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PRODUCT CATALOGUE

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Forsun Ultra-hard Material Industry Co., Ltd.

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Introduction

- ◆ Forsun Ultra-hard Material Industry Co., Ltd specializes in manufacturing Drilling Tools and Equipment for Mineral Exploration, Site Investigation and Water Well Construction, etc.
- ◆ Since the company's foundation in 2001, Forsun Team has been making great efforts to develop various products to meet the different and changing needs of drilling industry. Till now Forsun products have been exported to over 60 countries and regions in the world.
- ◆ Forsun Team has excellent skilled staff and advanced production technology and equipment. Besides standard products, Forsun also provides customized products according to clients' drawings and requirements.
- ◆ Forsun became "Production, Teaching and Researching Base of Central South University" in Nov. 2008.
- ◆ Welcome to visit our website www.forsun-tools.com to find more about Forsun company and products.



Quality Control

- ◆ Quality first. In order to guarantee high quality for our products, Forsun Team always makes a serious inspection for all products and raw material in strict procedure.
- ◆ Forsun Ultra-hard Material Industry Co., Ltd. has obtained certification of ISO9001 : 2000 in August 2004 and maintained till now.



◆ Our company pays attention to product quality and abides to credit, and also do our best to provide the best products and excellent service to customers. To build good after-sales service system, we draw up the Quality Guarantee according to the professional standard and combining field experience.

Products	Problems	Settlement
Diamond core bit	1. Size, and / or technical parameters (matrix etc.) are different from the requirements of clients' purchase orders.	Replace
	2. Thread can not fit clients' barrels.	Repair or replace
	3. Break down a piece from matrix, and the dimension of the piece exceed 2mm x 2mm x 2mm, and such break is not caused by drilling.	Replace
	4. Matrix falling not caused by drilling.	Replace or return
	5. Groove on matrix caused by manufacturer.	Replace or return
	6. Drilling speed is obviously slower than congener products caused by manufacturer.	Replace, and each item quantity does not exceed 3 pieces.
	7. Bit life is obviously short caused by manufacturer.	
	8. Breaking down of matrix, falling matrix, groove and short bit life caused by operating reasons—drill rod sticking, premature failure of the bit crown and hole-bottom not to be cleaned.	
	9. Short bit life and abrasion caused by drilling machine, drilling techniques or parameters	
	10. Properly wearable and the matrix is finished.	
	11. Thread damaged and distortion made by operator.	
	12. Body crack in drilling.	Replace or return
Reaming shell	1. Thread is not correct.	Repair or return
	2. Body crack in drilling.	Replace or return
	3. PCD strips falling.	Replace or return
Drilling tools	1. Thread type, Dimensions and Tolerance do not match the standard.	Repair or replace
	2. Core barrels strength, straightness and concentricity etc exceed the design requirement.	Replace or return
	3. Raw material not match industry standard or client requirement.	Replace or return
	4. Product defects caused by production reasons.	Replace or return

Note:
If there are any other problems not contained in the above table, the settlement will be based on the negotiation between two parties (Forsun Co., and the Client).



- ◆ Impregnated Diamond Type
- ◆ Surface Set Diamond Type
- ◆ Tungsten Carbide Type
- ◆ PDC Type
- ◆ PCD Type
- ◆ Electroplated Diamond Type



◆ Impregnated Diamond Type



◆ Surface Set Diamond Type



◆ T.C. (Tungsten Carbide) Type



◆ PDC Type (Matrix body & Steel body)



◆ PCD Type (TSP, Spicular & Cylinder)



◆ Electroplated Diamond Type

Dimensions of Core Bits

A-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	inch
AQ	1.880 / 1.870	47.75 / 47.50	1.067 / 1.057	27.10 / 26.85
AQ-RSG	1.895 / 1.885	48.13 / 47.88	1.067 / 1.057	27.10 / 26.85
AWG / AX	1.880 / 1.870	47.75 / 47.50	1.190 / 1.180	30.23 / 29.97
AWM	1.880 / 1.870	47.75 / 47.50	1.190 / 1.180	30.23 / 29.97
AWT	1.880 / 1.870	47.75 / 47.50	1.286 / 1.276	32.66 / 32.41
LTK48	1.880 / 1.870	47.75 / 47.50	1.394 / 1.384	35.40 / 35.15
B-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	inch
BQ	2.350 / 2.340	59.69 / 59.44	1.438 / 1.428	36.52 / 36.27
BQ-RSG	2.365 / 2.355	60.07 / 59.82	1.438 / 1.428	36.52 / 36.27
BQ-2.400	2.405 / 2.395	61.09 / 60.83	1.438 / 1.428	36.52 / 36.27
BQ3	2.350 / 2.340	59.69 / 59.44	1.325 / 1.315	33.65 / 33.40
BWG / BX	2.350 / 2.340	59.69 / 59.44	1.660 / 1.650	42.16 / 41.91
BWM	2.350 / 2.340	59.69 / 59.44	1.660 / 1.650	42.16 / 41.91
BWT	2.350 / 2.340	59.69 / 59.44	1.755 / 1.745	44.58 / 44.32
LTK60	2.350 / 2.340	59.69 / 59.44	1.742 / 1.732	44.25 / 44.00
TBW	2.350 / 2.340	59.69 / 59.44	1.785 / 1.775	45.34 / 45.09
BTW	2.354 / 2.346	59.79 / 59.58	1.657 / 1.649	42.08 / 41.88
N-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	inch
NQ	2.970 / 2.960	75.44 / 75.19	1.880 / 1.870	47.75 / 47.50
NQ-RSG	2.985 / 2.975	75.82 / 75.57	1.880 / 1.870	47.75 / 47.50
NQ-3.032	3.037 / 3.027	77.14 / 76.89	1.880 / 1.870	47.75 / 47.50
NQ2	2.970 / 2.960	75.44 / 75.19	2.000 / 1.990	50.80 / 50.55
NQ2-RSG	2.985 / 2.975	75.82 / 75.57	2.000 / 1.990	50.80 / 50.55
NQ3 / NQTT	2.970 / 2.960	75.44 / 75.19	1.780 / 1.770	45.21 / 44.96
NQ3-RSG	2.985 / 2.975	75.82 / 75.57	1.780 / 1.770	45.21 / 44.96
NQ3-3.032	3.037 / 3.027	77.14 / 76.89	1.780 / 1.770	45.21 / 44.96
NWG / NX	2.970 / 2.960	75.44 / 75.19	2.160 / 2.150	54.86 / 54.61
NWM	2.970 / 2.960	75.44 / 75.19	2.160 / 2.150	54.86 / 54.61

Dimensions of Core Bits

NWT	2.970 / 2.960	75.44 / 75.19	2.318 / 2.308	58.87 / 58.62
TNW	2.970 / 2.960	75.44 / 75.19	2.394 / 2.384	60.80 / 60.55
NTW	2.968 / 2.956	75.38 / 75.08	2.208 / 2.196	56.08 / 55.78
H-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
HQ	3.770 / 3.755	95.76 / 95.38	2.505 / 2.495	63.63 / 63.38
HQ-RSG	3.790 / 3.755	96.27 / 95.89	2.505 / 2.495	63.63 / 63.38
HQ-3.830	3.840 / 3.825	97.54 / 97.16	2.505 / 2.495	63.63 / 63.38
HQ-3.895	3.897 / 3.882	98.98 / 98.60	2.505 / 2.495	63.63 / 63.38
HQ3 / HQTT	3.770 / 3.755	95.76 / 95.38	2.411 / 2.401	61.24 / 60.99
HQ3-RSG	3.790 / 3.755	96.27 / 95.89	2.411 / 2.401	61.24 / 60.99
HQ3-3.830	3.840 / 3.825	97.54 / 97.16	2.411 / 2.401	61.24 / 60.99
HQ3-3.895	3.897 / 3.882	98.98 / 98.60	2.411 / 2.401	61.24 / 60.99
HWF-Long	3.912 / 3.897	99.36 / 98.98	3.005 / 2.995	76.33 / 76.08
HWF-Short	3.897 / 3.882	98.98 / 98.60	3.005 / 2.995	76.33 / 76.08
HWF Coreline	3.912 / 3.897	99.36 / 98.98	2.839 / 2.830	72.12 / 71.88
412F	4.220 / 4.208	107.19 / 106.88	2.968 / 2.952	75.38 / 74.98
412F Coreline	4.220 / 4.208	107.19 / 106.88	2.874 / 2.862	72.99 / 72.69
HWG / HX	3.897 / 3.882	98.98 / 98.60	3.005 / 2.995	76.33 / 76.08
HWT	3.897 / 3.882	98.98 / 98.60	3.192 / 3.182	81.08 / 80.82
P-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
PQ	4.815 / 4.795	122.30 / 121.80	3.350 / 3.340	85.09 / 84.84
PQ3	4.815 / 4.795	122.30 / 121.80	3.275 / 3.265	83.18 / 82.93
PWF-Long	4.755 / 4.740	120.78 / 120.40	3.635 / 3.620	92.33 / 91.95
PWF- Short	4.735 / 4.715	120.27 / 119.76	3.635 / 3.620	92.33 / 91.95
PWF Coreline	4.755 / 4.740	120.78 / 120.4	3.430 / 3.420	87.12 / 86.86
S-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
SWF-Long	5.755 / 5.740	146.18 / 145.8	4.447 / 4.432	112.95 / 112.5
SWF- Short	5.735 / 5.715	145.67 / 145.16	4.447 / 4.432	112.95 / 112.5
SWF Coreline	5.755 / 5.740	146.18 / 145.8	4.220 / 4.204	107.18 / 106.78

Dimensions of Core Bits

Geobor-S, SK6L	5.759 / 5.748	146.27 / 145.99	4.023 / 4.015	102.18 / 101.98
U-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
UWF-Long	6.880 / 6.860	174.75 / 174.2	5.515 / 5.495	140.08 / 139.5
UWF- Short	6.855 / 6.825	174.12 / 173.36	5.515 / 5.495	140.08 / 139.5
UWF Coreline	6.880 / 6.860	174.75 / 174.20	5.386 / 5.380	136.80 / 136.6
Z-Gauge Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
ZWF-Long	7.880 / 7.860	200.15 / 199.6	6.515 / 6.495	165.48 / 164.9
ZWF- Short	7.855 / 7.825	199.52 / 198.76	6.515 / 6.495	165.48 / 164.9
T, T2, TT & TB Metric Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
T2-36	1.422 / 1.412	36.12 / 35.87	0.859 / 0.849	21.82 / 21.57
TT46	1.818 / 1.808	46.18 / 45.92	1.394 / 1.384	35.40 / 35.15
T2-46	1.818 / 1.808	46.18 / 45.92	1.253 / 1.243	31.82 / 31.57
TB56	2.220	56.3	1.64	41.7
TT56	2.210 / 2.200	56.13 / 55.88	1.788 / 1.778	45.41 / 45.16
T2-56	2.210 / 2.200	56.13 / 55.88	1.647 / 1.637	41.83 / 41.58
T2-66	2.603 / 2.593	66.12 / 65.87	2.040 / 2.030	51.81 / 51.56
T2-76	2.997 / 2.987	76.12 / 75.87	2.434 / 2.424	61.82 / 61.57
T2-76 Coreline	2.997 / 2.987	76.12 / 75.87	2.288 / 2.278	58.12 / 57.87
T2-86	3.391 / 3.381	86.13 / 85.88	2.828 / 2.818	71.83 / 71.58
T2-86 Coreline	3.391 / 3.381	86.13 / 85.88	2.682 / 2.672	68.13 / 67.88
T2-101	3.981 / 3.971	101.12 / 100.8	3.300 / 3.290	83.82 / 83.57
T2-101 Coreline	3.981 / 3.971	101.12 / 100.8	3.155 / 3.145	80.13 / 79.88
T6 Series Metric Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
T6-76	2.997 / 2.987	76.12 / 75.87	2.249 / 2.239	57.12 / 56.87
T6-86	3.391 / 3.381	86.13 / 85.88	2.643 / 2.633	67.13 / 66.88
T6-86 Coreline	3.393 / 3.381	86.18 / 85.88	2.519 / 2.511	63.98 / 63.77
T6H	3.897 / 3.881	98.98 / 98.58	3.114 / 3.106	79.09 / 78.89

Dimensions of Core Bits

T6H Coreline	3.897 / 3.881	98.98 / 98.58	2.996 / 2.988	76.09 / 75.89
T6SH	3.910 / 3.900	99.33 / 99.07	2.832 / 2.822	71.93 / 71.67
T6-101	3.981 / 3.971	101.12 / 100.8	3.115 / 3.105	79.12 / 78.87
T6-101 Coreline	3.981 / 3.971	101.12 / 100.8	2.996 / 2.987	76.09 / 75.86
T6-116	4.575 / 4.560	116.20 / 115.8	3.667 / 3.657	93.14 / 92.89
T6-116 Coreline	4.575 / 4.560	116.20 / 115.8	3.548 / 3.538	90.12 / 89.88
T6-131	5.165 / 5.150	131.19 / 130.8	4.257 / 4.247	108.13 / 107.87
T6-131 Coreline	5.165 / 5.150	131.19 / 130.8	4.079 / 4.070	103.60 / 103.37
T6-146	5.755 / 5.740	146.18 / 145.8	4.847 / 4.837	123.11 / 122.86
T6-146 Coreline	5.755 / 5.74	146.18 / 145.8	4.65 / 4.64	118.11 / 117.85
T6S Series Metric Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
T6S-76	3.009 / 2.999	76.43 / 76.18	1.883 / 1.873	47.83 / 47.58
T6S-86	3.403 / 3.393	86.43 / 86.18	2.277 / 2.267	57.83 / 57.58
T6S-101	3.993 / 3.983	101.43 / 101.2	2.828 / 2.818	71.83 / 71.58
T6S-116	4.586 / 4.571	116.48 / 116.1	3.379 / 3.369	85.83 / 85.58
T6S-131	5.177 / 5.162	131.48 / 131.1	3.970 / 3.960	100.83 / 100
T6S-146	1.818 / 1.808	146.48 / 146.1	4.560 / 4.550	115.83 / 115
B Series Metric Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
B36	1.422 / 1.412	36.12 / 35.87	0.859 / 0.849	21.82 / 21.57
B46	1.818 / 1.808	46.18 / 45.92	1.253 / 1.243	31.82 / 31.57
B56	2.210 / 2.200	56.13 / 55.88	1.647 / 1.637	41.83 / 41.58
B66	2.603 / 2.593	66.12 / 65.87	2.040 / 2.030	51.81 / 51.56
B76	2.997 / 2.987	76.12 / 75.87	2.434 / 2.424	61.82 / 61.57
B86	3.391 / 3.381	86.13 / 85.88	2.828 / 2.818	71.83 / 71.58
B101	3.981 / 3.971	101.12 / 100.87	3.418 / 3.408	86.82 / 86.57
B116	4.575 / 4.560	116.20 / 115.82	4.009 / 3.999	101.83 / 101.58
B131	5.165 / 5.150	131.19 / 130.81	4.599 / 4.589	116.82 / 116.57
B146	5.755 / 5.740	146.18 / 145.80	5.190 / 5.180	131.82 / 131.57
C Series Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
BMLC	2.350 / 2.340	59.69 / 59.44	1.389 / 1.381	35.28 / 35.10

Dimensions of Core Bits

NMLC	2.970 / 2.960	75.44 / 75.19	2.052 / 2.042	52.12 / 51.87
HMLC	3.87 / 3.858	98.3 / 98	2.505 / 2.495	63.63 / 63.38
3C	4.358 / 4.350	110.69 / 110.49	3.003 / 2.996	76.27 / 76.1
3C Retractor	4.358 / 4.350	110.69 / 110.49	3.250 / 3.264	82.55 / 82.9
4C	5.476 / 5.464	139.09 / 138.78	4.007 / 3.996	101.78 / 101.49
4C Retractor	5.476 / 5.464	139.09 / 138.78	4.368 / 4.378	110.9 / 111.2
6C	7.724 / 7.712	196.18 / 195.88	5.756 / 5.744	146.20 / 145.89
M Series Core Bits				
Size	Outside diameter		Inside diameter	
	inch	mm	inch	mm
M66	2.610 / 2.594	66.29 / 65.89	1.732 / 1.724	43.99 / 43.79
M76	3.003 / 2.988	76.28 / 75.89	2.126 / 2.118	54.00 / 53.79
M86	3.397 / 3.381	86.28 / 85.88	2.440 / 2.433	61.98 / 61.79
M101	3.988 / 3.972	101.29 / 100.89	2.933 / 2.925	74.49 / 74.29
M116	4.578 / 4.562	116.28 / 115.87	3.346 / 3.338	84.99 / 84.78
RUSSIA Standard Core Bits				
Size	Outside diameter		Inside diameter	
	mm		mm	
26	26		14	
36	36		22	
46	46		31	
59	59		42	
76	76		58	
93	93		73	
112	112		92	
Chinese Standard Single Tube Core Bits				
Size	Outside diameter		Inside diameter	
	mm		mm	
36	36.2		21.7	
46	46.2		29.2	
56	56.2		39.2	
59	59.5		41.7	
75	75.2		54.7	
91	91.2		68.2	
110	111.2		93.2	
130	131.2		113.2	

Dimensions of Core Bits

150	151.2	133.2
170	171.2	149.2
219	225.2	197.2
275	278.2	249.2
Chinese Standard Double Tube Core Bit		
Size	Outside diameter	Inside diameter
	mm	mm
56	56.2	39.2
59	59.5	41.7
75	75.2	54.7
91	91.2	68.2
Chinese Standard Wireline Core Bits		
Size	Outside diameter	Inside diameter
	mm	mm
59	59.5	36.2
75	75.2	49.2
91	91.2	62.2

The Selection of the Drilling Parameters

A. Influence Factors of Rotary Speed:

When deciding the specific peripheral velocity of bits, in addition to bit type and bit diameter, other factors should be considered also, such as rock property, diamond size, drilling equipment and core barrel, drilling depth and the structure of drilling holes . (refer to the Chart 01)

a. Bit Type: The natural diamond grains on surface set core bit are large and self-sharpening easily, in order to protect the exposed diamond grains, the rotary speed of surface set core bit should be lower than the impregnated core bit.

b. Bit Diameter: In order to reach a proper linear velocity, the rotary speed of the small diameter bit should be higher than the big diameter bit.

c. Peripheral Velocity: From the formula of rotating speed, we can find the liner velocity is proportionate to the rotating speed. It means the higher speed of the liner velocity, the higher the rotating speed.

d. Rock Properties: High rotary speed is suitable for medium hard, complete rock formations; in broken, fractured, mixed formations, with high vibration during drilling, drillers should slow down the rotary speed according to the broken level of the rock; in the soft formations with high drilling efficiency, in order to keep cooling and carry out the cuttings, the penetration speed needs to be limited, as well as the rotary speed.

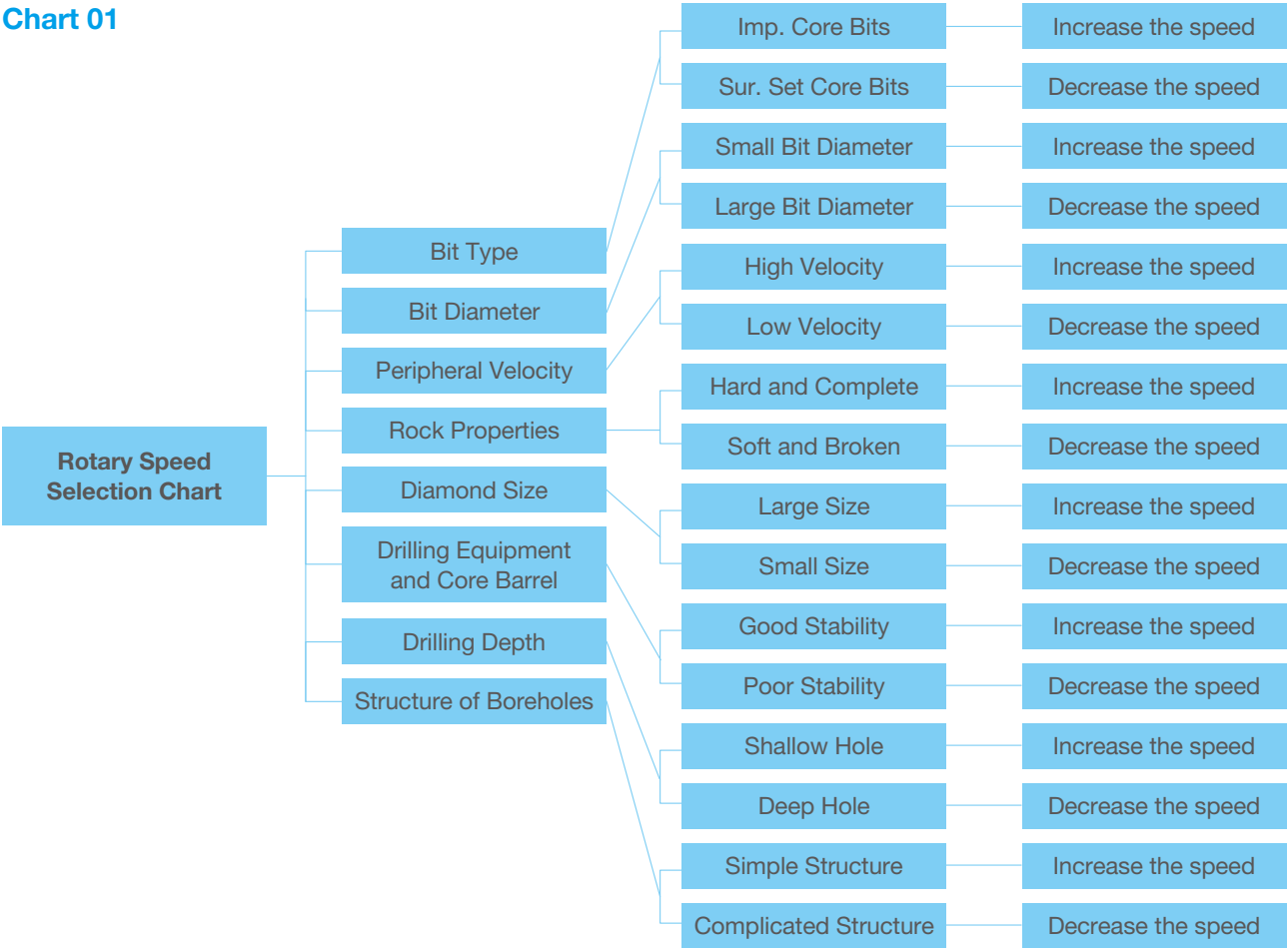
e. Diamond Size: The larger the diamond size, the quicker the self-sharpening. To avoid the bit face chipped or cracked, the rotary speed of the bits with big diamonds should be lower than the bits with small diamonds.

f. Drilling Equipment and Core Barrel: When the drilling machine is with poor stability and the drill rods have a low intensity, correspondingly, the rotary speed should be slowed down. If the lubricants or other similarities for decreasing the vibration are adopted, the rotary speed could be raised.

g. Drilling Depth: when the depth of the drilling hole becomes deep, the weight of the core barrels will be larger; the pressure situation will be more complex; it takes larger power while rotating the core barrels. Hence, in the deep hole, because of the limit of the power and intensity of the core barrels, the rotary speed should be decreased, in shallow hole, conversely.

h. Structure of Drilling Holes: High rotary speed can be used in the condition that the borehole structure is simple and the annular space between the drill rods and borehole wall is small. On the contrary, the drilling hole with a complex situation, lots ofchangeable diameters, big annular space between the drill rods and borehole wall, it causes poor stability and can't use the high rotary speed.

