1000 AW x 1500 AW x 3000	A11.00.00.00 A11.00.00.01 A11.00.00.02	57,4	48,6	6,2 9,2 18,6
BW x 1000 BW x 1500 BW x 3000	A11.00.01.00 A11.00.01.01 A11.00.01.02	73,3	60,6	11,3 16,9 33,8
NW x 1000 NW x 1500 NW x 3000	A11.00.02.00 A11.00.02.01 A11.00.02.02	89,1	76,4	14,0 20,9 41,9
HW x 1000 HW x 1500 HW x 3000	A11.00.03.00 A11.00.03.01 A11.00.03.02	114,3	101,6	18,4 27,6 55,1
PW x 1000 PW x 1500 PW x 3000	A11.00.04.00 A11.00.04.01 A11.00.04.02	139,7	127	23,0 34,4 68,9

1.5.2. Casings

Type	Thickness (mm)	Inner diameter (mm)	Weight of 1 m (kg)
108 mm	6,3 7,1	95,4 93,8	15,8 17,7
4 ½” (114,3 mm)	6,3 7,1	101,7 100,1	16,8 18,8
5” (127,0 mm)	6,3 7,1 8,8	114,4 112,8 109,4	18,8 21,0 25,7
5 ½” (139,7 mm)	7,1 8,8 10,0	125,5 122,1 119,7	20,8 23,3 28,4
6 5/8” (168,3 mm)	7,1 8,8 10,0	154,2 150,7 148,3	25,3 28,3 34,6
7 5/8” (193,7 mm)	7,1 8,8 10,0	179,5 176,1 173,7	32,8 40.1 45,3
8 5/8” (219,1 mm)	7,1 8,8 10,0	204,9 201,5 199,1	37,2 45,6 51,6
9 5/8” (244,5 mm)	7,1 8,8 10,0	230,3 226,9 224,5	41,7 51,2 57,8
10 ¾” (273,0 mm)	7,1 8,8 10,0	258,8 255,4 253,0	46,7 57,3 64,9
11 ¾” (298,5 mm)	8,8 10,0 12,5	280,9 278,5 273,5	62,6 71,1 99,8
14” (355,6 mm)	8,8 10 12,5	338,0 335,6 330,6	75,3 85,2 107,0
16” (406,4 mm)	10,0 12,5 14,2	386,4 381,4 378,0	97,8 122,0 138,0
18” (457 mm)	10,0 12,5 14,2	437,0 432,0 428,6	110,0 137,0 155,0
20” (508 mm)	11,0 12,5 14,2	486,0 483,0 479,6	135,0 154,0 173,0

2. DRILLING TOOLS

2.1. Carbide coring bits

Carbide coring bits are assigned to drillings with rotational method using single or double core barrel. Coring bit is a component of the drill string and has the task of machining rock. The bit is reinforced by pillars from tungsten-carbide, soldered into frontal teeth of the crown. TrW threads (outer on single, inner on double crown) enable winding onto the core breaker body (single crown) or link of the core barrel (double crown).

2.1.1. Single crown

Used with single core barrel. Winded onto body of core breaker.

Type	Outer diam. (mm)	Inner diam. (mm)	Length (mm)	Weight (kg)
59 PW	59	44	90	0,4
76 PW	76	61	90	0,8
93 PW	93	77	90	1,0
112 PW	112	95	100	1,2
132 PW	132	114	100	1,6
151 PW	151	134	105	2,8
46 B	46	31,7		
56 B	56	41,7		
66 B	66	51,7		
76 B	76	61,7		
86 B	86	71,7		
101 B	101	86,7		
116 B	116	101,7		
131 B	131	116,7		
146 B	146	131,7		

2.1.2. Double crown

Used with double core barrel. Winded onto link of the dore barrel. Crown T6S is used for core drilling with additional plastic split tube.