Chart 01

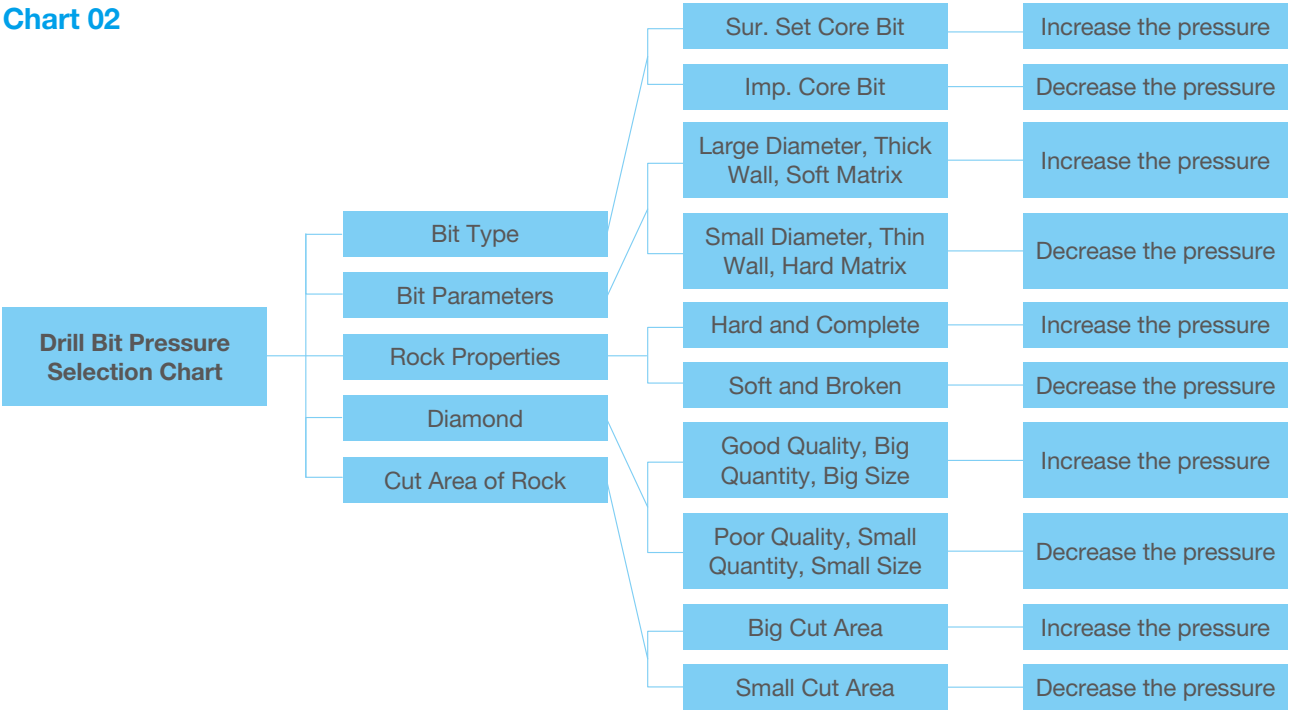


B. Influence Factors of Drilling Pressure:

The following factors should be considered when choosing the drilling pressure. (refer to the Chart 02)

- a. Rock Properties:** The smaller drilling pressure should be used in soft to medium soft formations. The Drilling pressure should be increased properly in complete, medium hard and hard formations. In broken, cracked and mixed formation, the drilling pressure should be reduced properly according to cracking level of the formations.
- b. Bits Type:** Greater drilling pressure can be adopted for the bits which have big diameter, thick wall and soft matrix. The bits with small diameter, thin wall and hard matrix, the drilling pressure should be smaller. The drilling pressure for surface set core bit should be higher than impregnated core bit, in order to make the diamonds on surface set core bit to drill into the rock and cause its brokenness.
- c. Diamond Quality, Diamond Quantity, Diamond Size:** Greater drilling pressure can be adopted for the bits which have big diameter, thick wall and soft matrix. The bits with small diameter, thin wall and hard matrix, the drilling pressure should be smaller. The drilling pressure for surface set core bit should be higher than impregnated core bit, in order to make the diamonds on surface set core bit to drill into the rock and cause its brokenness.
- d. Cut Area of the Rock:** The cut area of the rock depends on the bits diameter, wall thickness and waterway quantities. The larger the coring area, the higher the drilling pressure. Conversely, the drilling pressure should be lower.

Chart 02



C. Influence Factors of Flushing Water:

- a. Rock Formation Properties and the Level of the Completeness:** While drilling into hard and fine-grained formations with low rotary speed and few cuttings of small grain size, the flushing water could be less; in soft, medium hard and coarse-grained formations with high rotary speed, the flushing water should be increased to discharge the debris effectively.
- b. Bit Type:** High rotary speed is usually used on impregnated core bits. Because of the fine diamond grains on impregnated core bits, more flushing water should be used to cool the diamond grains and the matrix of impregnated core bits, so as to avoid the diamonds damaged from oxidation and graphitization, and protect the bit matrix from being worn too fast by the debris. The self-sharpening ability of surface set core bits is better than that of impregnated core bits. Also, surface set core bits have advantages on debris removal and cooling, so its flushing water can be a little less than that of Impregnated core bit.
- c.** Besides, **the performance of the bit matrix, diamond sizes, bit waterways, rotary speed, drilling pressure** also affect the flushing water. Those all should be taken into consideration.

"Forsun" Matrix Index for Impregnated Diamond Core Bits

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Soft	Broken and Backfilled Stratum										
	Clay										
	Sandstone										
	Gypsum										
	Talc										
	Tuff										
	Shale										
	Serpentinite										
	Calcite										
Medium	Siltstone										
	Limestone										
	Marble										
	Andesite										
	Dolomite										
	Reinforce concrete										
	Porphyry										
Hard	Basalt										
	Pegmatite										
	Gabbro										
	Schist										
	Norite										
	Syenite										
	Peridotite										
Very Hard	Amphibolite										
	Diorite										
	Gneiss										
	Granite										
	Rhyolite										
	Quartzite										
	Ironstone										
Ultra Hard	Taconite										
	Jasperite										
	Quartz										
	Chert										
	Coarse-grained, fractures weathered, abrasive formations										
	Coarse-grained, fractures weathered, very abrasive formations										

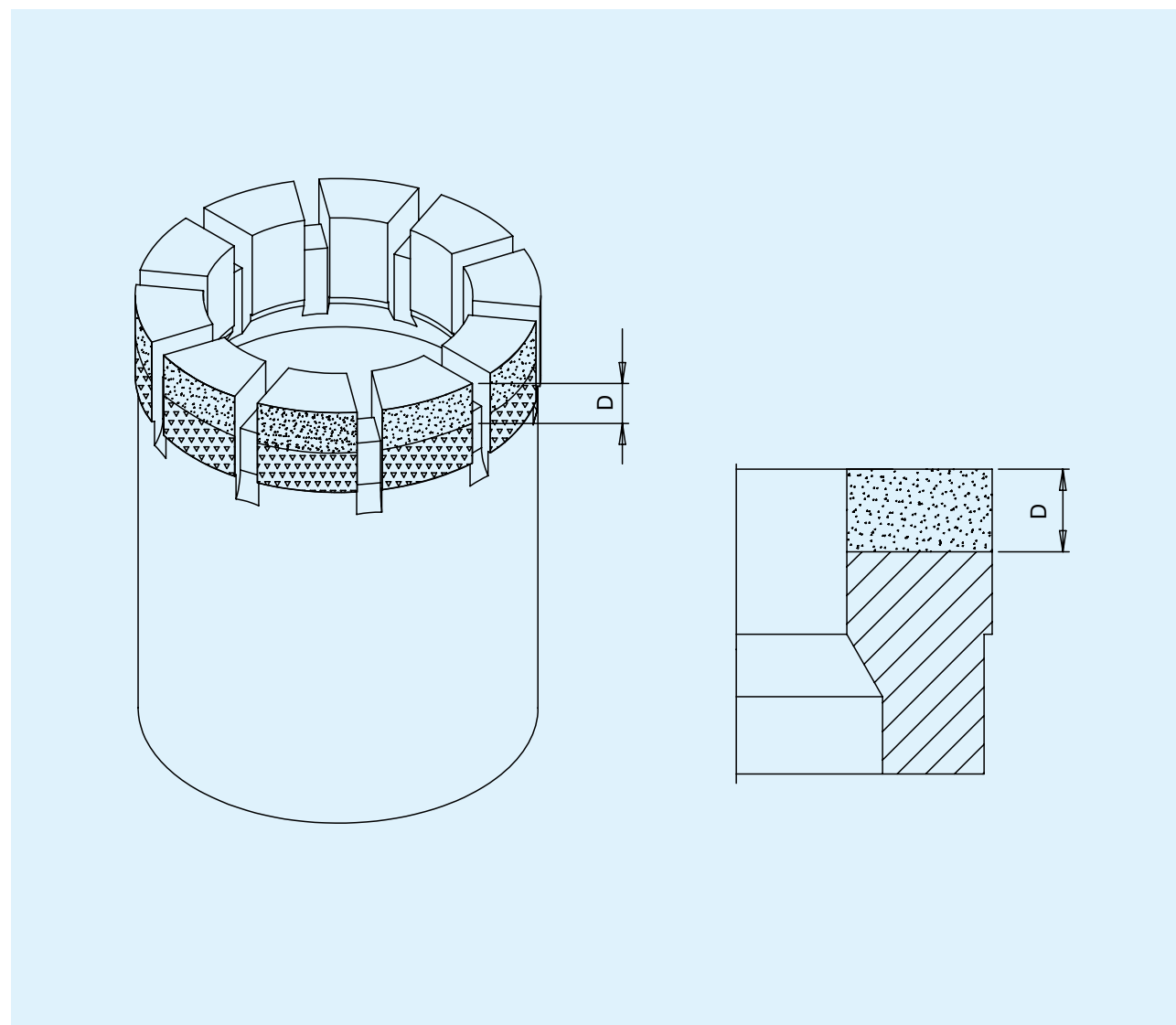
"Forsun" Matrix Selection Index for Surface Set, T.C., E.P., PCD and PDC Bits.

Rock Description	Hardness	T.C. Bits	Surface Set	Electroplated Bits			PDC Bit	PCD Bit
				35°	30°	25°		
Clay Chalk Gypsum	Soft							
Sand Shale Salt Hard Shale Ice Med. Hard Limestone	Soft To Medium							
Sandy Shale Shale Claystone Sandy Limestone	Medium Hard Non Abrasive							
Siltstone Alluvial Dep Calcitic Hard Shale	Medium Hard Abrasive							
Hard Limestone Schist Serpentine	Hard Abrasive							
Hard Schist Hard Siliceous Dolomite Marble Syeite Diabase Pegmatite Hematite Magnetite	Hard Non Abrasive							
Gneiss Granite Basalt Diorite Gabbro Rhyolite Amphibolite	Very Hard							
Conglomerate Taconite Abrasive Quarzite Abrasive Sand Stone	Very Abrasive							

Matrix Height

- ◆ Standard Impregnated Core Bits are available with different Matrix Heights:
- ◆ 6mm, 8mm, 9mm, 10mm, 12mm, 14mm.
- ◆ Forsun Standard Matrix Height is 6mm and we provide with extra height upon customer's request.
- ◆ Generally, 6mm height is recommended for conventional Bits; 8mm or higher are recommended for wireline core bits.

Matrix Height (D):



Crown Profiles

- ◆ To suit various drilling conditions encountered and meet worldwide customer's requirements, Forsun designs and produces core bits in corresponding crown profiles.
- ◆ The basic profiles are as below. Some special profiles may not be available in certain bit sizes due to the improper kerf width or matrix hardness of the bit.



W Profile

- ◆ Standard Profile for most impregnated core bits, usually produced in a matrix height over 6mm. It provides good drilling stability and is suitable for various formations.



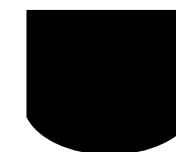
Flat Profile

- ◆ It's suitable for various rocks, often used in impregnated casing bits, casing shoe bits as well as the core bits with very hard matrices (e.g. F1, F2).



Cross Profile

- ◆ It's especially designed for ultra-hard formations, such as granite (hardness 8-9), ganister, quartzite, siliceous limestone, chert, etc.



Semi-Round Profile

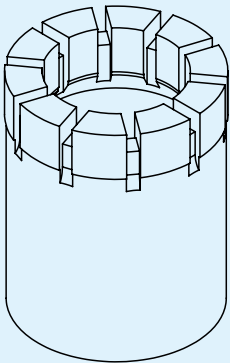
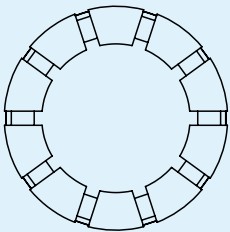
- ◆ Impregnated core bits with this profile are recommended for highly fractured formations with good drilling stability. Surface set bits of this style have a long bit life and the matrix is not easy to be damaged.



Multi-Step Profile

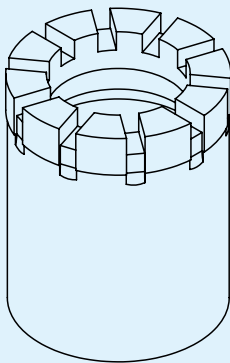
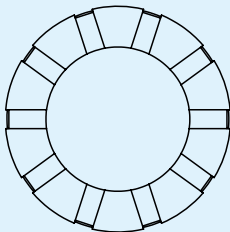
- ◆ Multi-Step type impregnated core bits are suitable for soft to medium hard formations and alternating hard-soft formations. With very good drilling stability, it makes the borehole not liable to deflection and the penetration fast. This profile is also often adopted in thick-kerf surface set core bits, having good drilling stability and fast penetration.

Waterway Configurations



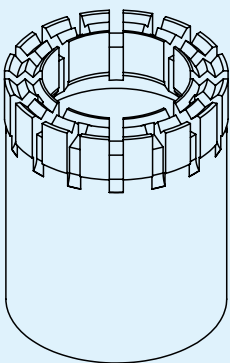
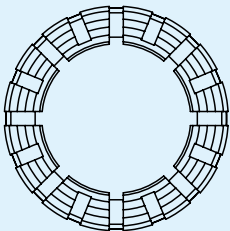
1. Standard Type (no discharge hole)

◆ Waterway without discharge hole is the standard type, applied in normal formations.



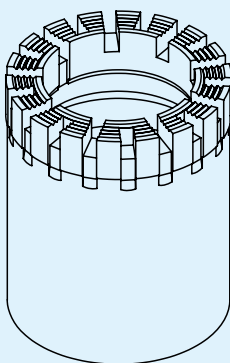
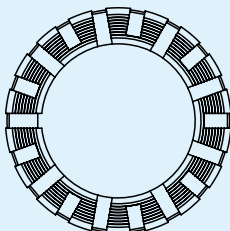
2. Wide Type

◆ This waterway is wider than the standard type, applied in formations in which there is much rock debris, eg. clay, shale, coal gangue, etc.



3. Turbo Type

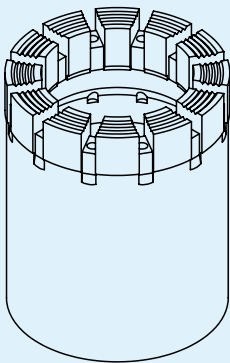
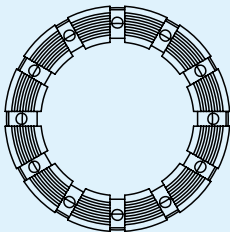
◆ It's suitable for relatively hard fractured formations or hard competent formations.



4. Wide Turbo Type

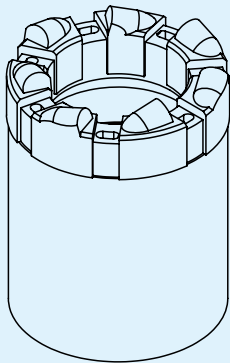
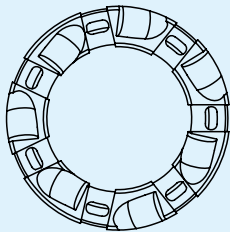
◆ Suitable for medium hard fractured formations where there is much slurry and rock debris.

Waterway Configurations



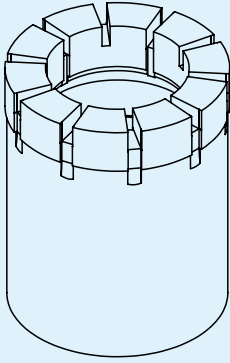
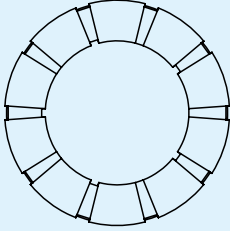
5. Round Hole Face Discharge Type

◆ It's suitable for triple tube core barrels, to improve recovery rate. It reduces the flush fluid's erosion against the core during drilling.



6. Slot Hole Face Discharge Type

◆ It's often adopted in PDC bit, TSP bit, and has bigger flow capacity, which minimizes the occurrence of discharge hole blockage. It's suitable for drilling in fractured formations where there is much flush fluid and rock debris.



7. Trapezoid Type

◆ It's suitable for the core bits with a thick matrix; it facilitates debris removal and flow capacity, and makes the bit wear out evenly.

Impregnated Diamond Non-coring Bits
(Concave type & Convex type)

- ◆ Size Available: 56mm, 60mm, 76mm, 86mm, 101mm, 116mm etc.
- ◆ Other sizes are available as per request.



Surface Set Diamond Non-coring Bits
(Concave type & Convex type)

- ◆ Size Available: 56mm, 60mm, 76mm etc.
- ◆ Other sizes are available as per request.



Drag Bits

- ◆ These bits are manufactured from strong steel, with sintered tungsten carbide insert cutting edges, available in two types, chevron type and step type.



3-wing Step Type Drag Bit	
Size	Pin Thread
2 7/8"	2 3/8" API REG
3 1/2"	2 3/8" API REG
3 7/8"	2 3/8" API REG
4"	2 3/8" API REG
4 3/4"	2 3/8" API REG
5"	3 1/2" API REG
5 1/2"	3 1/2" API REG
6"	3 1/2" API REG
6 1/2"	3 1/2" API REG
7"	3 1/2" API REG
7 1/2"	3 1/2" API REG
8"	3 1/2" API REG
8 1/2"	3 1/2" API REG
9"	3 1/2" API REG
9 1/2"	3 1/2" API REG
10"	3 1/2" API REG
10 1/2"	3 1/2" API REG
12"	4 1/2" API REG

3-wings Chevron Type Drag Bit	
Size	Pin Thread
2 7/8"	2 3/8" API REG
3 1/2"	2 3/8" API REG
3 7/8"	2 3/8" API REG
4"	2 3/8" API REG
4 3/4"	2 3/8" API REG
5"	3 1/2" API REG
5 1/2"	3 1/2" API REG
6"	3 1/2" API REG
6 1/2"	3 1/2" API REG

PDC Non-coring Bit

◆ These bits are manufactured from strong steel, with PDC insert cutting edges. It has steel type and matrix type.



Steel Type		
Size	Wings	Pin Thread
1 7/8"	3	AW rod
2"	3	AW rod
2 1/2"	3	AW rod
2 3/8"	3	AW rod
2 7/8"	3	AW rod
3"	3	NW rod, 2 3/8" API REG
3 1/2"	3	NW rod, 2 3/8" API REG
3 3/4"	3	NW rod, 2 3/8" API REG
3 7/8"	3	NW rod, 2 3/8" API REG
4"	3	2 3/8" API REG
4 1/2"	3	2 3/8" API REG
4 3/4"	3	2 3/8" API REG
4 7/8"	3	2 3/8" API REG
5"	3	3 1/2" API REG
5 1/2"	3	3 1/2" API REG
5 3/4"	3	3 1/2" API REG
5 7/8"	3	3 1/2" API REG
6"	3/4	3 1/2" API REG
6 1/2"	3/4	3 1/2" API REG
6 3/4"	3/4	3 1/2" API REG
7"	3/4	3 1/2" API REG
7 1/2"	3/4	3 1/2" API REG
7 3/4"	3/4	3 1/2" API REG
7 5/8"	3/4	3 1/2" API REG
8"	3/4/5	3 1/2" API REG
8 1/2"	3/4/5	3 1/2" API REG
8 3/4"	3/4/5	3 1/2" API REG
8 5/8"	3/4/5	3 1/2" API REG
9 1/2"	5	4 1/2" API REG
9 3/4"	5	4 1/2" API REG
9 7/8"	5	4 1/2" API REG
10"	5	4 1/2" API REG
10 3/4"	5	4 1/2" API REG
11"	5	4 1/2" API REG
12"	5	4 1/2" API REG
12 3/4"	5	4 1/2" API REG
Other and threads are also available as per request.		



Matrix Type	
Size	Thread
2"	As per need
2 1/2"	As per need
2 3/8"	As per need
2 7/8"	As per need
3"	As per need
3 1/2"	As per need
3 3/4"	As per need
3 7/8"	As per need
4"	As per need
4 1/2"	As per need
4 3/4"	As per need
4 7/8"	As per need
5"	As per need
5 1/2"	As per need
5 3/4"	As per need
5 7/8"	As per need
6"	As per need
Other sizes and threads are also available as per request.	





- ◆ Surface Set Diamond Type
- ◆ Tungsten Carbide Type
- ◆ PCD Type
- ◆ Impregnated Diamond Type
- ◆ Electroplated Diamond Type



◆ Surface Set Diamond Type



◆ Tungsten Carbide Type



◆ PCD Type



◆ Impregnated Diamond Type

Dimensions of Reaming shells

R-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
RWT (D)	1.180 / 1.170	29.97 / 29.72
E-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
EWG	1.490 / 1.480	37.85 / 37.59
EWM	1.490 / 1.480	37.85 / 37.59
EWT (EXT)	1.490 / 1.480	37.85 / 37.59
TEW	1.490 / 1.480	37.85 / 37.59
EWK (D)	1.4910 / 1.480	37.85 / 37.59
A-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
AQ	1.895 / 1.885	48.13 / 47.88
AWG / AX	1.895 / 1.885	48.13 / 47.88
AWM	1.895 / 1.885	48.13 / 47.88
AWT	1.895 / 1.885	48.13 / 47.88
LTK48	1.895 / 1.885	48.13 / 47.88
B-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
BQ	2.365 / 2.355	60.07 / 59.82
BQ-2.400	2.405 / 2.395	61.09 / 60.83
BQ3	2.365 / 2.355	60.07 / 59.82
BWG / BX	2.365 / 2.355	60.07 / 59.82
BWM	2.365 / 2.355	60.07 / 59.82
BWT	2.365 / 2.355	60.07 / 59.82
LTK60	2.365 / 2.355	60.07 / 59.82
TBW	2.365 / 2.355	60.07 / 59.82

Dimensions of Reaming shells

N-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
NQ	2.985 / 2.975	75.82 / 75.57
NQ-3.032	3.037 / 3.027	77.14 / 76.89
NQ2	2.985 / 2.975	75.82 / 75.57
NQ3 / NQTT	2.985 / 2.975	75.82 / 75.57
NWG / NX	2.985 / 2.975	75.82 / 75.57
NWM	2.985 / 2.975	75.82 / 75.57
NWT	2.985 / 2.975	75.82 / 75.57
TNW	2.985 / 2.975	75.82 / 75.57
H-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
HQ	3.790 / 3.775	96.27 / 95.89
HQ-3.830	3.840 / 3.825	97.54 / 97.16
HWF	3.912 / 3.902	99.36 / 99.11
HWG / HX	3.912 / 3.902	99.36 / 99.11
HWT	3.912 / 3.902	99.36 / 99.11
P-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
PQ	4.835 / 4.820	122.81 / 122.43
PQ3	4.835 / 4.820	122.81 / 122.43
PWF	4.755 / 4.740	120.78 / 120.40
S-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
SWF	5.755 / 5.740	146.18 / 145.80
SK6L146	5.771 / 5.759	146.58 / 146.27
Geobor S 146	5.771 / 5.759	146.58 / 146.27

Dimensions of Reaming shells

U-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
UWF	6.880 / 6.860	174.75 / 174.24
Z-Gauge Reaming Shells		
Size	Set Diameter	
	Inch	mm
ZWF	7.880 / 7.860	200.15 / 199.64
T, TT, T2, & TB Series Metric Reaming Shells		
Size	Set Diameter	
	Inch	mm
T2-36	1.433 / 1.425	36.40 / 36.20
TT46	1.827 / 1.819	46.40 / 46.20
T2-46	1.827 / 1.819	46.40 / 46.20
TB56	2.220 / 2.212	56.40 / 56.20
TT56	2.220 / 2.212	56.40 / 56.20
T2-56	2.220 / 2.212	56.40 / 56.20
T2-66	2.614 / 2.604	66.40 / 66.14
T2-76	3.012 / 3.000	76.50 / 76.20
T2-86	3.406 / 3.394	86.50 / 86.20
T2-101	3.996 / 3.984	101.50 / 101.20
T6 Series Metric Reaming Shells		
Size	Set Diameter	
	Inch	mm
T6-76	3.012 / 3.000	76.50 / 76.20
T6-86	3.406 / 3.394	86.50 / 86.20
T6-101	3.996 / 3.984	101.50 / 101.20
T6-116	4.590 / 4.575	116.60 / 116.20
T6-131	5.180 / 5.165	131.57 / 131.19
T6-146	5.772 / 5.757	146.60 / 146.22

Dimensions of Reaming shells

B Series (ISO 3552-1) Metric Reaming Shells		
Size	Set Diameter	
	Inch	mm
B36	1.433 / 1.425	36.40 / 36.20
B46	1.827 / 1.819	46.40 / 46.20
B56	2.220 / 2.212	56.40 / 56.20
B66	2.614 / 2.604	66.40 / 66.14
B76	3.012 / 3.000	76.50 / 76.20
B86	3.406 / 3.394	86.50 / 86.20
B101	3.996 / 3.984	101.50 / 101.20
B116	4.590 / 4.575	116.60 / 116.20
B131	5.180 / 5.165	131.57 / 131.19
B146	5.772 / 5.757	146.60 / 146.22
C Series Reaming Shells		
Size	Set Diameter	
	Inch	mm
BMLC	2.354 / 2.346	59.79 / 59.58
NMLC	2.985 / 2.975	75.82 / 75.57
HMLC	3.886 / 3.850	98.20 / 97.80
3C	4.377 / 4.370	111.17 / 110.99
4C	5.500 / 5.492	139.70 / 139.49
6C	7.748 / 7.736	196.80 / 196.49
Chinese Standard Metric Single Tube Reaming Shells		
Size	Set Diameter	
	Inch	mm
36	1.469 / 1.457	36.80 / 36.50
46	1.850 / 1.862	47.30 / 47.00
56	2.236 / 2.224	56.80 / 56.50
59	2.374 / 2.362	60.30 / 60.00
75	2.984 / 2.972	75.80 / 75.50
91	3.618 / 3.602	91.90 / 91.50
110	4.402 / 4.382	111.80 / 111.30

Dimensions of Reaming shells

130	5.189 / 5.169	131.80 / 131.30
150	5.976 / 5.957	151.80 / 151.30
170	6.764 / 6.744	171.80 / 171.30
219 (225)	8.890 / 8.874	225.80 / 225.40
275 (280)	11.063 / 11.043	281.00 / 280.50
Chinese Standard Metric Double Tube Core Barrel Reaming Shells		
Size	Set Diameter	
	Inch	mm
56	2.236 / 2.224	56.80 / 56.50
59	2.374 / 2.362	60.30 / 60.00
75	2.984 / 2.972	75.80 / 75.50
91	3.618 / 3.602	91.90 / 91.50
Chinese Standard Metric Wireline Core Barrel Reaming Shells		
Size	Set Diameter	
	Inch	mm
59	2.374 / 2.360	60.30 / 60.00
75	2.984 / 2.972	75.40 / 75.70
91	3.618 / 3.602	91.90 / 91.50



◆ Impregnated Diamond Type



◆ Surface Set Diamond Type



◆ Tungsten Carbide Type



◆ PDC Type (Matrix Type & Steel Body Type)

Dimensions of Casing Shoes & Rod Shoes

Size	Outside Diameter (mm)	Inside Diameter (mm)
RW	37.6	30.2
EW	47.5	38
AW	59.5	48.3
BW	75.2	60.2
NW	91.8	76
HW	117.4	101
*HW	117.4	99.7
PW	143.4	124.5
*PW	143.4	123.4
SW	172.4	151.0
*SW	172.4	146.8
UW	198	175.4
ZW	223.6	202.6
*ZW	223.6	200.7
RX	37.6	30.2
EX	47.5	38
AX	59.5	48.3
BX	75.2	60.2
NX	91.8	76
HX	117.4	99.7
PX	143.4	123.4
SX	172.4	146.8
UX	198	175.4
ZX	223.6	200.7
46	46	37
56	56	47
66	66	57
76	76	67
86	86	77
101	101	88
116	116	103
131	131	118
146	146	133
4"	117.5	96.9
5"	143.5	122.5
6"	172.3	147.8
8"	223.9	198.5
NQ Rod Shoe	75.2	60.1
HQ Rod Shoe	91.7	75.9
PQ Rod Shoe	117.4	101.2

Note: *Sizes HW, PW, SW and ZW are as per CDDA standard.