Type	Outer diam. (mm)	Inner diam. (mm)	Długość (mm)	Masa (kg)
59	59	35	165	0,6
76	76	49	200	1,6
93	93	66	207	2,0
112	112	85	210	2,6
132	132	101	215	3,5
151	151	121	230	4,7
46 T2	46	31,7		
56 T2	56	41,7		
66 T2	66	51,7		
76 T2	76	61,7		
86 T2	86	71,7		
101 T2	101	83,7		
76 T6	76	57		
86 T6	86	67		
101 T6	101	79		
116 T6	116	93		
131 T6	131	108		
146 T6	146	123		
101 T6S	101	71,7		
116 T6S	116	85,7		
131 T6S	131	100,7		
146 T6S	146	115,7		

2.2. Diamond core bits.

Like carbide core bits they are used for core drilling, but in harder rock. Diamond coring bits are divided into three types:

1. Impregnated
2. Serface set
3. PCD/TSD

2.2.1. Impregnated diamond core bits are used mainly in case of drilling in rocks cracked, strongly abrasive and very hard.
Below you can find a chart of impregnated tools selection:

Table of impregnated tools selection

Matrix		Formation			
		Hardness	**Rock Type**	**Granulation**	**Abrasivenes**
S1	Extremely Soft	Extremely hard	Quartz, silica, quartzite Formations with very high Percentage of silica	Very fine grained	Non abrasive
S2	Very Soft	Very hard	Quartz, silica, quartzite Clenched puddingstones	Very fine grained	Non abrasive
S3	Soft	Very Hard	Taconite, granite, diorite, schist fossilized limestone, gneiss	Very fine grained	Non abrasive
S4	Soft	Hard to very hard	Amphibolite, granite, schist, gneiss	Fine grained	Non abrasive or slightly abrasive
S5	Medium Soft	Hard to medium hard	Gneiss, schist, fossilized basalt	Fine grained	Non abrasive
S6	Medium	Hard	Granite, schist, gneiss, concrete	Fine to medium grained	Non abrasive or moderately abrasive
S7	Medium	Medium hard	Quartzite, dolomite, norite, coarse granite	Medium grained	moderately abrasive
S8	Medium Hard	Medium hard	Norite, quartzite	Medium grained	Abrasive
S9	Hard	Medium hard	Sandstone, norite, quartzite	Medium grained	Very abrasive
S10	Very Hard	Medium hard	Sandstone, chalk with addition of silica, quartzite	Medium grained	Very abrasive
S11	Extremely Hard	Medium hard	Sandstone, monzonite	Coarse grained	Extremely abrasive

2.2.2. Surface set diamond coring bits are divided depending on the shape of the face:

a) semi round profile – standard profile.
b) pilot profile – food core recovery in soft, friable formations.
c) conical profile – good penetration and stability. Stronger than stepped profile.
d) stepped profile – popular in wireless core drilling. Characterised by high penetration and stability in fractured formations.

The size and arrangement of the diamonds depend on the formation that the bit is designed for.

2.2.3. PCD and TSD coring bits

PCD – polycrystalline diamond consisting of synthetic diamonds wrapped in tungsten carbide . PCD coring bits are characterized by high speeds of the drilling, long vitality and in consequence low costs of meter of the borehole, particularly in soft to medium rocks. Bigger blades allow for getting higher speeds than in case of surface set tools.

Material named TSD is a thermally stabilized blend of polycrystalline diamonds. Coring bits with TSD fillers guarantee high speeds of drilling, particularly in hard rocks.

2.3. Reaming shells

Made in three types:

1. Surface set
2. Impregnted
3. Tungsten carbide

They are used to prolong core barrel's life by keeping the hole diameter even (as the coring tool, when wearing out, could reduce its outer diameter) and by stabilizing the core barrel during drilling. Situated directly behind the bit.

2.4. PDC drill bits

Produced of high quality materials, have a wide range of applications. They are used for numerous applications like draining holes, blast holes, research holes and many more. Their major advantages are: rapid progress, long vitality, carrying out long holes without the necessity of the change of the tools of the trade, reduced drill rig workload, slower consumption of drill rods.
Scope of use: from soft rocks e.g. loam to hard rocks like sandstones.

Diameter (mm)	Connection type
28	M16 , B17
29	M16, B17
32	M16, B17
43	42 Cr
48	42 Cr
65	51 Cr
76	51 Cr
96	51 Cr
114	2 3/8”
122	2 3/8”

2.5. Claw bits.

Bit applied to soft and medium hard rocks. So-called „ Christmas tree ” contains exchangeable pilot and exchangeable, self-sharpening teeth that lower the cost of operation. The pilot is available with two or three blades. The number of rows of teeth is dependent on the diameter selected by the customer from the range: 120 mm to 311 mm.

Diameter (mm)	Thread
95,2 mm (3 3/4”)	2 3/8”, N51
114,3 mm (4 1/2”)	2 3/8”
123,8 mm (4 7/8”)	2 7/8”
142,9 mm (5 5/8”)	3 1/2”
165,1 mm (6 1/2”)	3 1/2”
190,5 mm (7 1/2”)	4 1/2”
215,9 mm (8 1/2”)	4 1/2”
228,6 mm (9”)	4 1/2”
250,8 mm (9 7/8”)	4 1/2”
311,1 mm (12 1/4”)	4 1/2”
374,6 mm (14 3/4”)	4 1/2”
444,5 mm (17 1/2”)	4 1/2”

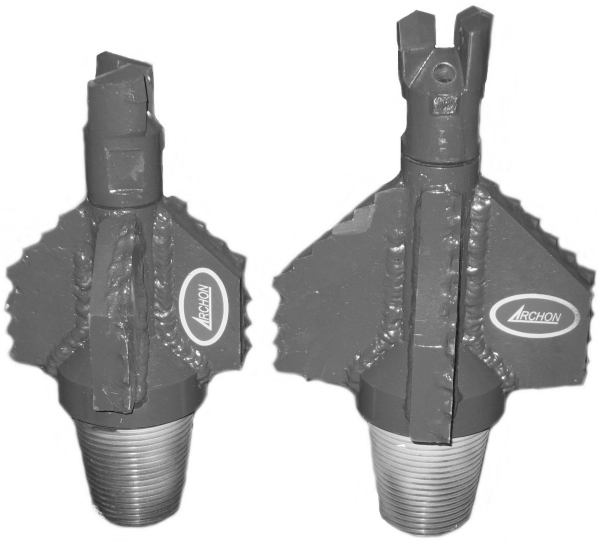
2.6. Three wing drag bits

Drag bit with the pilot. Applied to soft and medium hard rocks. Checked in the field, used by the wide crowd of satisfied customers.

Diameter (mm)	Thread
74,6 mm (2 15/16)	N 42
95,2 mm (3 3/4”)	2 3/8”, N51
114,3 mm (4 1/2”)	2 3/8”
123,8 mm (4 7/8”)	2 7/8”
142,9 mm (5 5/8”)	3 1/2”
165,1 mm (6 1/2”)	3 1/2”
190,5 mm (7 1/2”)	4 1/2”
215,9 mm (8 1/2”)	4 1/2”
228,6 mm (9”)	4 1/2”
250,8 mm (9 7/8”)	4 1/2”
311,1 mm (12 1/4”)	4 1/2”
374,6 mm (14 3/4”)	4 1/2”
444,5 mm (17 1/2”)	4 1/2”

2.7. Four wing drag bits

Applied to soft and medium hard rocks.



Diameter (mm)	Thread
215,9 mm (8 1/2”)	4 1/2”
228,6 mm (9”)	4 1/2”
250,8 mm (9 7/8”)	4 1/2”
311,1 mm (12 1/4”)	4 1/2”
374,6 mm (14 3/4”)	4 1/2”
444,5 mm (17 1/2”)	4 1/2”

2.8. Roller cone bits

Roller cone bits are called also tricone bits, because of three rotating cones equipped with tungsten carbide inserts. Shape, size and arrangement of the inserts depend on the type of formation that the bit is designed for.

Types of tricone bits for different formations:

- BM – very soft
- M – soft
- S – medium hard
- T – hard
- BT (TG)– very hard

On account of the drilling mud delivery we distinguish:

- side jets tricones
- central jet tricones

Side jets tricone bits are applied in drillings, where getting high speeds of outflow of the mud is required for effective cleaning of the bottom of the hole and of the teeth of the bit .