Dimensions of Casing Bits

Size	Outside Diameter (mm)	Inside Diameter (mm)
RW	37.6	25.4
EW	47.5	35.7
AW	59.5	45.2
BW	75.2	56.3
NW	91.8	72.2
HW	117.4	96
PW	143.4	117.7
SW	172.4	143.1
UW	198	171.6
ZW	223.6	197.3
RX	37.6	25.4
EX	47.5	35.7
AX	59.5	45.2
BX	75.2	56.3
NX	91.8	72.2
HX	117.4	96.0
PX	143.4	117.7
SX	172.4	143.1
UX	198	171.6
ZX	223.6	196.9
46	46	35
56	56	45
66	66	55
76	76	65
86	86	75
101	101	86.5
116	116	101.5
131	131	116.5
146	146	131.5



Double Tube Core Barrels

◆ A double-tube core barrel consists of two concentric tubes and a bearing arrangement in the core barrel head which allows the inner tube to remain stationary, whilst the outer tube and bit is rotated by the drill string. A core lifter is fitted between the bits and the inner tube. The flushing medium passes through the annulus between the inner and outer tubes, thus protecting the recovered sample from erosion.

Triple Tube Core Barrels

◆ A triple-tube core barrel is similar in construction to the double-tube design but is fitted with an additional third tube in the inner tube.

Single Tube Core Barrels

◆ A single-tube core barrel consists of a core tube fitted with a bit at its lower end and a core barrel head that attached to the drill rods at its upper end. A core lifter can be fitted between the bit and reaming shell. The flushing medium passes between the inside diameter of the core tube and the recovered rock core and continuously washes the length of the recovered sample.

Double Tube Core Barrels

Wireline Double Tube Core Barrels

◆ In sampling by wireline core drilling, a double-tube or triple-tube core barrel with a bit fitted to the lower end is rotated and fed into the rock type to be drilled by the drill rig via the wireline drill rods. This action produces a core sample within the inner tube of the core barrel. When the coring run is completed, the inner tube containing the core sample is withdrawn through the drill rods by means of a wireline cable and winch. The bit, outer tube and drill rods remain in the borehole during this process.

◆ Wireline double core barrels are primarily used in deep coring. With an overshot device, they eliminate the need to couple and uncouple the rod string each time the core is retrieved. Available sizes A, B, N, H, P, S and Chinese Standard core barrels.

TT Series Double Tube Core Barrels

◆ Ultra-Thin wall double tube core barrels are available in diameters of 46mm and 56mm. Very thin cutting face allows very rapid penetration rate through hard formation. They are suitable for underground mining applications.

T2 Series Double Tube Core Barrels

◆ T2 series are thin wall double tube core barrels, used for surface diameters, especially mining application and geotechnical drilling. Due to thin kerf, this kind of core barrels provide rapid penetration. Available in diameters 36mm, 46mm, 56mm, 66mm, 76mm, 86mm and 101mm.

T6 Series Double Tube Core Barrels

◆ These are a continuation of the T2 series double tube core barrels, but of a sturdier design and available in large diameters, 76mm, 86mm, 101mm, 116mm, 131mm, and 146mm. They are applied in surface mining and geotechnical drilling.

T6S Series Double Tube Core Barrels

◆ Available size: 76mm, 86mm, 101mm, 116mm, and 131mm.

LTK Series Double Tube Core Barrels

◆ The LTK series core barrels system is a thinner wall core barrel than T2 series. They offer a cost effective, high production, which is designed for optimum production and core recovery in medium to extra hard rock formations. Available sizes 48 and 60mm.

WF Series Double Tube Core Barrels

◆ They are geotechnical core barrels primarily designed for coring relatively soft formations in using face-discharge bits. Simple construction and more resilient to damage than thin-wall barrels. Available size: HWF, PWF, SWF, UWF, ZWF and 412F.

WG Series Double Tube Core Barrels

◆ There are double tube core barrels for WG series. Available in DCDMA sizes E, A, B, N, and H.

WM Series Double Tube Core Barrels

◆ WM series double tube core barrels was developed as a solution to the ever present problem of recovering a high percentage of core when drilling badly fractured or broken strata or soft and friable material that is easily eroded by the circulating fluid.

Mud or water can be used with this core barrel while drilling. It is a sturdier design when compared to the metric series core barrels. Available size: NWM and HWM.

Chinese Standard Double Tube Core Barrels

Triple Tube Core Barrels

C Series Triple Tube Core Barrels

◆ These triple tube core barrels are generally used for geotechnical purpose, designed to maximize core recovery in soft formations. Available diameter sizes: BMLC, NMLC, HMLC, 3C, 4C, 6C.

Wireline Triple Tube Core Barrels

◆ Wireline triple tube core barrels are generally required in broken, fractured formations. They incorporate a third, split inner tube on base of wireline double tube core barrel. This can be pumped out of the inner tube after retrieval, allowing the core to be examined in its in-situ state. Available size: B, N, H , P, S and Geobor-S, SK6L and Chinese standard core barrels.

T2 Series Triple Tube Core Barrels

◆ Available size: 76mm, 86mm and 101mm.

T6 Series Triple Tube Core Barrels

◆ Available size: 76mm, 86mm, 101mm, 116mm, 131mm, 146mm.

WF Series Triple Tube Core Barrels

◆ Available size: HWF, PWF, SWF, 412F.

Single Tube Core Barrels

B Series Single Tube Core Barrels

◆ B series are single tube core barrels, often used in situations where core preservation is not essential and for concrete coring. Available diameters 46-146mm.

WG Series Single Tube Core Barrels

◆ There are single tube core barrels for WG series. Available in DCDMA sizes EWG, AWG, BWG, NWG, and HWG.

Chinese Standard Single Tube Core Barrels

BQ Wireline Double Tube Core Barrel

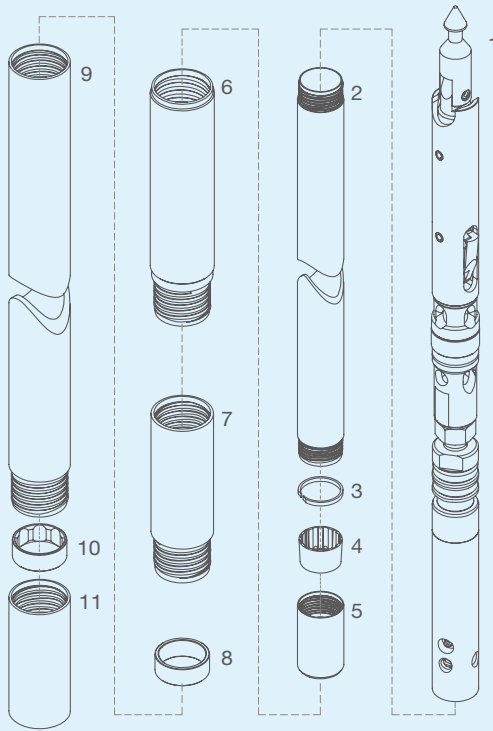
Size	Hole (mm)	Core (mm)
BQ	59.3	36.2

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Stop Ring
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Locking Coupling
- 7. Adaptor Coupling
- 8. Landing Ring
- 9. Outer Tube
- 10. Inner Tube Stabilizer
- 11. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



Core Barrels

Double Tube Core Barrel

NQ Wireline Double Tube Core Barrel

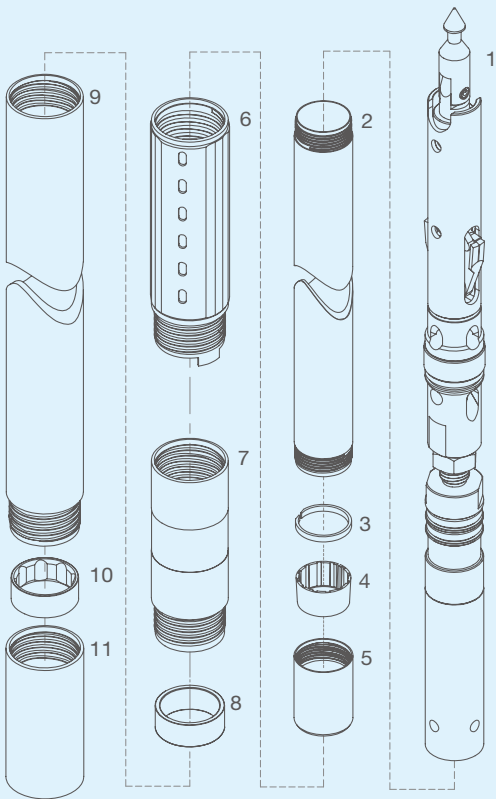
Size	Hole (mm)	Core (mm)
NQ	75.2	47.6

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Stop Ring
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Locking Coupling
- 7. Adaptor Coupling
- 8. Landing Ring
- 9. Outer Tube
- 10. Inner Tube Stabilizer
- 11. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



Core Barrels

Double Tube Core Barrel

HQ Wireline Double Tube Core Barrel

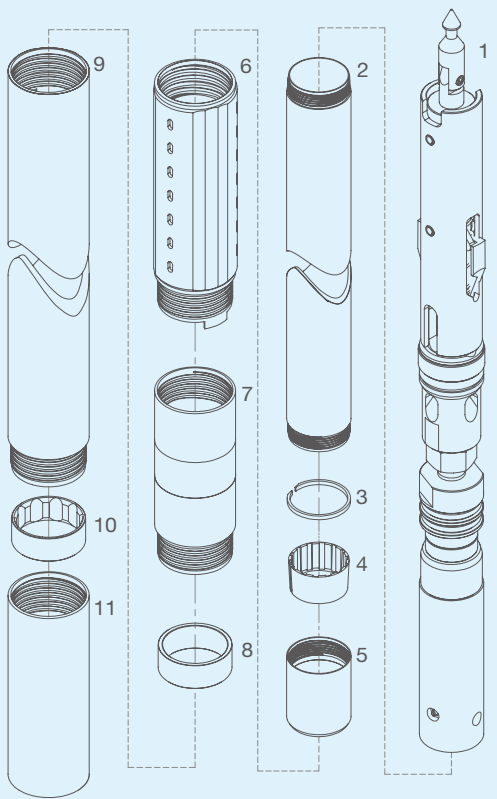
Size	Hole (mm)	Core (mm)
HQ	95.6	63.5

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Stop Ring
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Locking Coupling
- 7. Adaptor Coupling
- 8. Landing Ring
- 9. Outer Tube
- 10. Inner Tube Stabilizer
- 11. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



PQ Wireline Double Tube Core Barrel

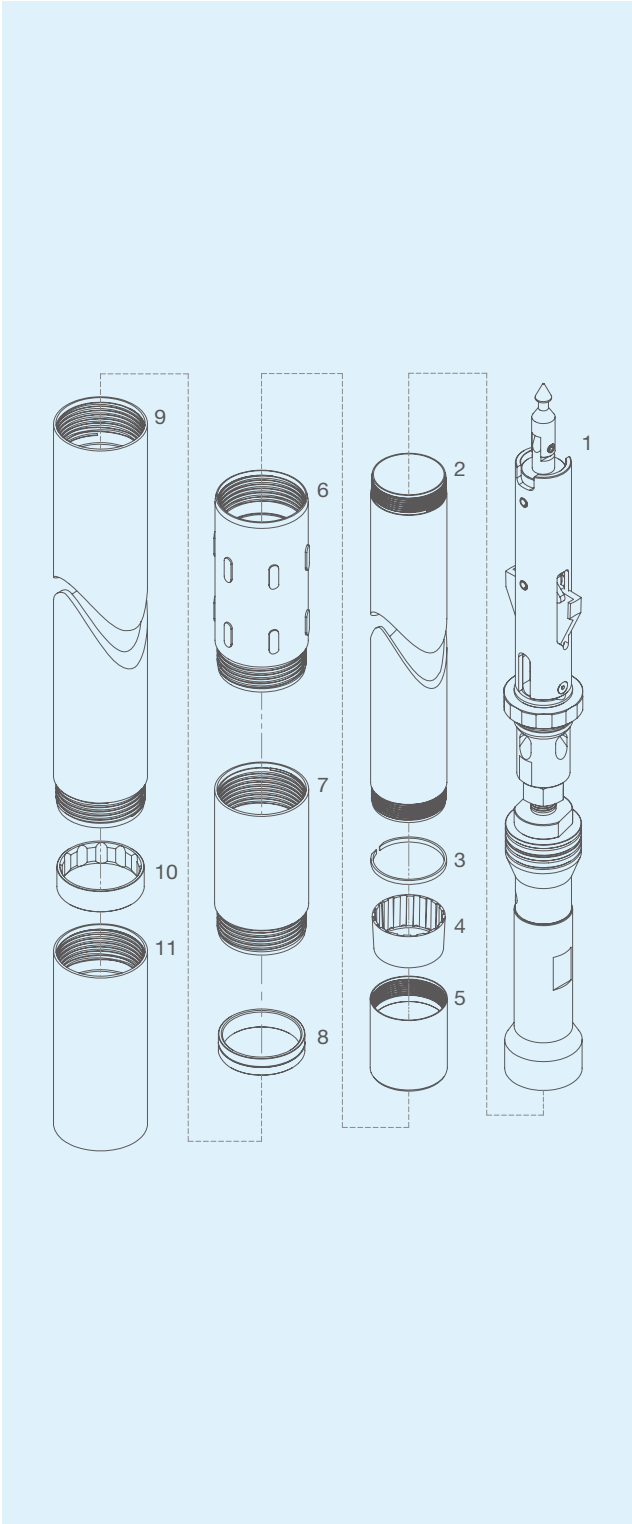
Size	Hole (mm)	Core (mm)
PQ	122	85

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Stop Ring
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Locking Coupling
- 7. Adaptor Coupling
- 8. Landing Ring
- 9. Outer Tube
- 10. Inner Tube Stabilizer
- 11. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



NQ2 Wireline Double Tube Core Barrel

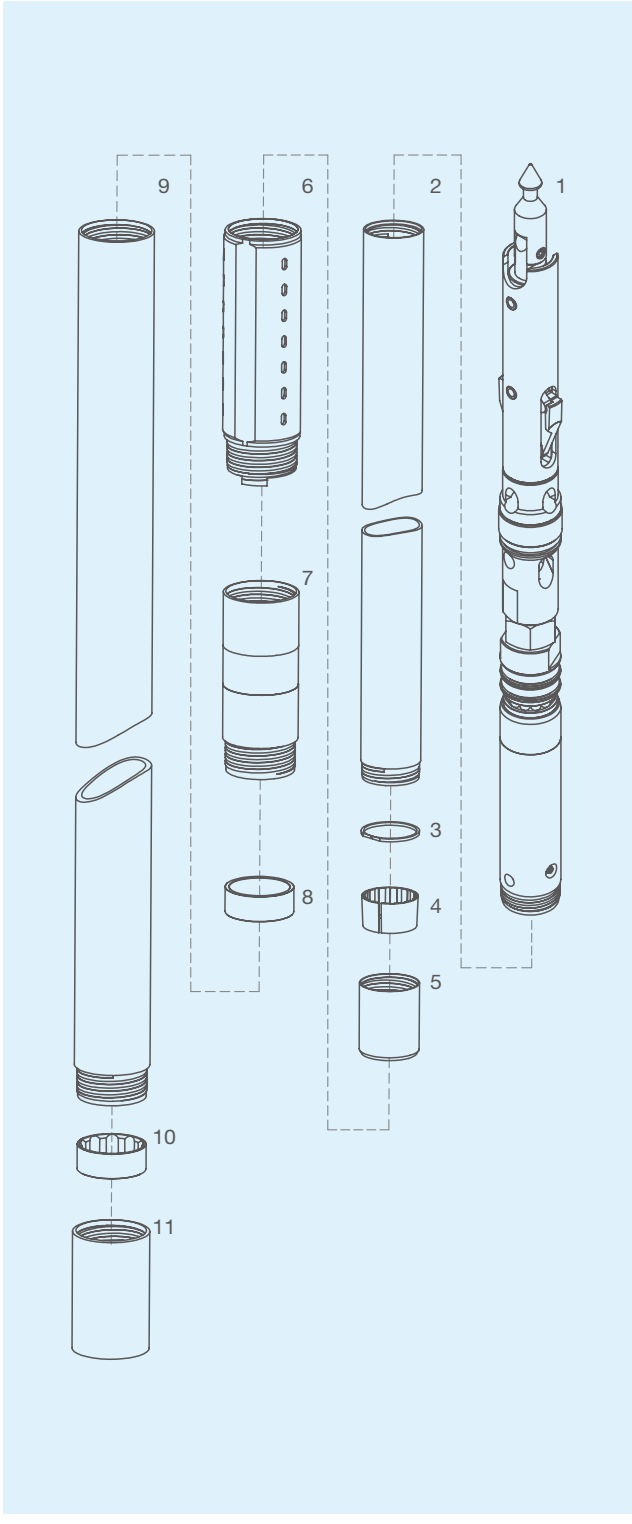
Size	Hole (mm)	Core (mm)
NQ2	75.2	50.7

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Stop Ring
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Locking Coupling
- 7. Adaptor Coupling
- 8. Landing Ring
- 9. Outer Tube
- 10. Inner Tube Stabilizer
- 11. Thread Protector

Note :

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



Chinese Standard Wireline Double Tube Core Barrels

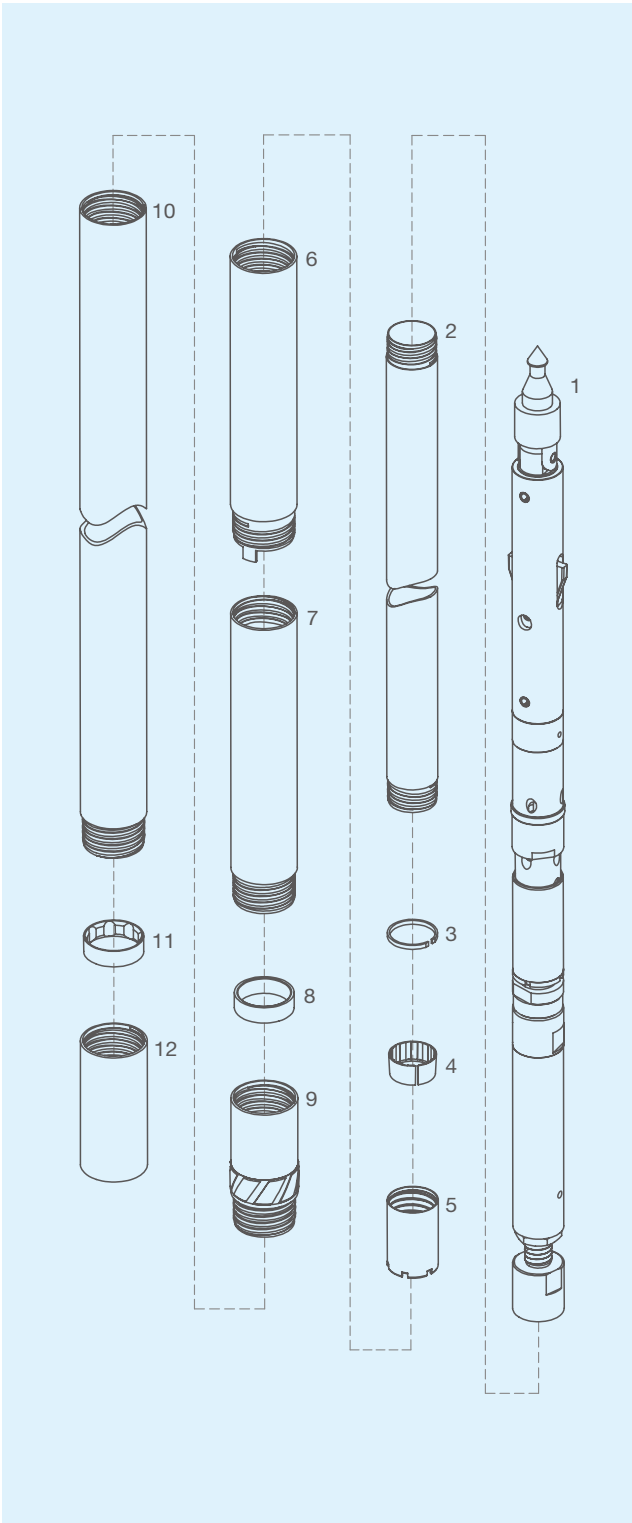
Size	Hole (mm)	Core (mm)
56	56.20	34.80
59	59.50	36.00
75	75.20	49.00
91	91.20	62.00

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Stop Ring
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Locking Coupling
- 7. Adaptor Coupling
- 8. Landing Ring
- 9. Reaming Shell
- 10. Outer Tube
- 11. Stabilizer
- 12. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



TT Series Double Tube Core Barrels

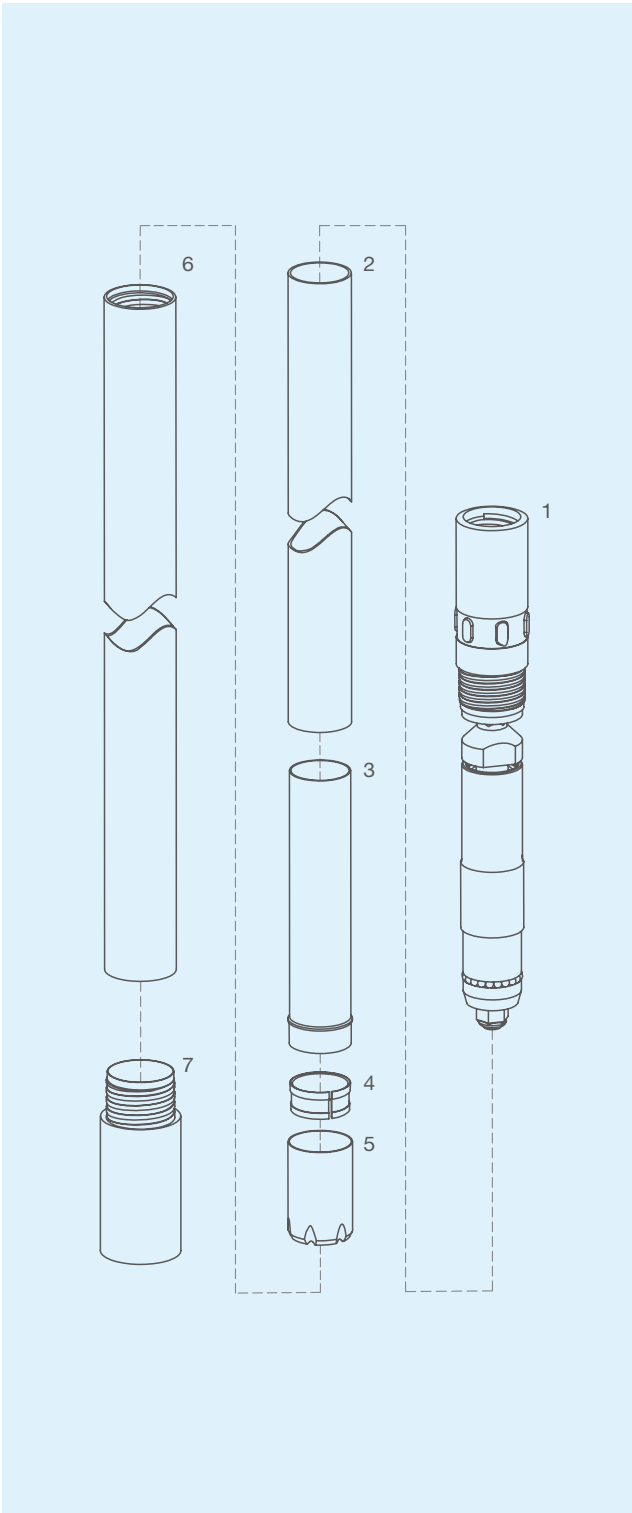
Size	Hole (mm)	Core (mm)	Head Thread
TT46	46	35.2	As per need
TT56	56	45.2	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Extension Tube
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube
- 7. Thread Protector