On account of the structure we distinguish tricones:

- with open roller bearings
- with sealed roller bearings
- with sealed journal bearings

Advised parameters of drilling using tricones:

Diameter		Type	Rotation	Pull down (T)	
inch	mm		(Rpm)	min	max
2 ½	63,5	T	80 – 50	2,0	4,8
		TG	70 – 35	2,0	5,0
2 5/8	66,7	T	80 – 50	2,1	5,0
		TG	70 – 35	2,1	5,3
2 15/16	74,6	T	80 – 50	2,4	5,6
		TG	70 – 35	2,4	5,9
3 ¾	95,2	T	80 – 50	3,0	7,2
		TG	70 – 35	3,0	7,5
4 ½	114,3	S	100 – 60	2,3	7,7
		T	80 – 50	3,6	8,6
		TG	70 – 35	3,6	9,0
5 5/8	142,9	S2TZ	90 – 50	3,4	10,1
		T1TZ	80 – 40	4,5	10,7
		TG	70 - 35	4,5	11,3
5 7/8	149,2	S2TZ	90 – 50	3,6	10,6
		T1TZ	80 – 40	4,7	11,2
		TG	70 - 35	4,7	11,8
6 ¼	158,7	S2TZ	90 – 50	3,8	11,3
		T1TZ	80 – 40	5,0	11,9
		TG	70 - 35	5,0	12,5
6 ¾	171,4	S2TZ	90 – 50	4,1	12,2
		T1TZ	80 – 40	5,4	12,8
		TG	70 - 35	5,4	13,5
7 ½	190,5	S2TZ	90 – 50	4,5	13,5
		T1TZ	80 – 40	6,0	14,3
		TG	70 - 35	6,0	15,0
8 ½	215,9	S2TZ	90 – 50	5,1	15,3
		T1TZ	80 – 40	6,8	16,2
		TG	70 - 35	6,8	17,0

2.9. WTU plate

WTU drill plate is used for drillings in coal. Made in two standard diameters: 150mm and 180mm.

2.10. Tubular bits

Tubular bits are used for drilling in soft layers: clays and sands. We are distinguishing single and double blade tubular bits.

Single blade tubular bits are used for drilling in casing pipes. Particularly useful for humid sands. Produced diameters: from 65mm to 335mm.

Double blade tubular bits are used for drillings without casing, because second blade increases the stability. They are recommended for drillings in cohesive ground.
Produced diameters: from 90mm to 370mm.

2.11. Augers

Used for drillings in soft formations . We offer augers in following lengths: 1, 1.5, 2, 3 m

Diameter		Coupling (hexagon)
inch	mm	
2 ½	63	21
3 ½	89	29
4 ½	114	29
5	127	29
6	152	41
7	178	41
8	203	41
10	254	51
12	305	51

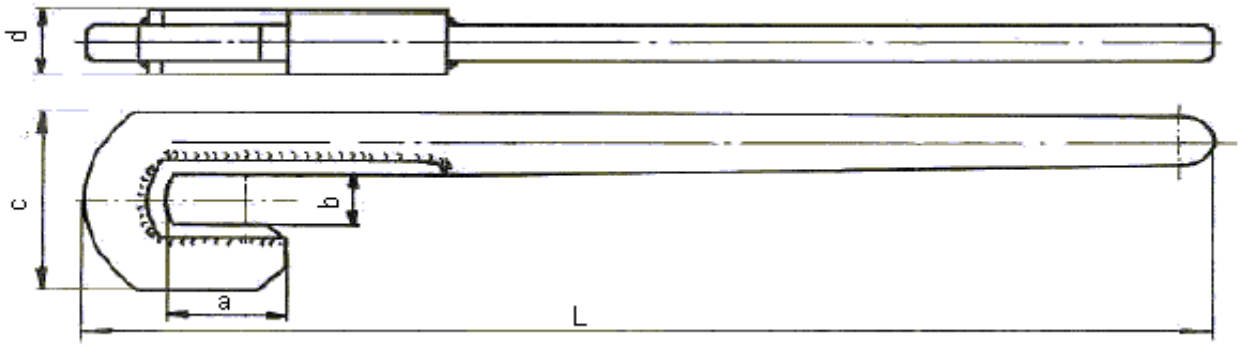
3. DRILLING ACCESSORIES

3.1. Water swivel

Water swivel connects rotating and non-rotating parts of the string. It enables the circulation of liquid through the drill string during the drilling or during hanging on the rope of the winch. It is possible to use it for raising of the string. Water swivels are simple in the assembly and user-friendly.