Note :

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



T2 Series Double Tube Core Barrels

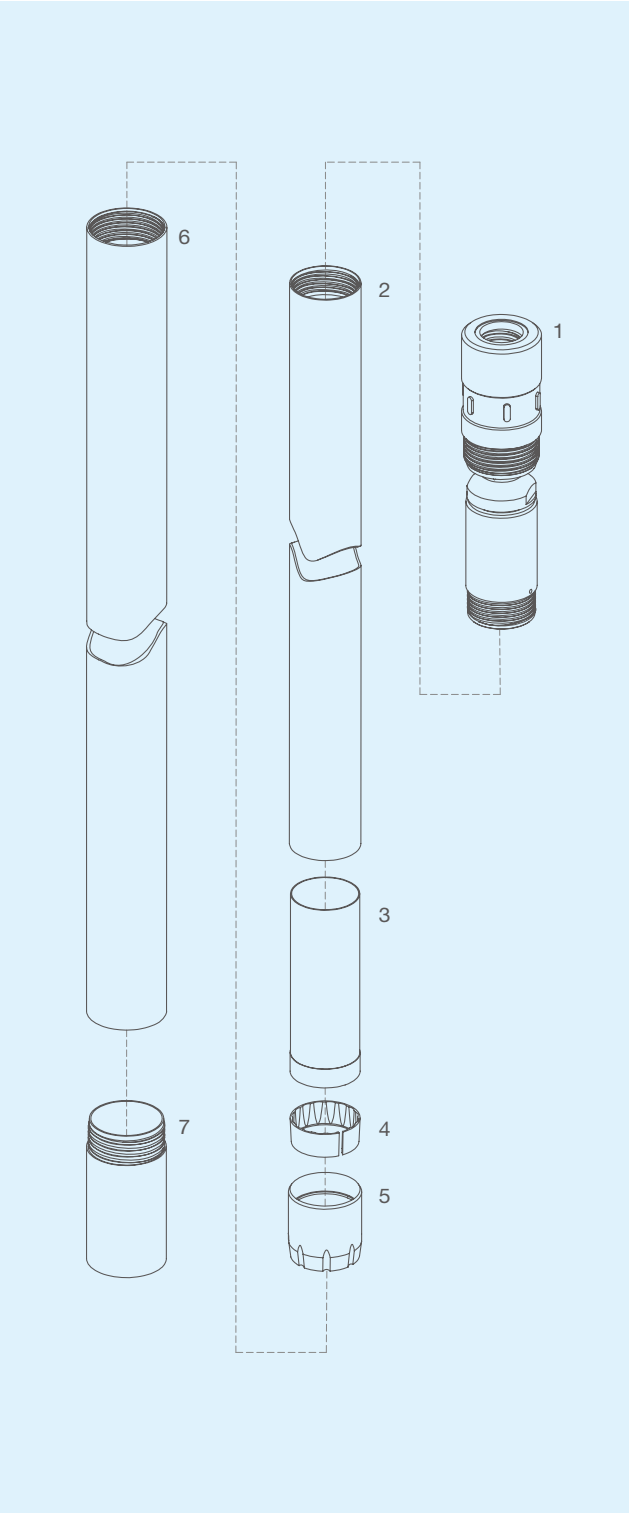
Size	Hole (mm)	Core (mm)	Head Thread
T2-36	36	22	As per need
T2-46	46	32	As per need
T2-56	56	42	As per need
T2-66	66	52	As per need
T2-76	76	62	As per need
T2-86	86	72	As per need
T2-101	101	83.6	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Extension Tube
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube
- 7. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



T6 Series Double Tube Core Barrels

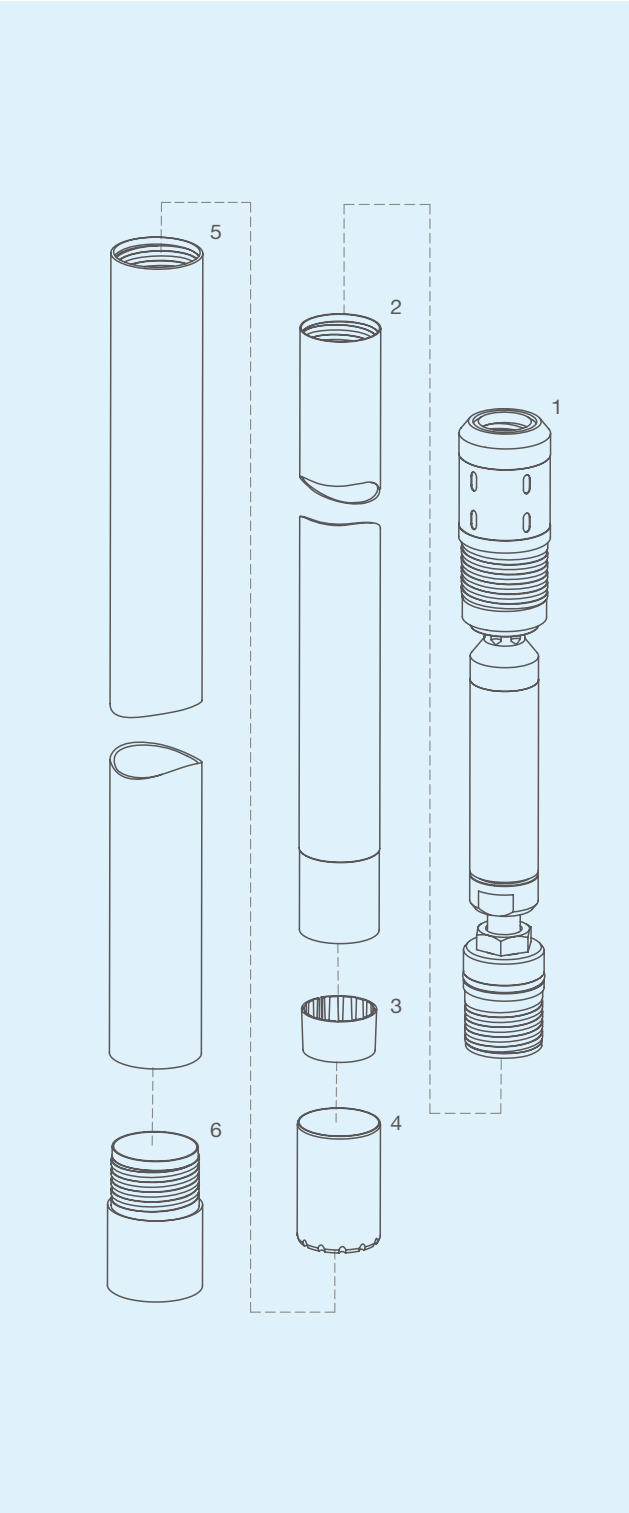
Size	Hole (mm)	Core (mm)	Head Thread
T6-76	76	57	As per need
T6-86	86	67	As per need
T6-101	101	79	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Core Lifter
- 4. Core Lifter Case
- 5. Outer Tube
- 6. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



T6 Series Double Tube Core Barrels

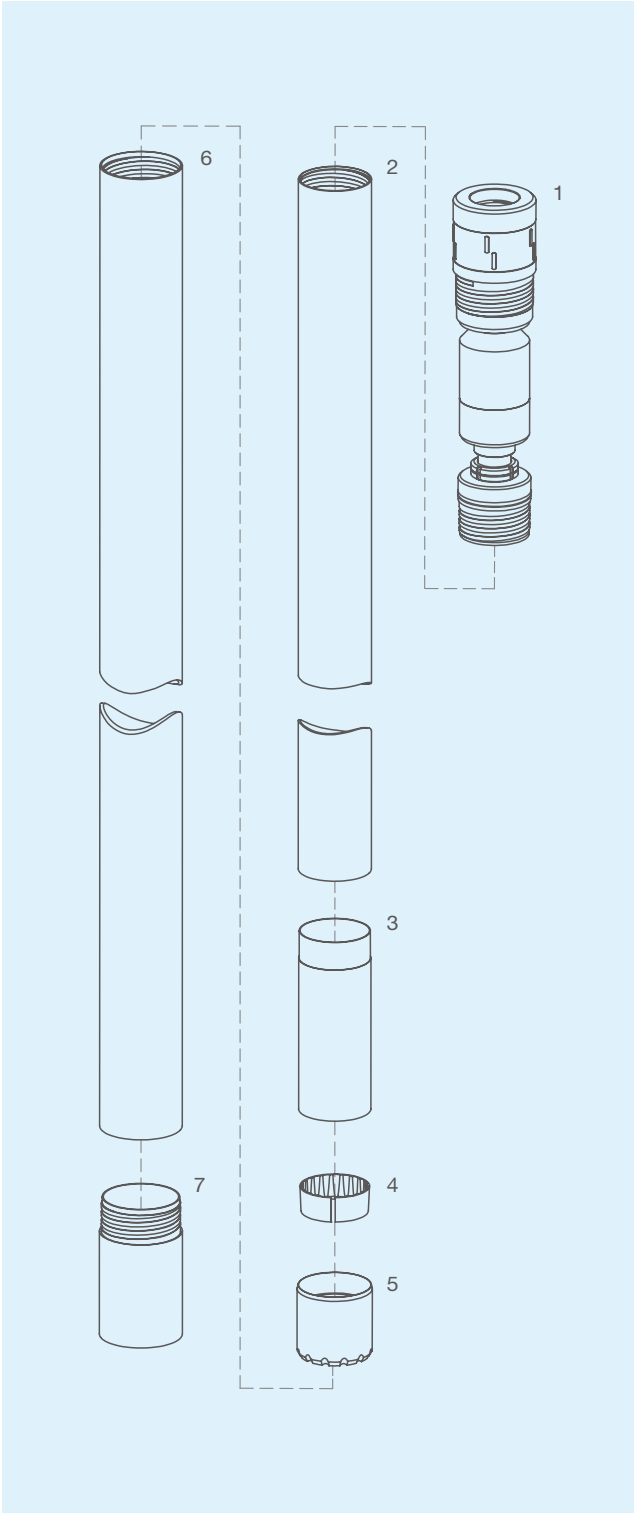
Size	Hole (mm)	Core (mm)	Head Thread
T6-116	116	93	As per need
T6-131	131	108	As per need
T6-146	146	123	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Extension Tube
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube
- 7. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



T6S Series Double Tube Core Barrels

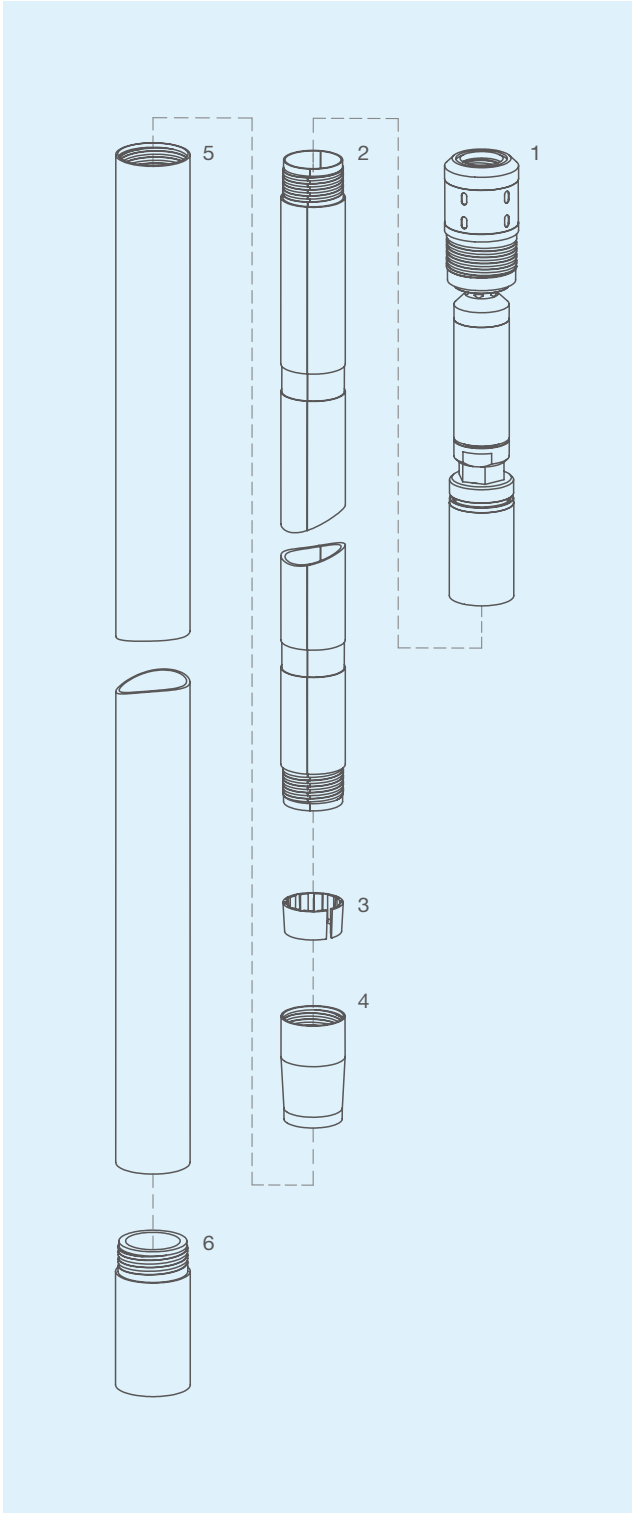
Size	Hole (mm)	Core (mm)	Head Thread
T6S-76	76.0	48.0	As per need
T6S-86	86.0	58.0	As per need
T6S-101	101.0	72.0	As per need
T6S-116	116.0	86.0	As per need
T6S-131	131.0	101.0	As per need
T6S-146	146.0	116.0	As per need

Components:

- 1. Head Assembly
- 2. Split Inner Tube
- 3. Core Lifter
- 4. Core Lifter Case
- 5. Outer Tube
- 6. Thread Protector

Note:

- 1. Core Bit is not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m length core barrels are available.



LTK Series Double Tube Core Barrels

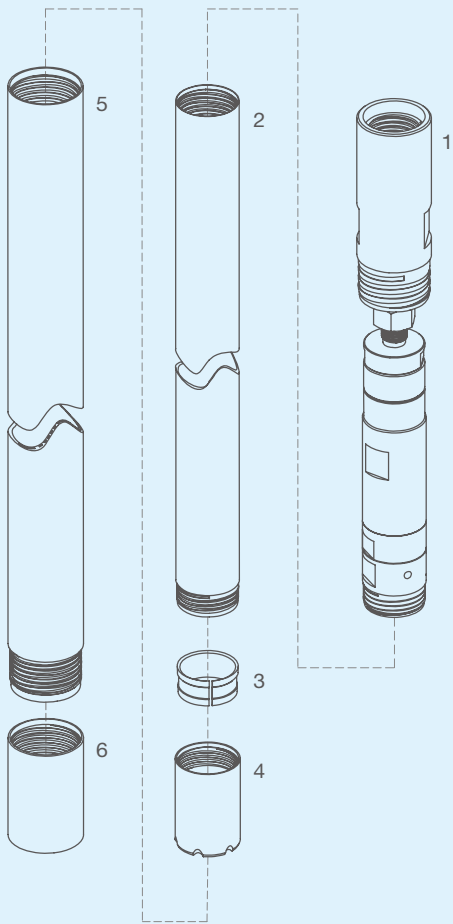
Size	Hole (mm)	Core (mm)	Head Thread
LTK48	47.6	35.2	As per need
LTK60	59.6	44	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Core Lifter
- 4. Core Lifter Case
- 5. Outer Tube
- 6. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



WF Series Double Tube Core Barrels

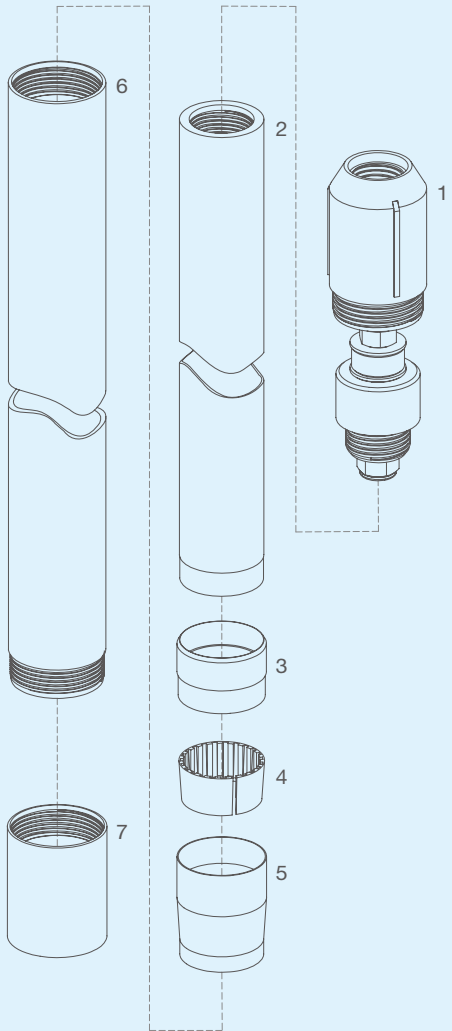
Size	Hole (mm)	Core (mm)	Head Thread
HWF	99.6	76.2	As per need
PWF	120.6	92.1	As per need
SWF	146	112.7	As per need
UWF	174.5	139.7	As per need
ZWF	199.8	165.2	As per need
412F	107.2	74.7	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Ferrule
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube
- 7. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



WG Series Double Tube Core Barrels

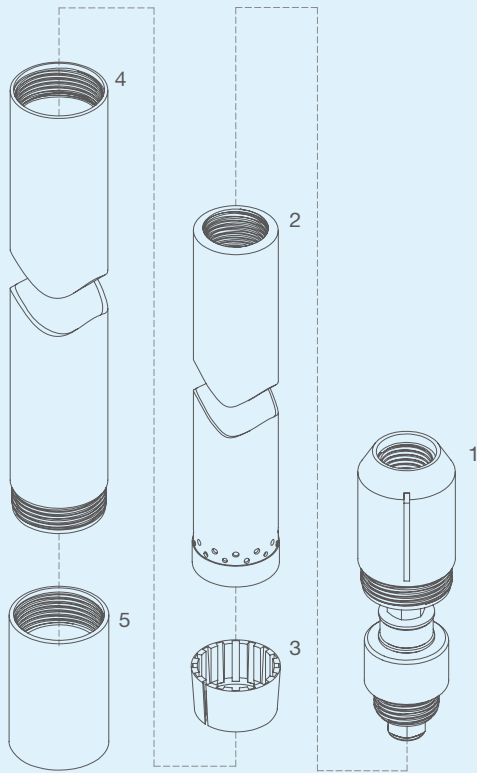
Size	Hole (mm)	Core (mm)	Head Thread
EWG	37.3	21.5	As per need
AWG	47.6	30	As per need
BWG	59 .3	42	As per need
NWG	75.2	54.7	As per need
HWG	98.8	76.2	As per need

Components:

- 1. Double Tube Core Barrel Head
- 2. Inner Tube
- 3. Core Lifter
- 4. Outer Tube
- 5. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



WM Series Double Tube Core Barrels

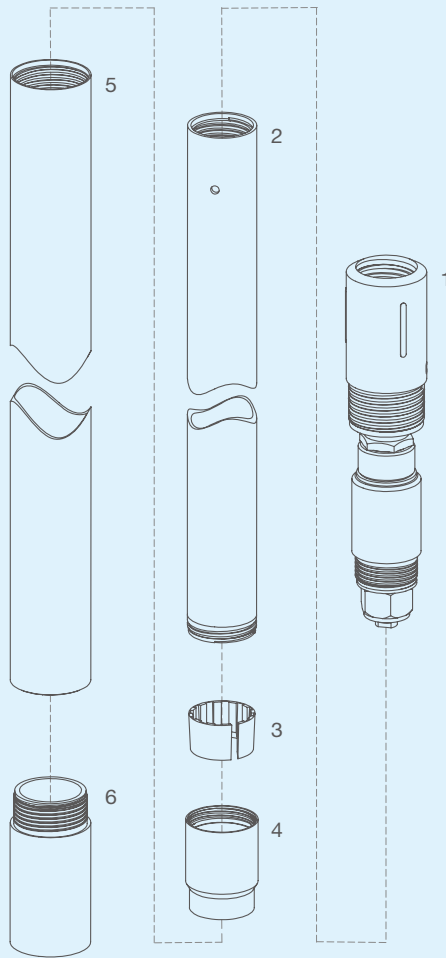
Size	Hole (mm)	Core (mm)	Head Thread
EWM	37.3	21.5	As per need
AWM	47.6	30	As per need
BWM	59 .3	42	As per need
NWM	75.2	54.7	As per need
HWM	98.8	76.2	As per need

Components:

- 1. Double Tube Core Barrel Head
- 2. Inner Tube
- 3. Core Lifter
- 4. Core Lifter Case
- 5. Outer Tube
- 6. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



Core Barrels

Double Tube Core Barrel

Core Barrels

Triple Tube Core Barrel

Chinese Standard Conventional Double Tube Core Barrels

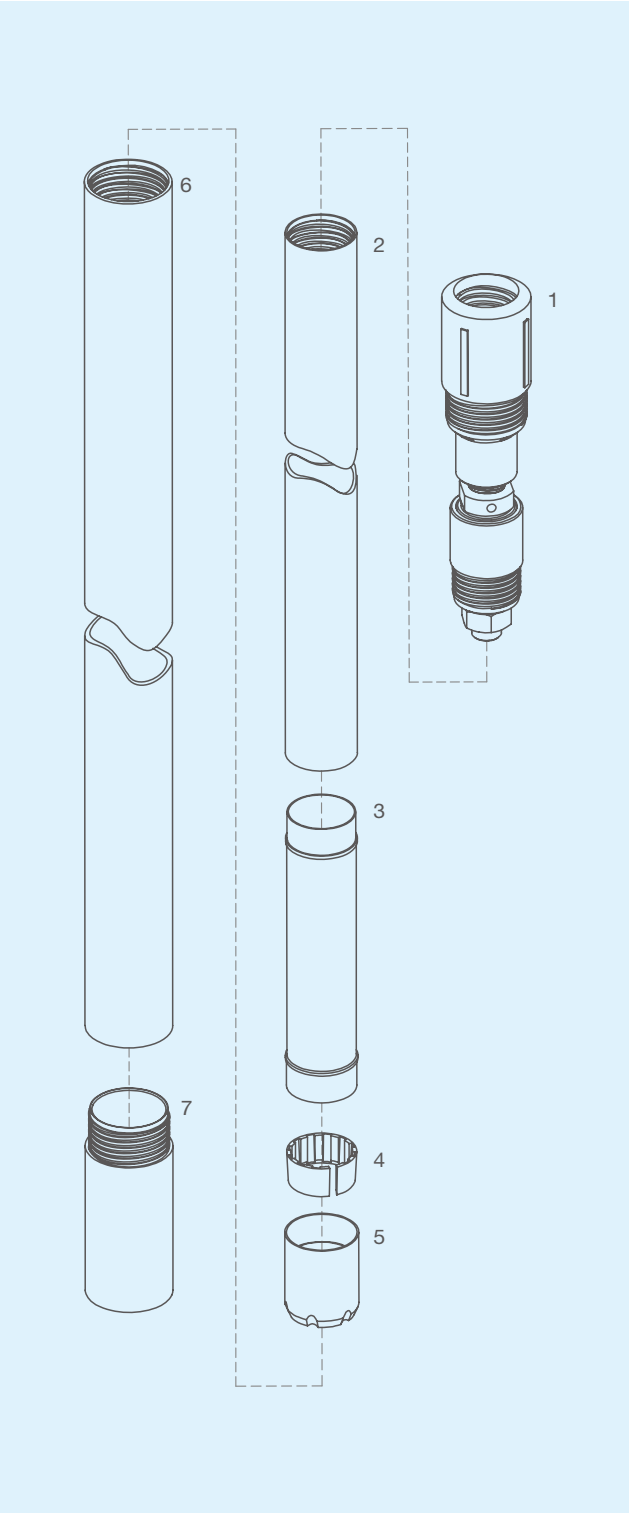
Size	Hole (mm)	Core (mm)	Head Thread
46	46.5	29	As per need
59	59.3	41.5	As per need
75	75.2	54.5	As per need
91	91.2	68	As per need

Components:

- 1. Head Assembly
- 2. Inner Tube
- 3. Extension Tube
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube
- 7. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m core barrels are available.