3.2. Wrenches

3.2.1 Flat wrenches are used for drill rods having special cutting on the coupling. They enable twisting and untwisting drill rods in a simple way.

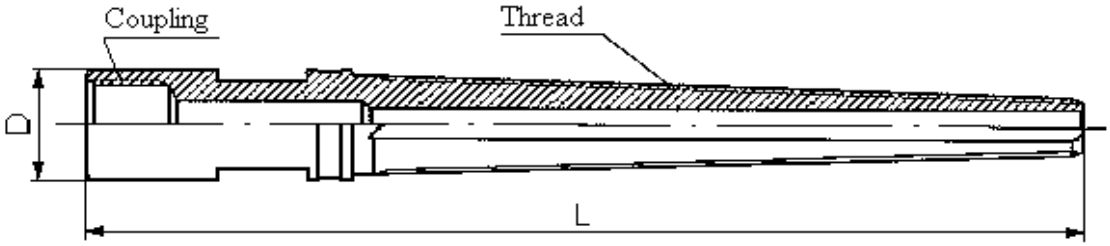


Type	Dimensions				Connection	Weight[kg]
b	a	c	L	d		
24	40	84	460	30	32 Cr	2,3
30	50	100	465		42 Cr	2,5
36	60	116	470		51 Cr	2,6

3.2.2 Core barrel wrenches are used for innerand outer tubes of core barrels and drilling pipes. They are specially designed to enshure tightest clamping without damaging the pipes' surface.

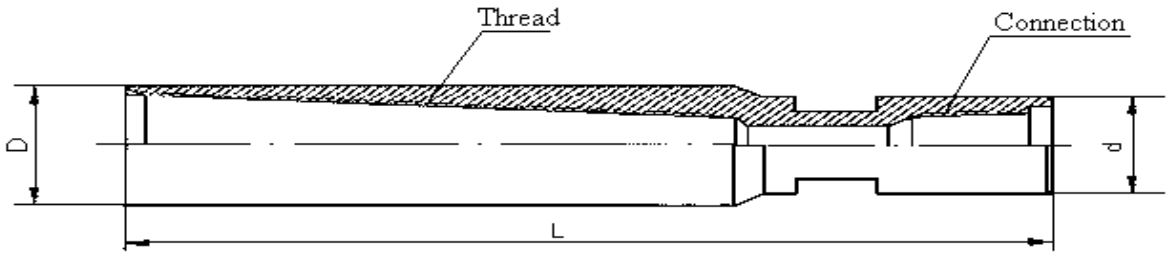
3.3. Fishing tools.

3.3.1. Taper taps are designed to thread into the ID of an object (rod, core barrel, etc.) lost at the bottom of a hole.
Taper taps can have right or left thread. Right hand threaded taps are intended to pull out the complete string from the hole. If the string is stuck a left hand tap is used for unscrewing the free part of the string.



Type	Coupling	D (mm)	L (mm)
32	32 Cr	32	310
42	42 Cr	42	345
51	51 Cr, N42	51	395
60,3	N42, A50, 2 3/8”	60,3	450
76	2 3/8”, 2 7/8”, 3 ½”	76	450
88,9	2 3/8”, 2 7/8”, 3 ½”	90	390

3.3.2. Overshots will catch the tubular object from the outside and are therefore recommended when an item of relatively small diameter is lost in a large diameter drill hole.



Type	D (mm)	d (mm)	L (mm)	Connection	Weight (kg)
32	52	40	350	32Cr	3,2
42	64	44	360	42Cr	3,8
51	73	53	370	51Cr	4,0
42	84	65	553	N42	3,8
51	88	80	590	2” 3/8 WP	4,0

3.4. Auxiliary tools

3.4.1. Fork – is intended for suspending the drill string in the hole in the process of the manipulation of the drill string.

3.4.2. Elevator – is used for taking out and casting the drill string into the hole with the help of the winch of the drilling device. The bottle ones (on the right) don't have to be screwed to the coupling.

7.4. Prewenters

Prewenters are used to eliminate scattering cuttings during drilling with DTH hammer. They are wind-up to the casing pipe and with the use of the pipework they are directing the cuttings into determined place. They have exchangeable couplings, thanks to what one prewenter can be used for different dimensions of casings and drilling rods.