NQ3 Wireline Triple Tube Core Barrel

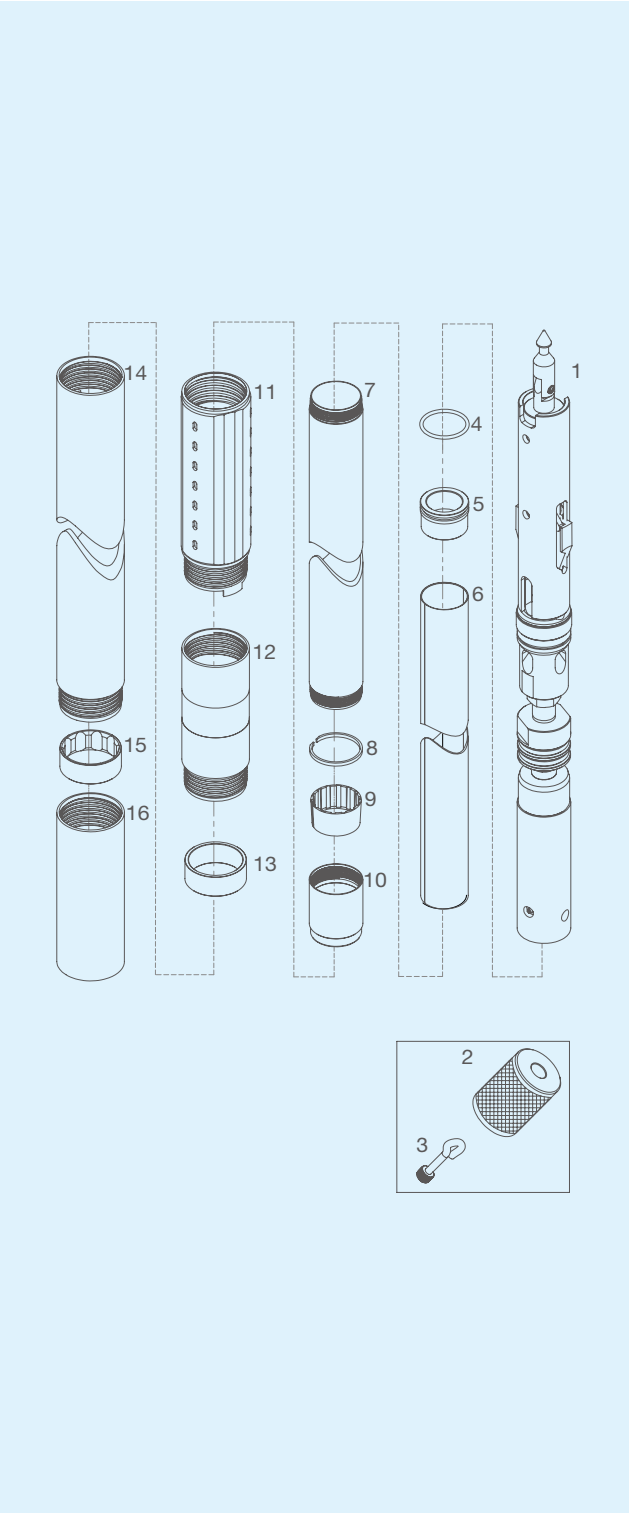
Size	Hole (mm)	Core (mm)
NQ3	75.2	45

Components:

- 1. Head Assembly
- 2. Pump-Out Adaptor
- 3. Piston Plug
- 4. O Ring
- 5. Core Ejection Piston
- 6. Split Tube
- 7. Inner Tube
- 8. Stop Ring
- 9. Core Lifter
- 10. Core Lifter Case
- 11. Locking Coupling
- 12. Adaptor Coupling
- 13. Landing Ring
- 14. Outer Tube
- 15. Inner Tube Stabilizer
- 16. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



HQ3 Wireline Triple Tube Core Barrel

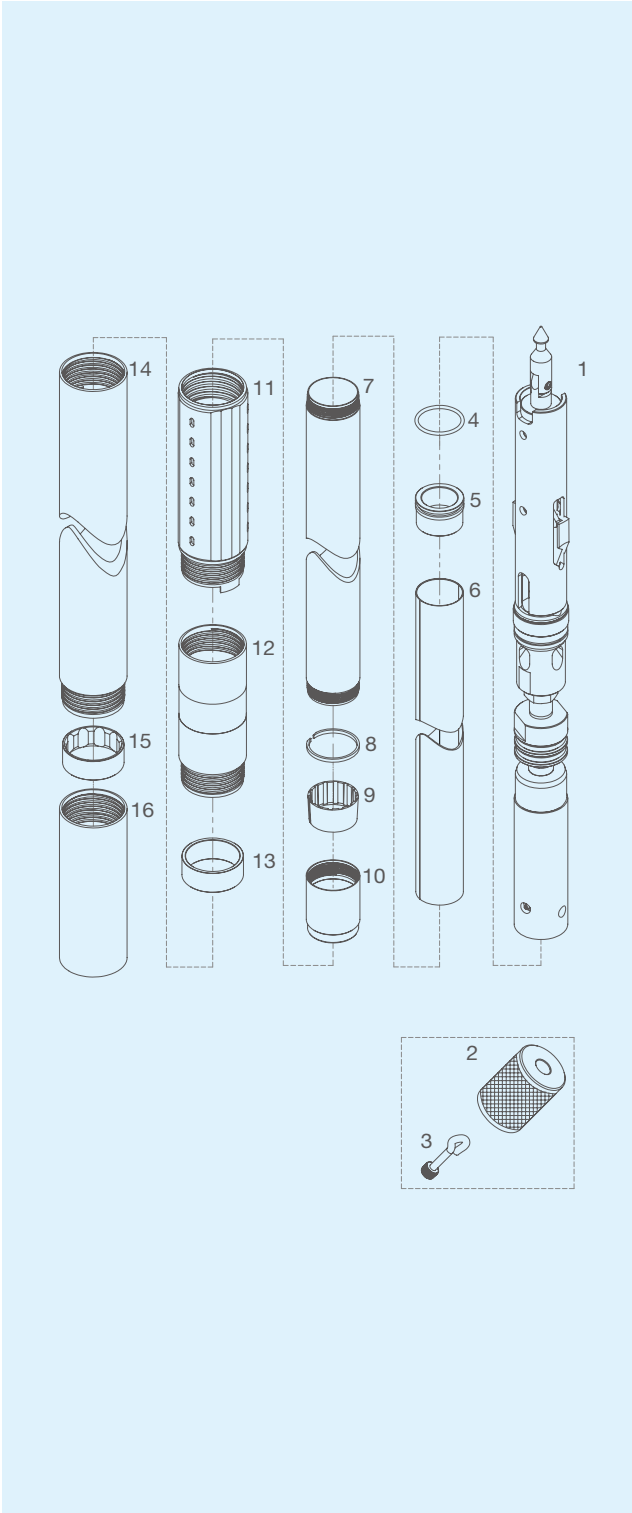
Size	Hole (mm)	Core (mm)
HQ3	95.6	61

Components:

- 1. Head Assembly
- 2. Pump-Out Adaptor
- 3. Piston Plug
- 4. O Ring
- 5. Core Ejection Piston
- 6. Split Tube
- 7. Inner Tube
- 8. Stop Ring
- 9. Core Lifter
- 10. Core Lifter Case
- 11. Locking Coupling
- 12. Adaptor Coupling
- 13. Landing Ring
- 14. Outer Tube
- 15. Inner Tube Stabilizer
- 16. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



PQ3 Wireline Triple Tube Core Barrel

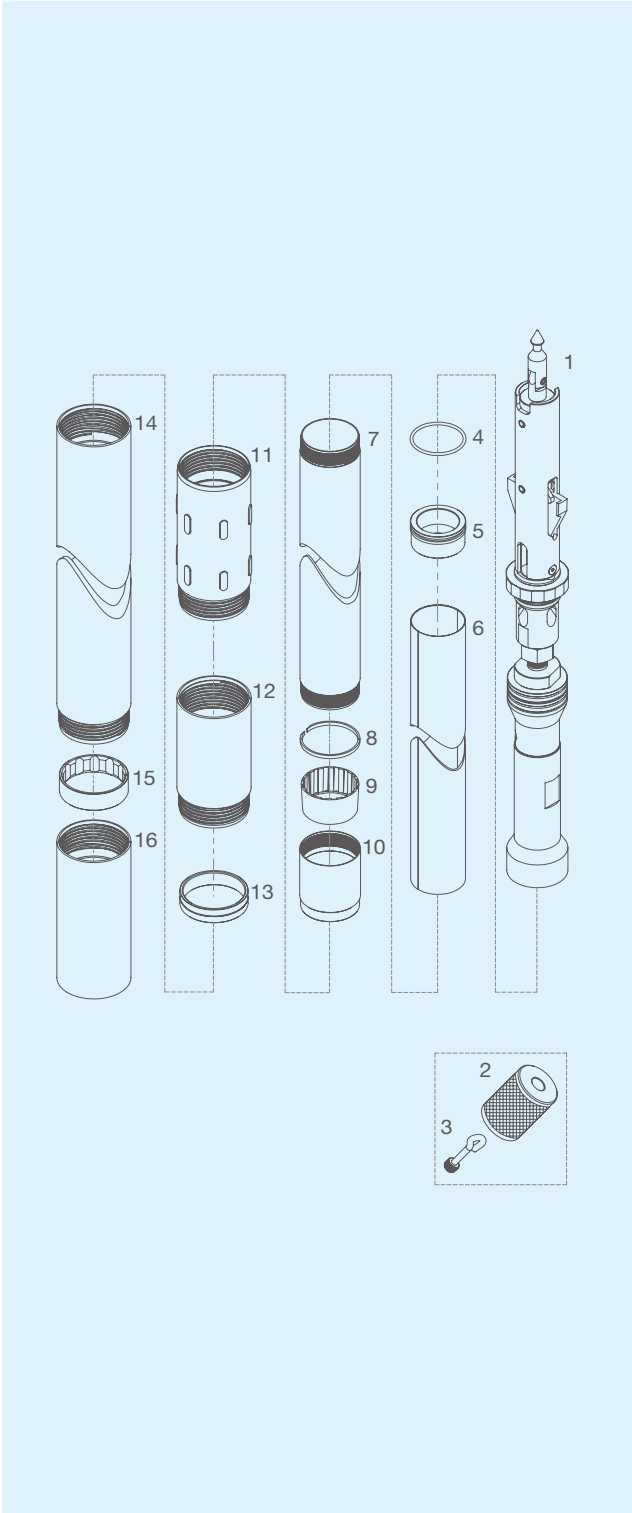
Size	Hole (mm)	Core (mm)
PQ3	122	83

Components:

- 1. Head Assembly
- 2. Pump-Out Adaptor
- 3. Piston Plug
- 4. O Ring
- 5. Core Ejection Piston
- 6. Split Tube
- 7. Inner Tube
- 8. Stop Ring
- 9. Core Lifter
- 10. Core Lifter Case
- 11. Locking Coupling
- 12. Adaptor Coupling
- 13. Landing Ring
- 14. Outer Tube
- 15. Inner Tube Stabilizer
- 16. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



Geobor S Triple Tube Core Barrel

Size	Hole (mm)	Core (mm)
Geobor S 146	146	102

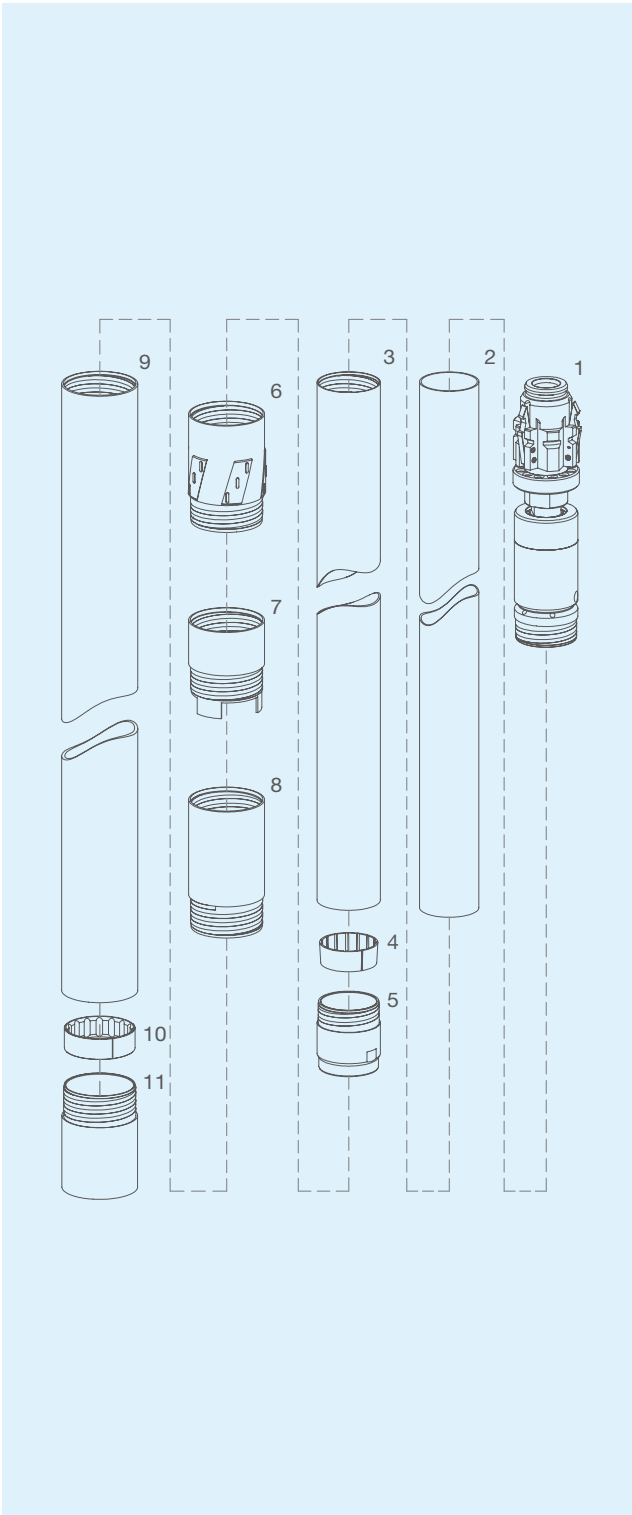
Components:

- 1. Head Assembly
- 2. Plastic Liner
- 3. Inner Tube
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube Stabilizer
- 7. Locking Coupling
- 8. Adaptor Coupling
- 9. Outer Tube
- 10. Inner Tube Stabilizer
- 11. Thread Protector

Note:

1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be order separately.

2. 1.5m and 3.0m length core barrels are available.



C Series Triple Tube Core Barrels

Size	Hole (mm)	Core (mm)	Head Thread
BMLC	59.3	35.2	As per need
NMLC	75.2	52	As per need
HMLC	98.7	63.5	As per need

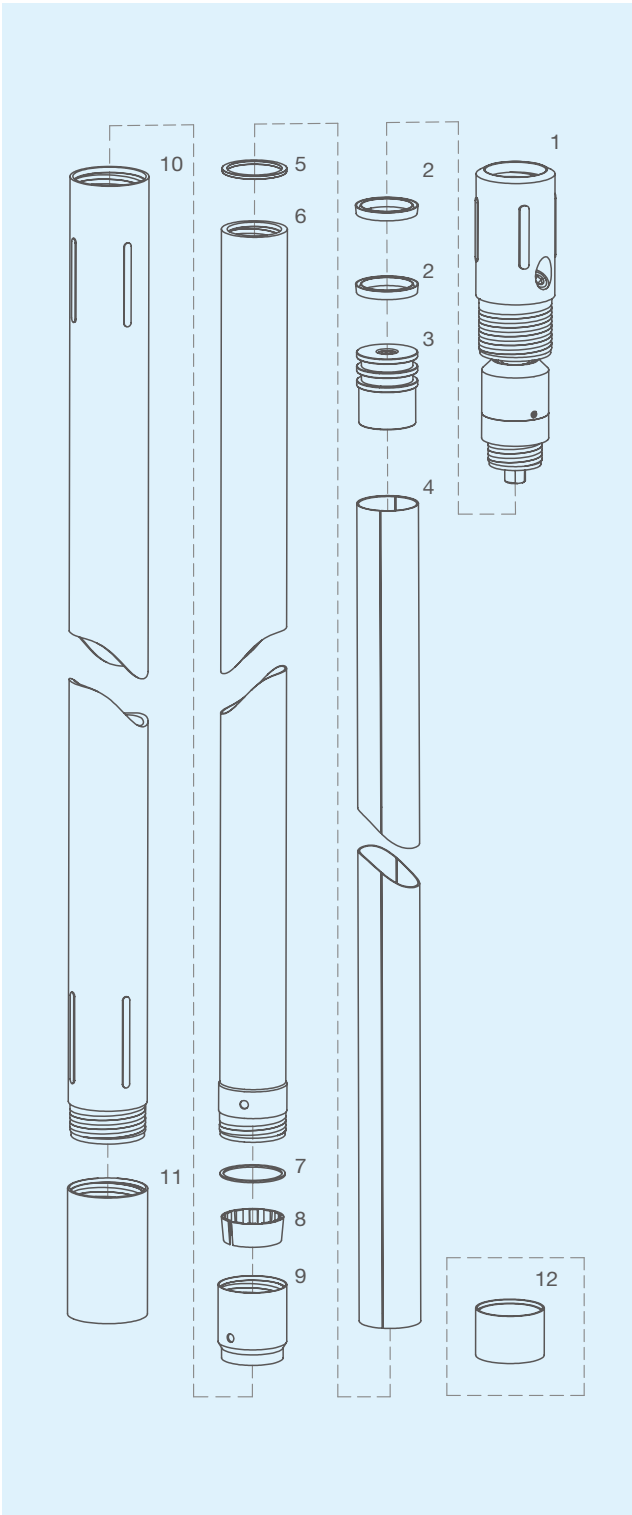
Components:

- 1. Head Assembly
- 2. O Ring
- 3. Piston
- 4. Split Tube
- 5. Space Washer
- 6. Inner Tube
- 7. Stop Ring
- 8. Core Lifter
- 9. Core Lifter Case
- 10. Outer Tube
- 11. Thread Protector
- 12. Guide Sleeve

Note:

1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.

2. 1.5m and 3.0m length core barrels are available.



C Series Triple Tube Core Barrels

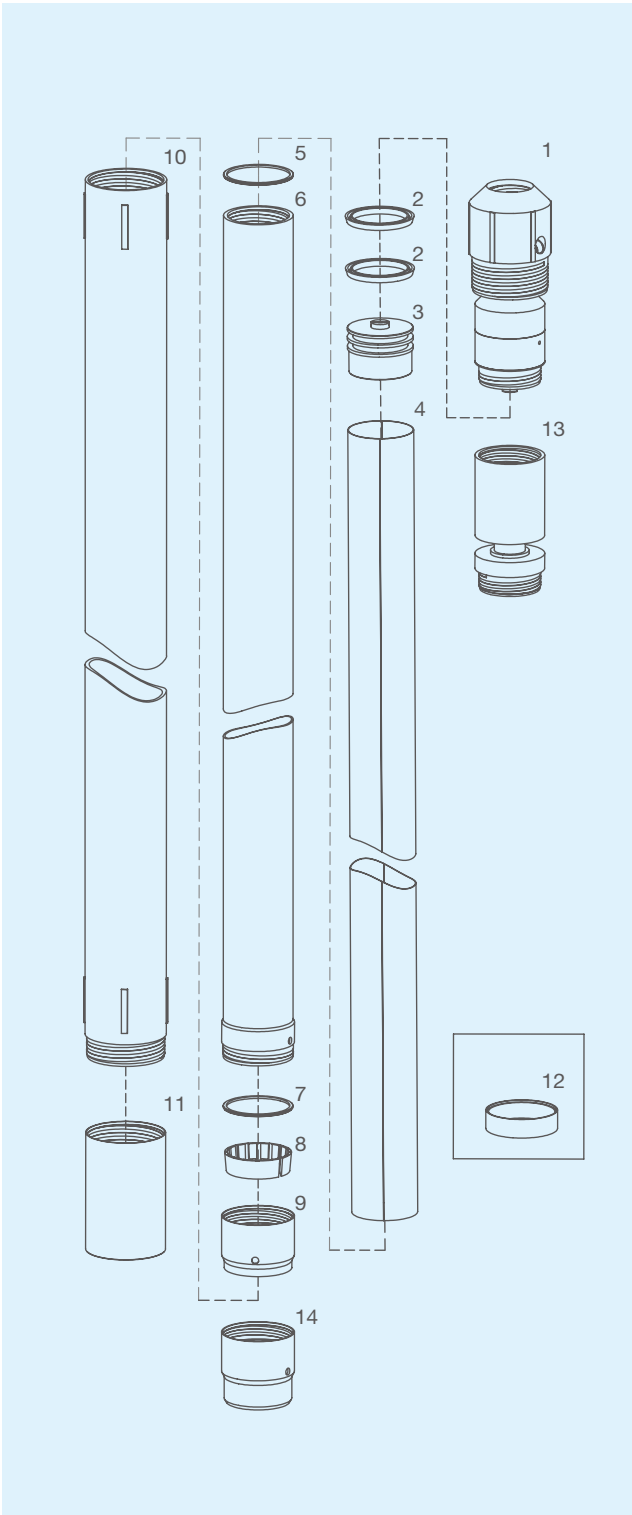
Size	Hole (mm)	Core (mm)	Head Thread
3C	110.5	76.2	As per need
4C	139.0	101.6	As per need
6C	196.0	146.0	As per need

Components:

- 1. Head Assembly
- 2. O Ring
- 3. Piston
- 4. Split Tube
- 5. Space Washer
- 6. Inner Tube
- 7. Stop Ring
- 8. Core Lifter
- 9. Core Lifter Case
- 10. Outer Tube
- 11. Thread Protector
- 12. Guide Sleeve
- 13. Spring Seat Assembly (Retractor type option)
- 14. Cutting Shoe (Retractor type option)

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



T2 Series Triple Tube Core Barrels

Size	Hole (mm)	Core (mm)	Head Thread
T2-76 CL*	76	58	As per need
T2-86 CL	86	68	As per need
T2-101 CL	101	80	As per need

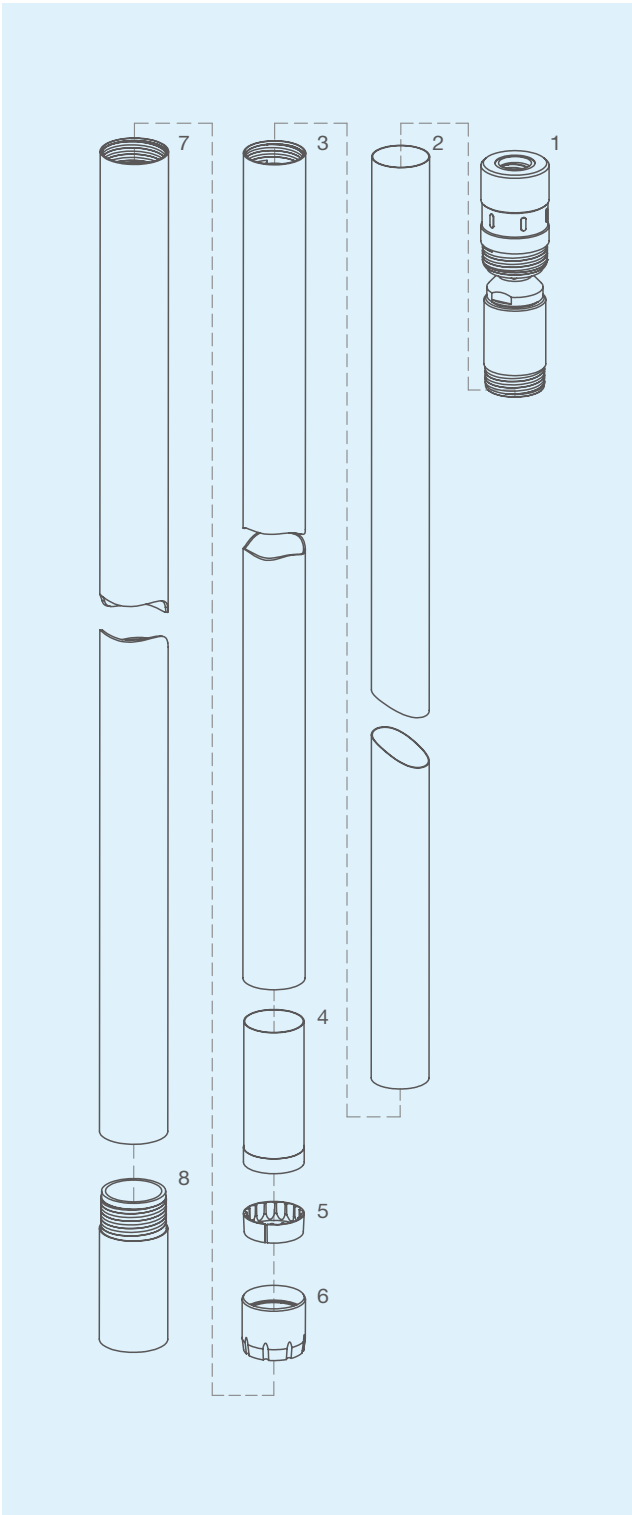
Components:

- 1. Head Assembly
- 2. Plastic Liner
- 3. Inner Tube
- 4. Extension Tube
- 5. Core Lifter
- 6. Core Lifter Case
- 7. Outer Tube
- 8. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.

*CL: Coreline



T6 Series Triple Tube Core Barrels

Size	Hole(mm)	Core (mm)	Head Thread
T6-86 CL*	86	64	As per need
T6-101 CL	101	76	As per need

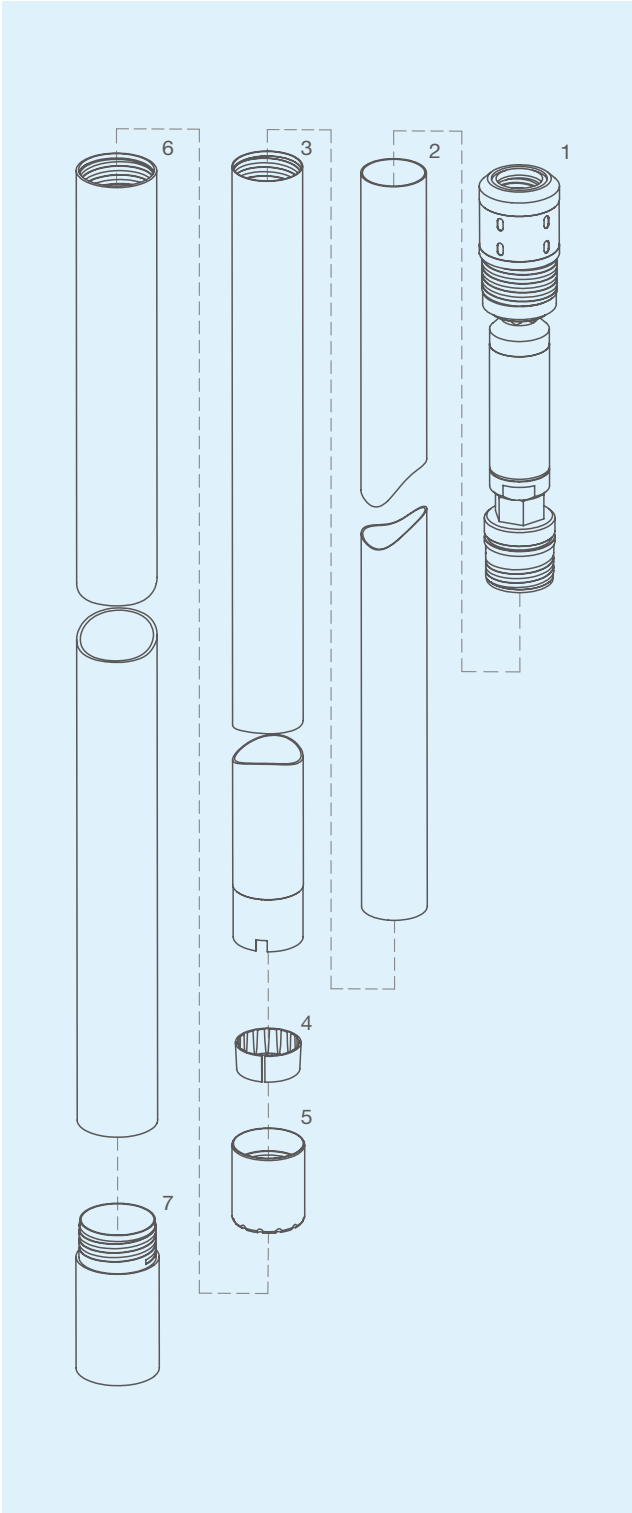
Components:

- 1. Head Assembly
- 2. Plastic Liner
- 3. Inner Tube
- 4. Core Lifter
- 5. Core Lifter Case
- 6. Outer Tube
- 7. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.

*CL: Coreline



T6 Series Triple Tube Core Barrels

Size	Hole (mm)	Core (mm)	Head Thread
T6-116 CL*	116	90	As per need
T6-131 CL	131	103.5	As per need
T6-146 CL	146	118	As per need

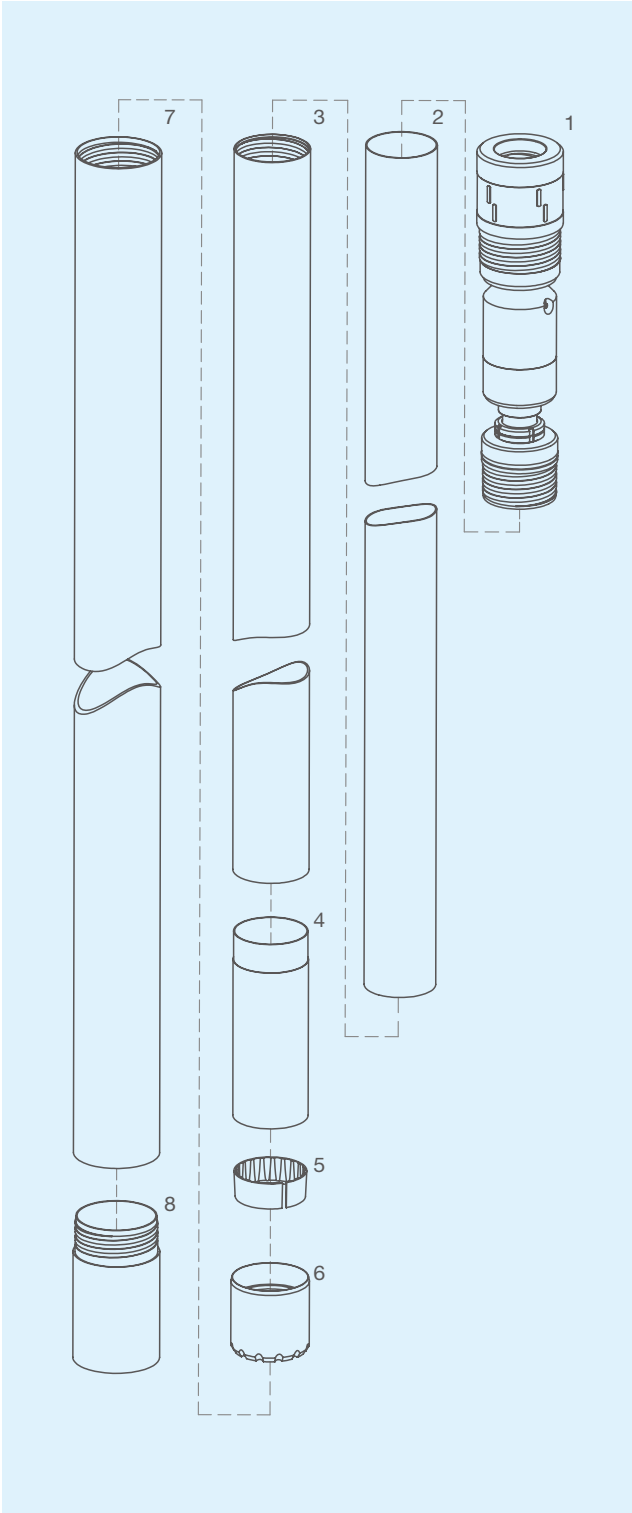
Components:

- 1. Head Assembly
- 2. Plastic Liner
- 3. Inner Tube
- 4. Extension Tube
- 5. Core Lifter
- 6. Core Lifter Case
- 7. Outer Tube
- 8. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.

*CL: Coreline



WF Series Triple Tube Core Barrels

Size	Hole (mm)	Core (mm)	Head Thread
HWF CL*	99.6	77.0	As per need
PWF CL	120.6	87.0	As per need
SWF CL	146.0	107.0	As per need
412F CL	107.0	72.8	As per need

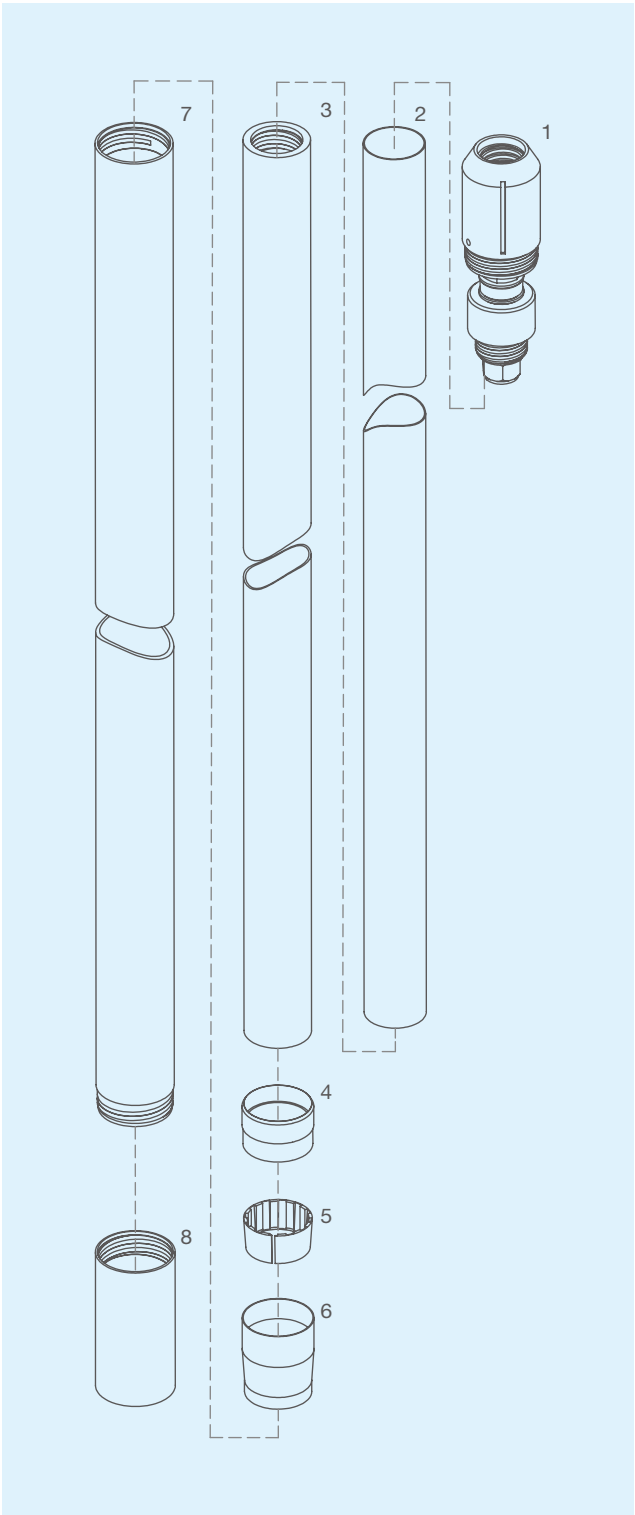
Components:

1. Head Assembly
2. Plastic Liner
3. Inner Tube
4. Ferrule
5. Core Lifter
6. Core Lifter Case
7. Outer Tube
8. Thread Protector

Note:

1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.
2. 1.5m and 3.0m length core barrels are available.

*CL: Coreline



B Series Single Tube Core Barrels

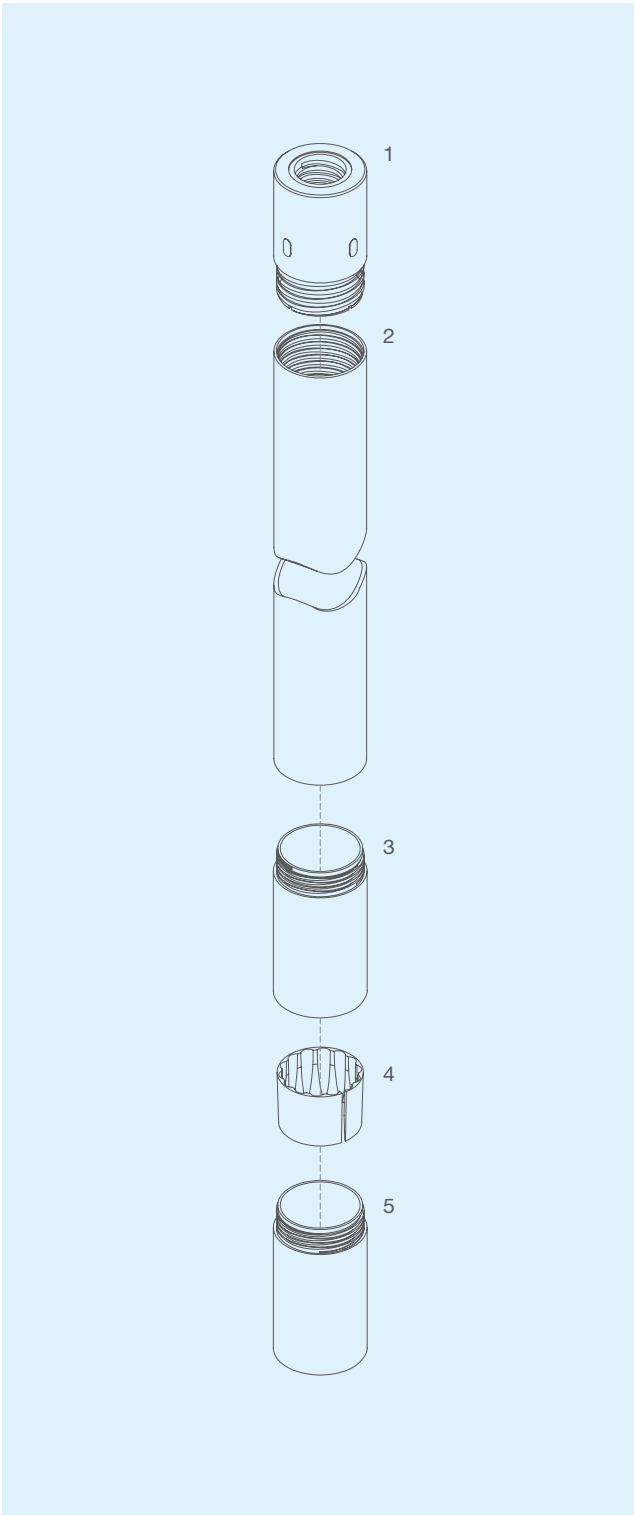
Size	Hole (mm)	Core (mm)	Head Thread
B-36	36	22	As per need
B-46	46	32	As per need
B-56	56	42	As per need
B-66	66	52	As per need
B-76	76	62	As per need
B-86	86	72	As per need
B-101	101	86.6	As per need
B-116	116	101.7	As per need
B-131	131	116.7	As per need
B-146	146	131.7	As per need

Components:

1. Single Tube Core Barrel Head
2. Tube
3. Blank Reaming Shell
4. Core Lifter
5. Thread Protector

Note:

1. A blank Reaming Shell is included in the core barrel, but Core Bit is not supplied with it and shall be ordered separately.
2. 1.5m and 3.0m length core barrels are available.



WG Series Single Tube Core Barrels

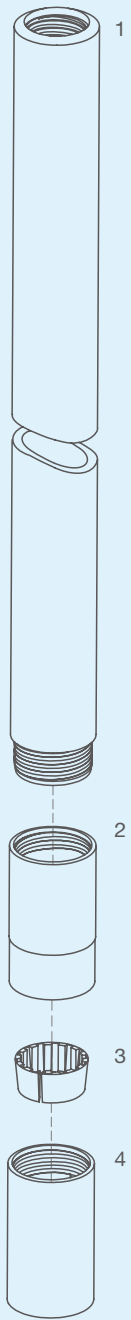
Size	Hole (mm)	Core (mm)	Head Thread
EWG	37.3	21.5	As per need
AWG	47.6	30	As per need
BWG	59.3	42	As per need
NWG	75.2	54.7	As per need
HWG	98.8	76.2	As per need

Components:

- 1. Tube
- 2. Blank Reaming Shell
- 3. Core Lifter
- 4. Thread Protector

Note:

- 1. A Blank Reaming Shell is included in the core barrel, but Core Bit is not supplied with it and shall be ordered separately.
- 2. 1.5m and 3.0m length core barrels are available.



Chinese Standard Single Tube Core Barrels

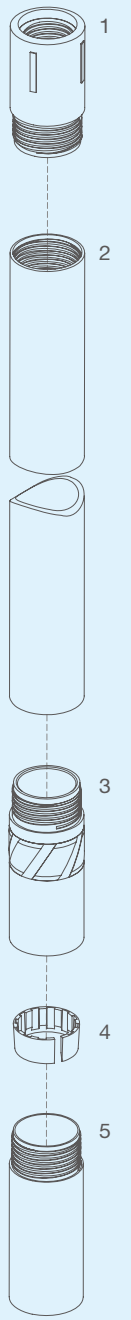
Size	Hole (mm)	Core (mm)	Head Thread
46	46.5	29	As per need
59	59.3	41.5	As per need
75	75.2	54.5	As per need
91	91.2	68	As per need
110	111.2	93	As per need
130	131.2	113	As per need
150	151.2	133	As per need
170	171	152	As per need
219	225	201	As per need

Components:

- 1. Single Tube Core Barrel Head
- 2. Outer Tube
- 3. Reaming Shell
- 4. Core Lifter
- 5. Thread Protector

Note:

- 1. Core Bit and Reaming Shell are not supplied with the core barrel, and shall be ordered separately.



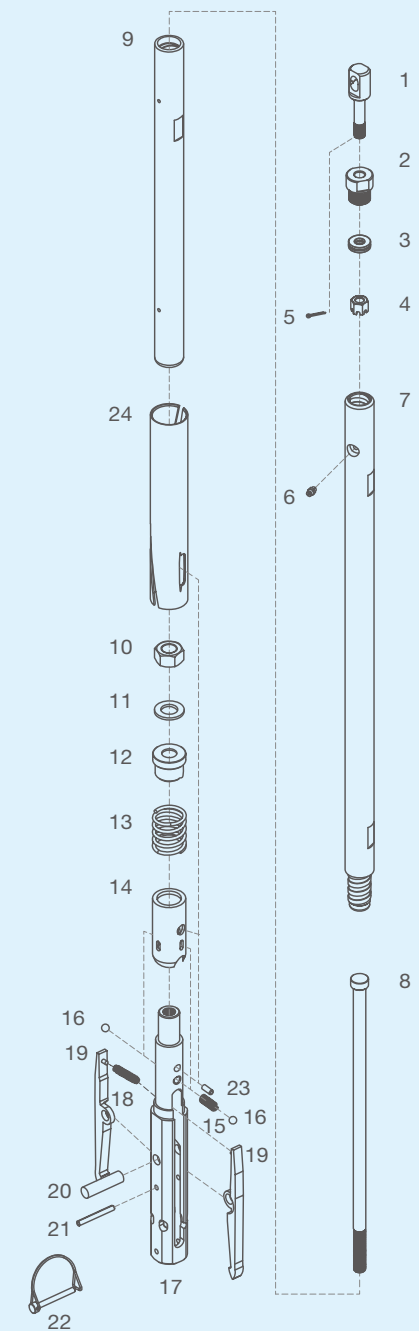
◆ Overshot is a necessary device in wireline drilling. It's dropped on a cable and directly couples onto and lifts up the inner tube assembly, eliminating the need to couple and uncouple the rod string each time the core is retrieved.



BQ Overshot

Components:

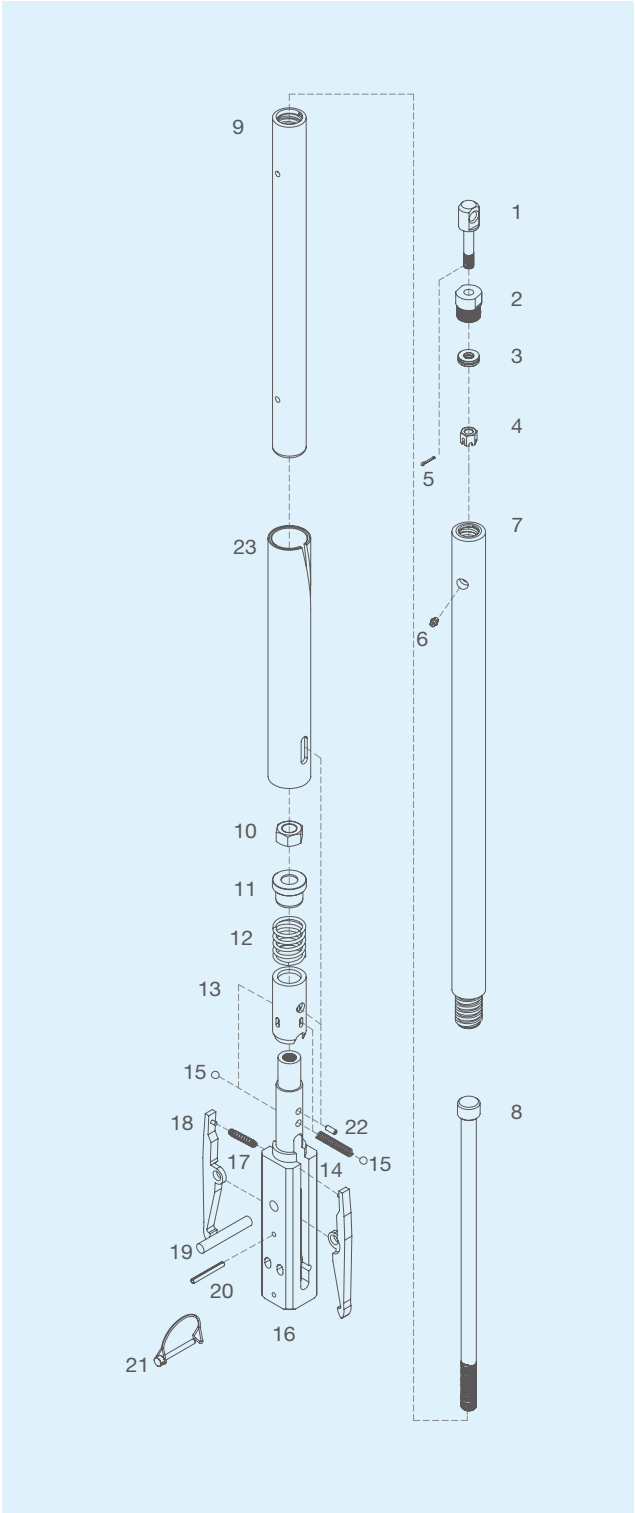
1. Eye Bolt
2. Cable Swivel Collar
3. Thrust Bearing
4. Castle Nut
5. Cotter Pin
6. Grease Fitting
7. Cable Swivel Body
8. Jar Staff
9. Jar Tube
10. Hex Nut 3/4 UNC
11. Washer, Nord-lock
12. Cap, Ezy Lock O / Shot
13. Spring, Ezy Lock O / Shot
14. Sleeve, Ezy Lock O / Shot
15. Compression Spring
16. Ball 11/32"
17. Ezy Lock Overshot Head
18. Compression Spring
19. Lifting Dog
20. Plain Pin 1/2"x2 1/8"
21. Spring Pin 1/4"x2"
22. Locking Pin
23. Set Screw, 3/8 UNFx3/4 Nyloc
24. Locking Sleeve



NQ Overshot

Components:

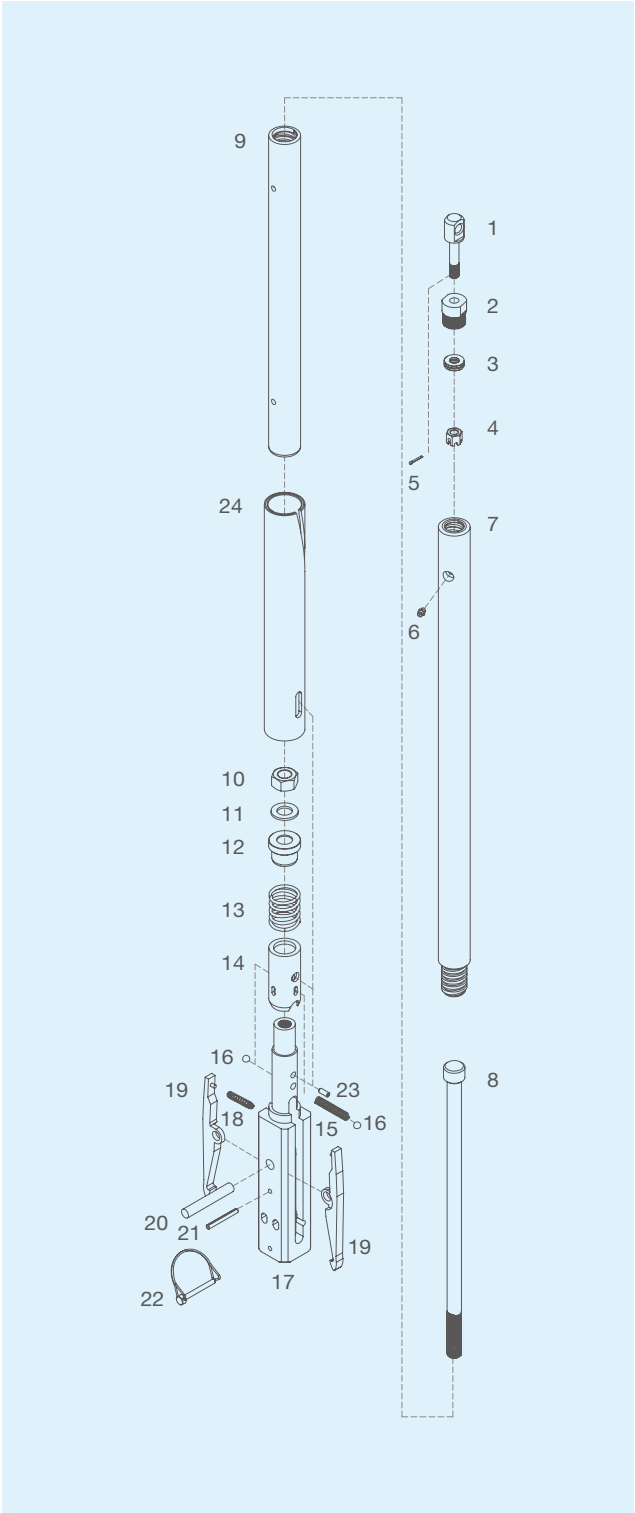
- 1. Eye Bolt
- 2. Cable Swivel Collar
- 3. Thrust Bearing
- 4. Castle Nut
- 5. Cotter Pin
- 6. Grease Fitting
- 7. Cable Swivel Body
- 8. Jar Staff
- 9. Jar Tube
- 10. Hex Nut 9 / 16 UNC
- 11. Cap, Ezy Lock O / Shot
- 12. Spring, Ezy Lock O / Shot
- 13. Sleeve, Ezy Lock O / Shot
- 14. Compression Spring
- 15. Ball 11/32"
- 16. Ezy Lock Overshot Head
- 17. Compression Spring
- 18. Lifting Dog
- 19. Plain Pin 1/2"x1 15/16"
- 20. Spring Pin 1/4"x1 3/4"
- 21. Locking Pin
- 22. Set Screw, 3/8 UNFx3/4 Nyloc
- 23. Locking Sleeve



HQ Overshot

Components:

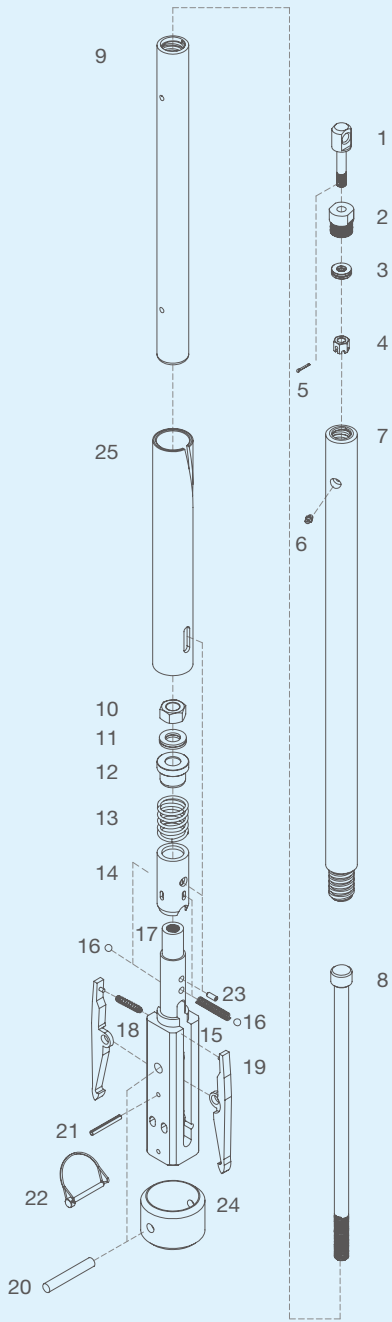
- 1. Eye Bolt
- 2. Cable Swivel Collar
- 3. Thrust Bearing
- 4. Castle Nut
- 5. Cotter Pin
- 6. Grease Fitting
- 7. Cable Swivel Body
- 8. Jar Staff
- 9. Jar Tube
- 10. Hex Nut 3/4 UNC
- 11. Washer, Nord-lock
- 12. Cap, Ezy Lock O / Shot
- 13. Spring, Ezy Lock O / Shot
- 14. Sleeve, Ezy Lock O / Shot
- 15. Compression Spring
- 16. Ball 11/32"
- 17. Ezy Lock Overshot Head
- 18. Compression Spring
- 19. Lifting Dog
- 20. Plain Pin 1/2"x2 1/8"
- 21. Spring Pin 1/4"x2"
- 22. Locking Pin
- 23. Set Screw, 3/8 UNFx3/4 Nyloc
- 24. Locking Sleeve



PQ Overshot

Components:

- 1. Eye Bolt
- 2. Cable Swivel Collar
- 3. Thrust Bearing
- 4. Castle Nut
- 5. Cotter Pin
- 6. Grease Fitting
- 7. Cable Swivel Body
- 8. Jar Staff
- 9. Jar Tube
- 10. Hex Nut 3/4 UNC
- 11. Washer, Nord-lock
- 12. Cap, Ezy Lock O / Shot
- 13. Spring, Ezy Lock O / Shot
- 14. Sleeve, Ezy Lock O / Shot
- 15. Compression Spring
- 16. Ball 11/32"
- 17. Ezy Lock Overshot Head
- 18. Compression Spring
- 19. Lifting Dog
- 20. Plain Pin 1/2"x3 1/4"
- 21. Spring Pin 1/4"x2"
- 22. Locking Pin
- 23. Set Screw, 3/8 UNFx3/4 Nyloc
- 24. Sleeve
- 25. Locking Sleeve



Geobor S Overshot

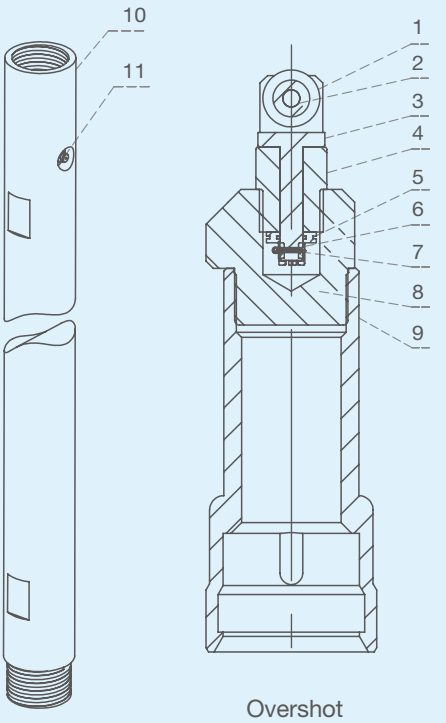
Components:

- 1. Pulley
- 2. Spring Pin
- 3. Lift Plug
- 4. Plug Coupling
- 5. Thrust Bearing
- 6. Castle Nut
- 7. Cotter Pin
- 8. Stabilizer Body
- 9. Catch Body
- 10. Weighting Rod
- 11. Grease Fitting

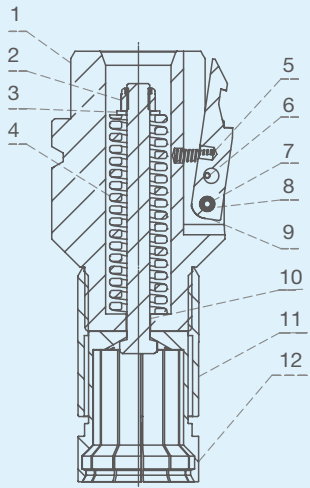
Dry Hole Device

Components:

- 1. Latch Device
- 2. Lock Nut
- 3. Washer
- 4. Compression Spring
- 5. Latch Compression Spring
- 6. Spacing Spring Pin
- 7. Spring Pin
- 8. Spring Pin Sleeve
- 9. Latch
- 10. Bolt
- 11. Adjust Sleeve
- 12. Release Base



Overshot



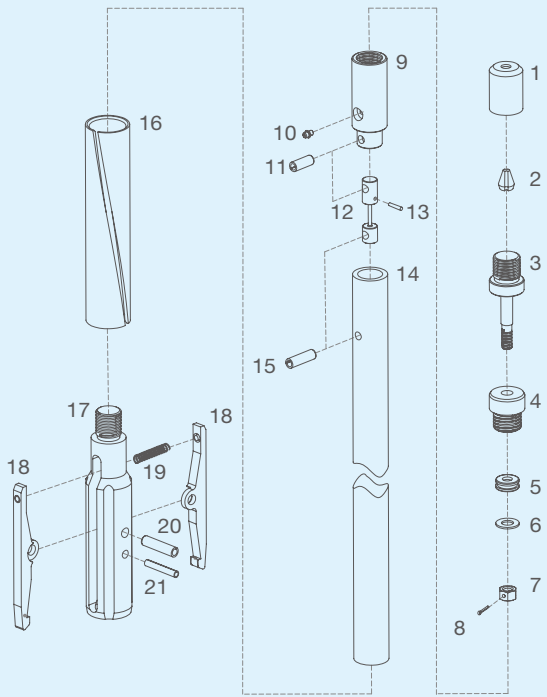
Dry Hole Device

Chinese Standard Wireline Overshot

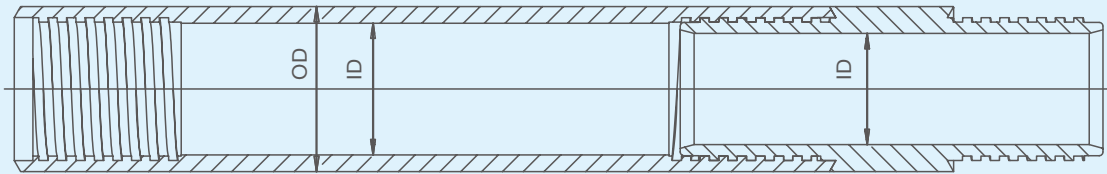
Size Available: 59, 75, 95mm

Components:

- 1. Eye Bolt
- 2. Cable Plug
- 3. Staff
- 4. Cable Swivel Collar
- 5. Thrust Bearing
- 6. Washer
- 7. Hex Nut
- 8. Cotter Pin
- 9. Adaptor
- 10. Grease Fitting
- 11. Spring Pin 10mm×29mm
- 12. Plain Pin
- 13. Taper Pin
- 14. Cable Swivel Body
- 15. Spring Pin 10mm×40mm
- 16. Locking Sleeve
- 17. Lifting Dog Body
- 18. Lifting Dog
- 19. Compression Spring
- 20. Spring Pin 12mm×55mm
- 21. Spring Pin 10mm×55mm

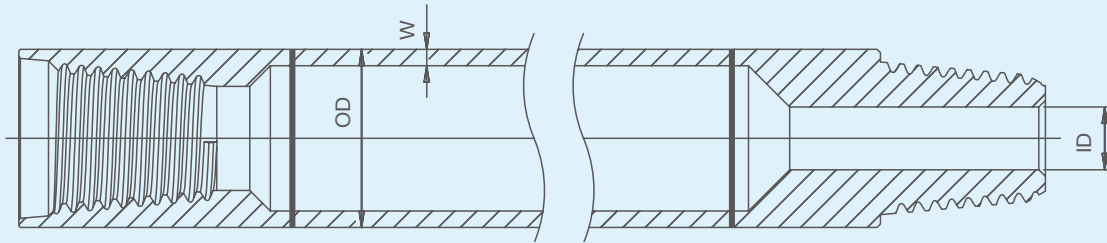


"W" Design Drill Rod



Size	OD (inch / mm)	ID (inch / mm)	Coupling ID (inch / mm)	TPI
AW	1.72 / 43.7	1.21 / 30.7	0.63 / 16	3
BW	2.13 / 54.0	1.50 / 38.0	0.75 / 19	3
NW	2.63 / 66.8	2.01 / 51.1	1.38 / 35	3
HW	3.50 / 88.9	2.80 / 71.0	2.36 / 60	3

"WJ" / "WY" Design Drill Rod

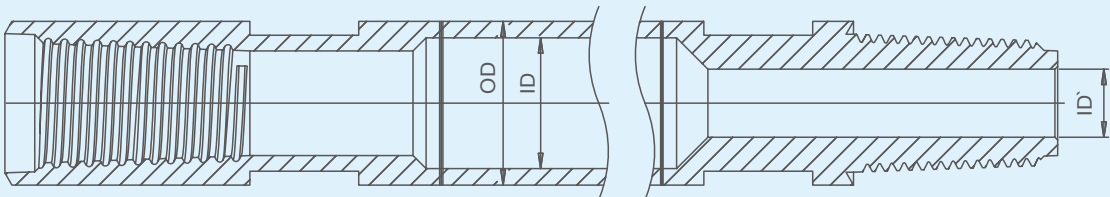


Size	OD (inch / mm)	W (inch / mm)	ID (mm)	TPI
AWJ / AWY	1.72 / 43.7	0.26 / 6.5	16	5
BWJ / BWY	2.13 / 54.0	0.20 / 5.0	19	5
NWJ / NWY	2.63 / 66.8	0.20 / 5.0	30	4
NWJ70	2.76 / 70.0	0.19 / 4.85	27	4

Metric System Drill Rod



Size	OD (mm)	ID (mm)	Coupling ID (mm)	TPI
CR42	42.0	29.0	22	4
CR50	50.0	37.0	22	3



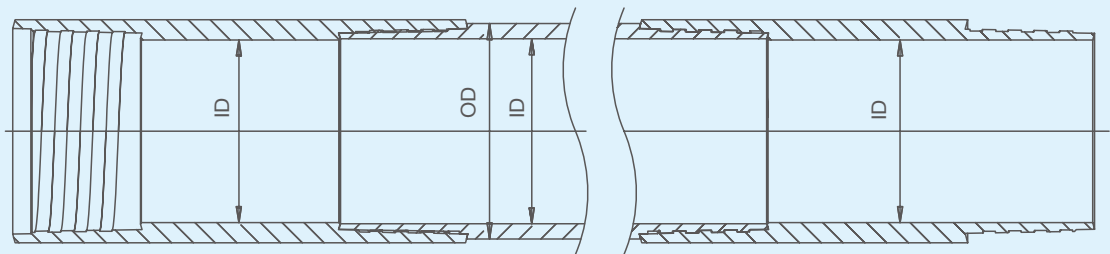
Size	OD (mm)	ID (mm)	Thread Hole ID (mm)	TPI
CR60	60.2	48	25	4

Wireline Drill Rod Of International Standard



Size	OD (inch / mm)	ID (inch / mm)	TPI
AQ	1.752 / 44.5	1.378 / 35	4
BQ	2.189 / 55.6	1.815 / 46.1	3
NQ	2.752 / 69.9	2.370 / 60.2	3
HQ	3.5 / 88.9	3.063 / 77.8	3
PQ / PHD	4.5 / 114.3	4.000 / 101.6	3
Geobor S / SK6L 146	5.5 / 139.7	4.9409 / 125.5	3

Wireline Drill Rod Of Chinese Standard



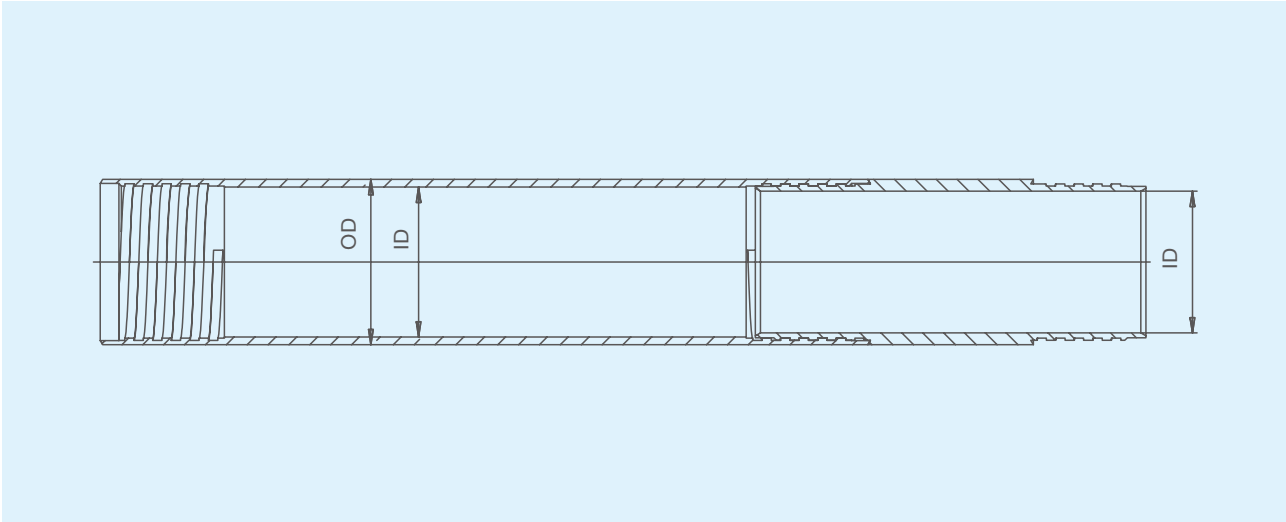
Size	OD (mm)	ID (mm)	Coupling ID (mm)
59	55.5	46	45
75	71	61	60.2
95	89	78	77.5

Metric Series Casing



Size	OD(mm)	ID(mm)
46	44.15	37.15
56	54.15	47.15
66	64.25	57.25
76	74.25	67.25
86	84.25	77.25
101	98.00	88.30
116	113.00	103.30
131	128.00	118.30
146	143.00	133.30

Flush-Coupled X Series Casing



Size	OD (min.)		ID (min.)		Coupling ID (min.)	
	inch	mm	inch	mm	inch	mm
NX	3.500	88.9	3.172	80.57	3.000	76.2
HX	4.500	114.3	4.110	104.39	3.937	100.0
PX	5.459	138.66	4.933	125.3	4.865	123.57

Flush-Jointed W Series Casing



OD (mm)	OD (min.)		ID (min.)	
	inch	mm	inch	mm
BW	2.875	73.03	2.375	60.33
NW	3.500	88.90	3.000	76.2
HW	4.500	114.30	3.985	101.22
PW	5.459	138.66	4.865	123.57
SW	6.575	167.00	5.953	151.21

Flush-Jointed Waterwell Casing (B.S.879)



Size	OD (min.)		ID (min.)	
	inch	mm	inch	mm
4"	4.500	114.30	3.870	98.30
5"	5.500	139.70	4.870	123.70
6"	6.626	168.30	5.878	149.30
7"	7.626	193.70	6.878	174.70
8"	8.626	219.10	7.878	200.10

◆ Casing length: generally supplied with length 3.0m, 1.5m & 0.75m.

◆ Casing length: generally supplied with length 3.0m, 1.5m & 0.75m.

Standard Penetration Test (SPT) Equipment

◆ The Automatic Trip Hammer is manufactured to comply with the Standard Penetration (SPT) to BS 1377: Part 9: 1990 SPT Drive Rods and a Split Tube Sampler are connected to the base of the anvil, and driven into the ground by the falling weight.

Shelby Tube Sampler

◆ Thin-Walled Shelby Tube Sampler consists of drive head and sample tube. The drive head contains a non-return valve to allow free exit of water or air above the sample. The sample tube is attached to the head by means of screws. Thin-Walled Shelby Tube Sampler is designed for taking samples in soft and firm cohesive soils. The area ratio is less than 10% and therefore gives less disturbed samples.

U100 Sampling System

◆ This equipment is designed for taking 100 mm diameter undisturbed samples in clay and other soft formations. The sample tubes are 18" long and are driven into the ground by a sliding hammer with drive head attached, The drive head contains a ball valve to allow air to be released from the upper part of the sample tube as it is being driven into the ground.

Cable Percussion Tools

In sampling by cable percussion drilling, appropriate percussion sampling, drilling and bailing tools are suspended on a cable, which is raised and free lowered by a winch so allowing the mass of the equipment to drive the tools into the soil.

Mazier Core Barrel

◆ The automatic Mazier core barrel is designed for obtaining undisturbed core samples in very soft soils, such as sands, silts and marls. A PVC coreliner is used inside the inner tube to retain the core, and a "basket" catcher can be used to prevent soft materials from slipping out.

Denison Core Barrel

◆ Denison Soil Core barrel is one of the most satisfactory sampler for obtaining nearly undisturbed soil samples of highly compacted, hard, stiff, uncemented or slightly cemented material. Samples of cohesive soils are obtained with the least amount of disturbance.

Automatic Trip Hammer

◆ The Automatic Trip Hammer is manufactured to comply with the Standard Penetration test (SPT) to BS 1377:Part 9:1990. SPT Drive Rods and a Split Tube Sampler are connected to base of the anvil, and driven into the ground by the falling weight.

◆ The Automatic Trip Hammer comprises a weight of 63.5 KGS complete with pick-up and self-tripping mechanism that ensures the weight has a free-fall of exactly 760mm. The inner shaft acts as a guide that permits the weight to drop with minimum resistance and ensures that the weight strikes the anvil squarely.

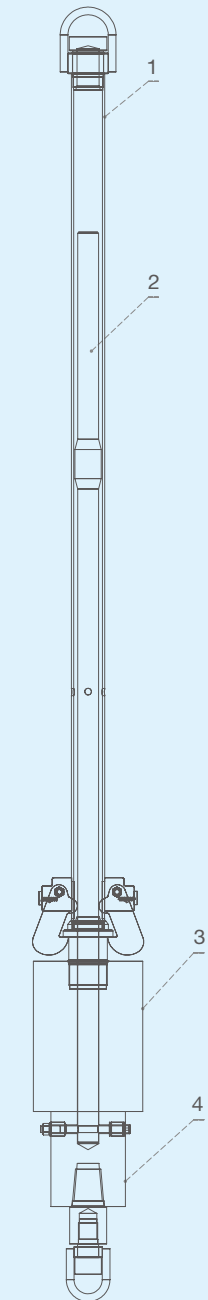
◆ The Anvil thread usually be processed with a 1-1/2" B.S. Whitworth to fit our standard SPT Rods.

◆ Adaptors to other types of drill rods can be supplied on request.

◆ The overall length of the hammer is 1.8m. The total weight of the hammer is 107KGS.

Components:

1. Outer Tube Assembly C / W Pawls
2. Inner Guide Shaft
3. Drop Weight
4. Anvil



Split Tube Sampler (SPT)

Components:

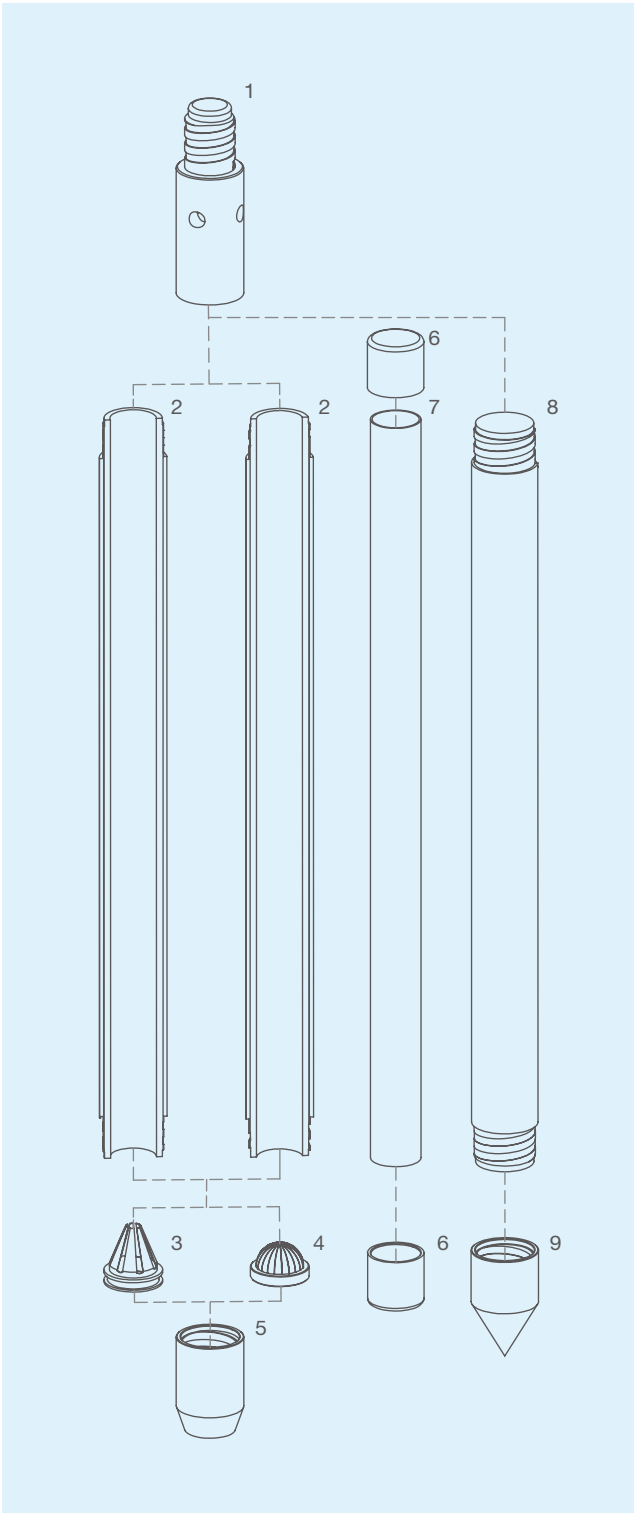
(Items 1, 2, 5: SPT Split Tube Sampler Assembly)

1. Ball Valve Adaptor
2. Split Tube
3. Basket Retainer-Steel (Option)
4. Basket Retainer-Plastic (Option)
5. Cutting Shoe
6. Plastic Liner Caps (Option)
7. Plastic Liner (Option)
8. SPT Solid Rod
9. SPT Nose Cone

◆ SPT Split Tube Sampler is designed for carrying out the Standard Penetration Test (SPT) to BS 1377: Part 9: 1990 and ASTM standards. The Top Ball Valve Adaptor, pair of Split Spoons, and open SPT Shoe compose a complete set of Split Tube Sampler. A Basket Retainer made of steel also is available as an option for the sampler. The Ball Valve Adaptor prevents samples from being washed out of the sampler when it is withdrawn from the borehole. A 60 degree nose cone or long solid rod with 60 degree point is available for carrying out SPT (c) tests in gravel and loose material. The screw connection on the top adaptor depends on the type of drill rods being used to drive the sampler. Most frequently used rods are 1 1/2" B.S. Whitworth, NWY, BW, and AW.

◆ The BS standard Split Tube Sampler is 2" (50.8 mm) OD x 1 3/8" (34.9 mm) ID x 18" (457 mm) / 24" (610 mm) long. And ASTM Standard Split Tube Sampler is 2" (50.8 mm) OD x 1 4/8" (38.1 mm) ID x 18" (457 mm) / 24" (610 mm) length.

◆ 3" SPT Sampler is also available that is of OD 76.2mm and ID 63.5mm.



Split Tube Sampler Tuflok (SPT)

For heavy driving conditions, the heavy duty "Tuflok" design is available.

Components:

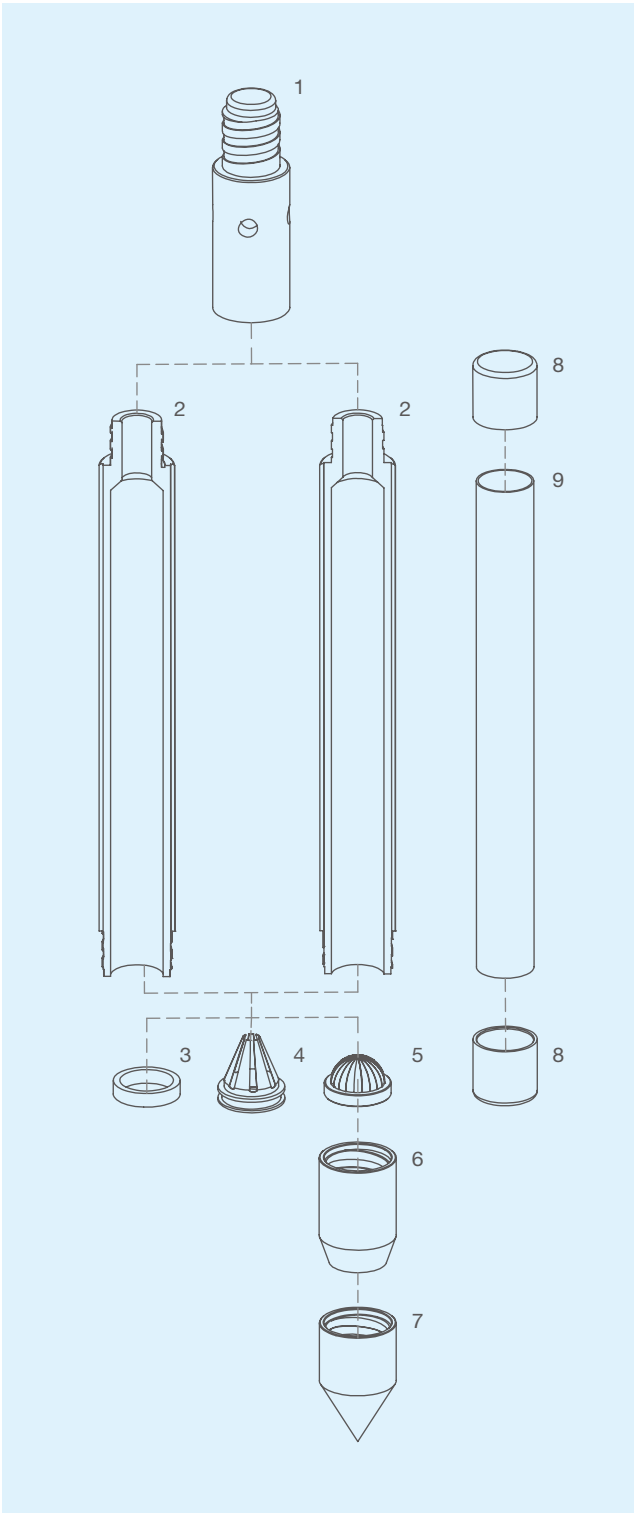
(Items 1, 2, 3, 6: SPT tube sampler Tuflok Assembly)

1. Ball Valve Adaptor
2. Split Tube Tuflok
3. Spacer
4. Basket Retainer- Steel (Option)
5. Basket Retainer-Plastic (Option)
6. Cutting shoe
7. Nose Cone (Option)
8. Plastic Liner Cap (Option)
9. Plastic Liner (Option)

Remark:

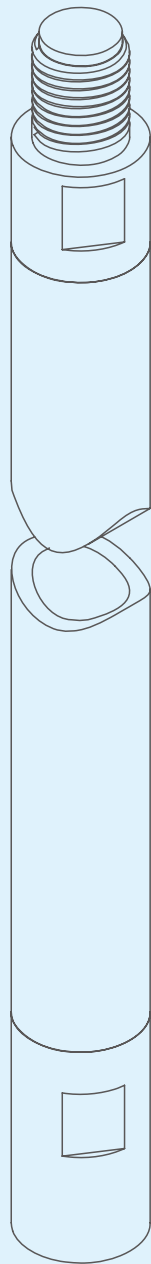
◆ The junction of Tuflok type between ball valve adaptor and split tubes is thicker than conventional type, in order to bear greater impact force.

◆ 2" and 3" sampler are available.



SPT Drive Rod

- ◆ SPT Drive Rods are manufactured to connect with the SPT Split Tube Sampler and comply with the BS 1377: Part 9: 1990.
- ◆ The rod O.D. is 54 mm with solid 1 1/2" B.S. Whitworth male and female tool joints on each end. The tool joints are friction welded to the Rods and have a pair of spanner flats to facilitate handling.
- ◆ The rod weighs only 8.8kgs per meter but is both stronger and stiffer. It has four kinds of standard lengths, i.e. 3.0m, 1.5m, 1.0m and 0.75 m.

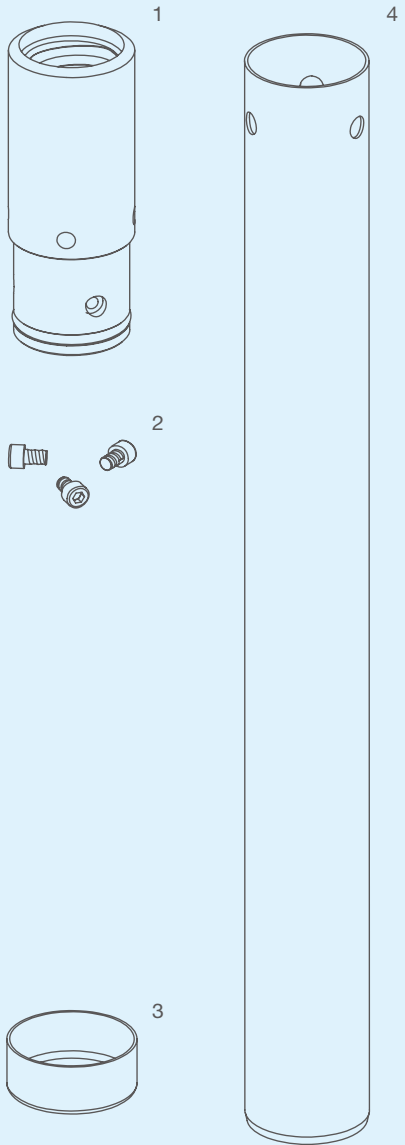


Shelby Tube Sampler

- ◆ Thin-Walled Shelby Tube Sampler consists of drive head and sample tube. The drive head contains a non-return valve to allow free exit of water or air above the sample. The sample tube is attached to the head by means of screws.
- ◆ Thin-walled Shelby tube samplers are designed for taking samples in soft and firm cohesive soils. The area ratio is less than 10% and therefore gives less disturbed samples.

Size	OD (mm)	ID (mm)
2"	54	51
2.5"	67	63.5
3"	76.1	72.1
4"	101	99

- Components:**
- 1. Head Assembly
 - 2. Screws
 - 3. Cap
 - 4. Shelby Tube



U100 Sampling System

- ◆ This equipment is designed for taking 100 mm diameter undisturbed samples in clay and other soft formations. The sample tubes are 18" long and are driven into the ground by a sliding hammer with drive head attached, The drive head contains a ball valve to allow air to be released from the upper part of the sample tube as it is being driven into the ground.
- ◆ Two types of sampling systems are currently manufactured.
- ◆ U100 Standard System consists of drive head, sample tube, core catcher and cutting shoe.
- ◆ U100 Plastic Liner System utilizes plastic liner to take the sample. End caps are supplied for plastic liners.

U100 Standard System:

OD (Max) 118.6mm
ID (Min) 104.4mm

Components:

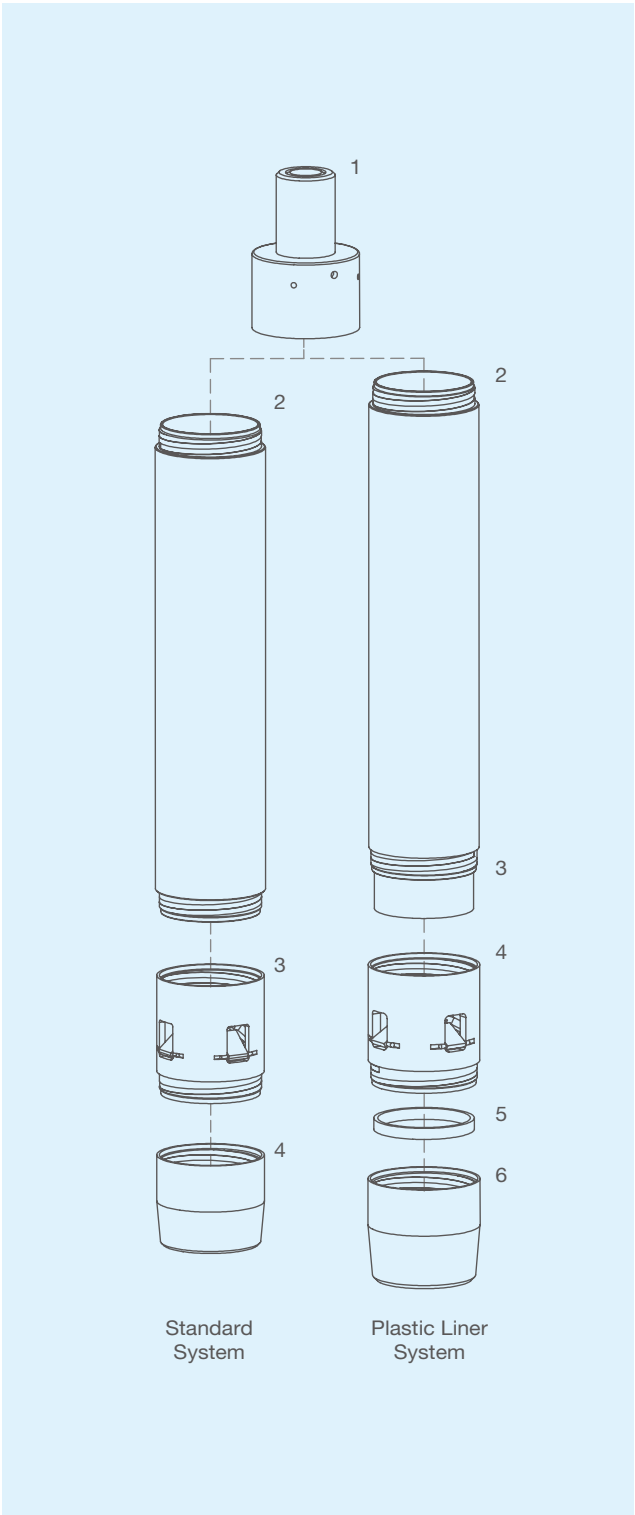
1. Drive Head
2. Sample Tube
3. Core Catcher
4. Cutting Shoe

U100 Plastic Liner System:

OD (Max) 123.8mm
ID (Min) 101.6mm

Components:

1. Drive Head
2. Sample Tube
3. Plastic Liner
4. Core Catcher
5. Spacer Ring
6. Cutting Shoe



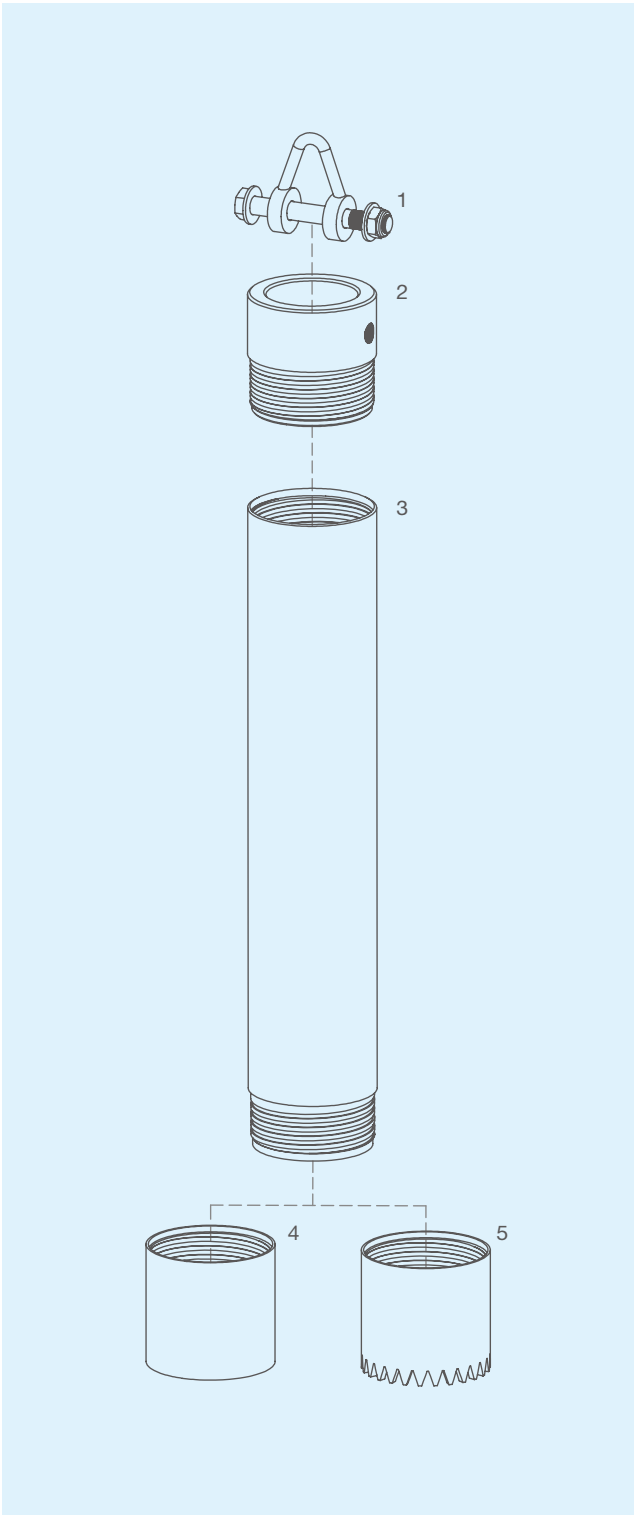
Steel Flush-Jointed Waterwell Casing

- ◆ Strong Steel Flush-Jointed casing is manufactured as per B.S. 879. The tube material is hot rolling seamless steel.
- ◆ A casing Drive Head with cross hole can be used in connected with casing .
- ◆ A casing shoe may be jointed to the lower end of the casing. Serrated cutting edge, T.C insert cutting edge and quenching cutting edge are available.
- ◆ A Casing Hanger connected with casing drive head through Clevis Pin.

Nominal Size	Tube OD	Tube ID	Thread
(inches)	(inches)	(inches)	TPI
4"	4 1/2"	3 7/8"	4
5"	5 1/2"	4 7/8"	4
6"	6 5/8"	5 7/8"	4
8"	8 5/8"	7 7/8"	4

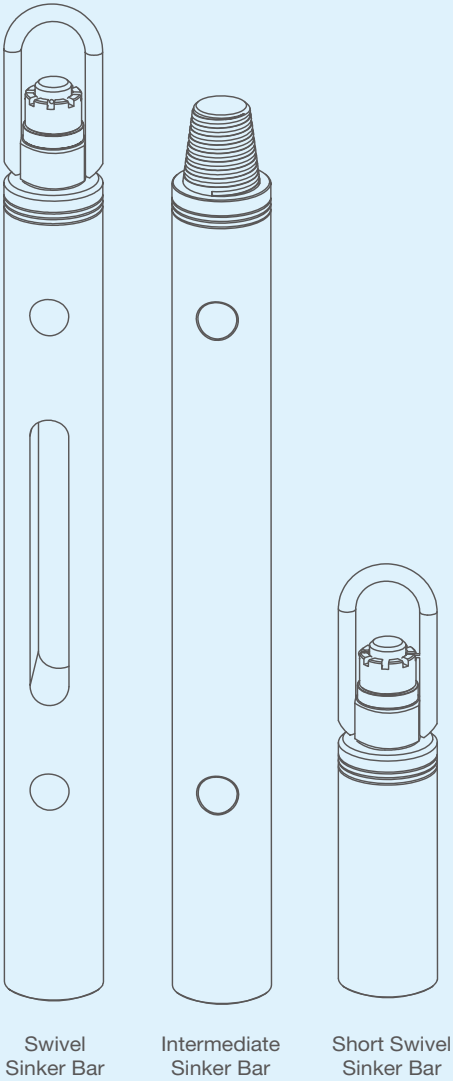
Components:

1. Clevis pin
2. Casing Drive Head
3. Casing
4. Casing shoe
5. Casing shoe serrated (option)



Sinker Bar

- ◆ The Sinker Bar is used to add weight to drill string and increase the penetration of cable percussion tools.
- ◆ Swivel Sinker Bar fitted the shell, clay cutter and rod which it is required to add.
- ◆ Intermediate Sinker Bar used to add more weight to the drill string.
- ◆ A short swivel Sinker Bar is available for starting the borehole and permits the tools string to be rotated easily.
- ◆ A Surging Bar is used for connecting sinker bar and casing.



Claycutter and Shell

- ◆ Claycutter is used as a drop tool, provides a rapid method of penetrating clay and soils. Complete claycutter includes shoe (Items 3 and 4) and ring (Item 2).
- ◆ Shell is used for drilling soft formations, such as sands, gravel and for cleaning the hole. Complete shell includes shoe (Item 3) and steel clack valve (Item 2).

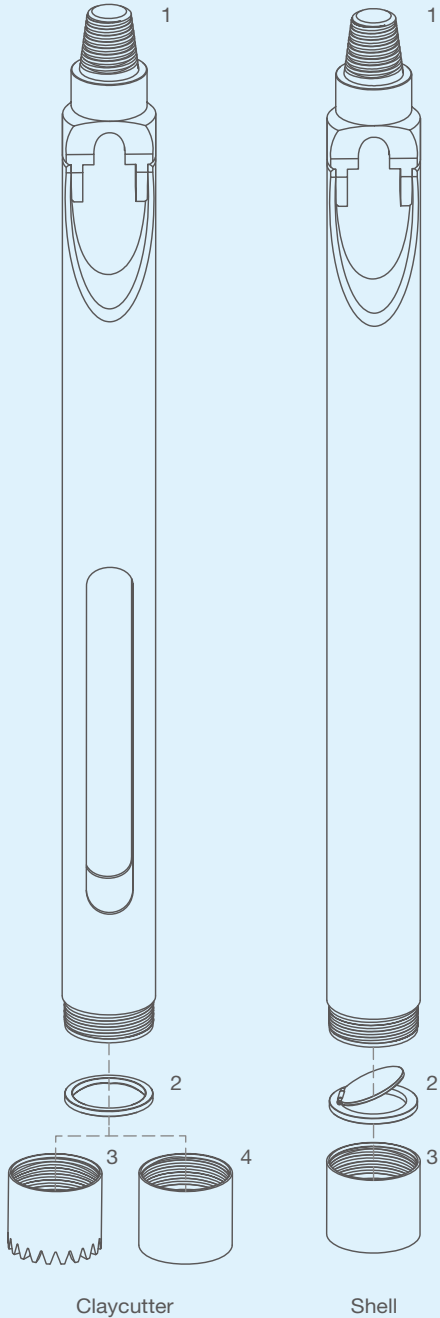
Size (inches)	Tool OD (inches)	To fit casing (OD / ID)
4"	3 1/2"	4 1/2"x3 7/8"
5"	4 1/2"	5 1/2"x4 7/8"
6"	5 1/2"	6 5/8"x5 7/8"
8"	7 5/8"	8 5/8"x7 7/8"

Claycutter Components:

1. Claycutter
2. Ring
3. Plain Shoe
4. Serrated Shoe

Shell Components:

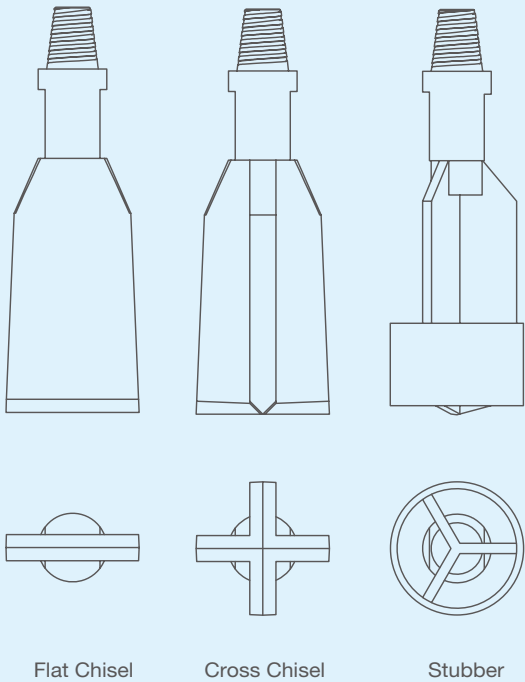
1. Shell
2. Steel Clack Valve
3. Plain Shoe



Cross Chisel and Stubber

- ◆ Cross Chisel is useful for breaking up large stones for drilling in hard formation.
- ◆ Stubber is used in similar conditions to the claycutter, and designed for removing cohesive clay from the borehole.

Size (inches)	Tool OD (inches)
5"	4 1/2"
6"	5 1/2"
8"	7 5/8"
10"	9 5/8"



Mazier Core Barrel

- ◆ The Automatic Mazier Core Barrel is designed for obtaining undisturbed core samples in very soft soils, such as sands, silts and marls.
- ◆ A PVC coreliner is used inside the inner tube to retain the core, and a "basket" catcher can be used to prevent soft materials from slipping out. It is available in 86mm,101mm,116mm,131mm,146mm hole diameter and can be used in conjunction with T2 series and T6 series core barrels which are more suitable for hard rocks.

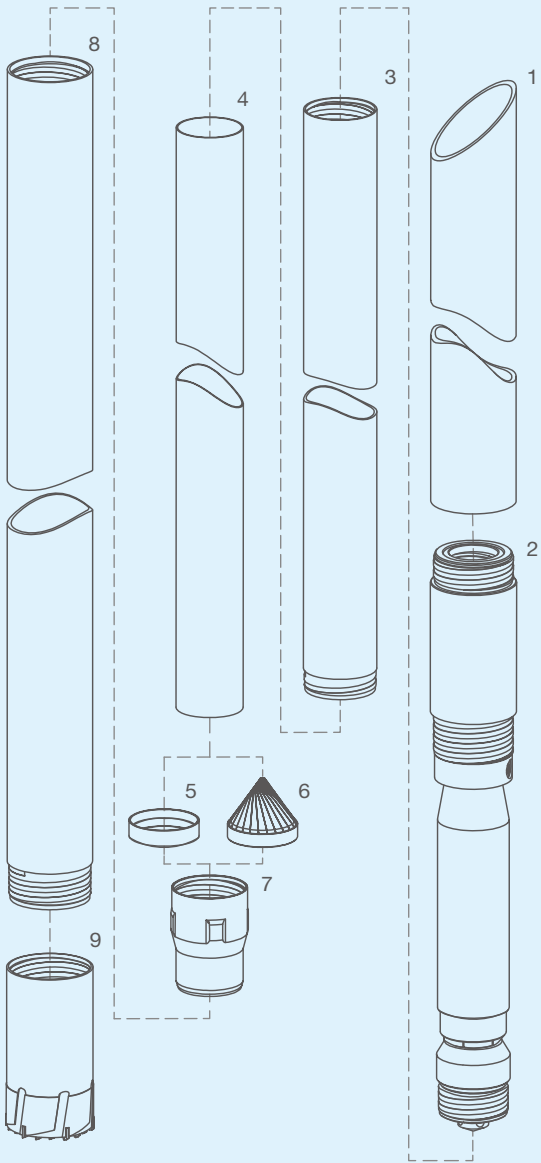
Advantages:

- ◆ Undisturbed core samples from soft soil 0.1MPa.
- ◆ Nil wall coefficient.

Size	Hole Dia. (mm)	Core Dia. (mm)
86	86	62
101	101	71.5
116	116	83
131	131	99
146	146	113

Components:

1. Sediment Tube
2. Head Assembly
3. Inner Tube
4. Plastic Liner
5. Spacer
6. Core catcher (option)
7. Cutting shoe
8. Outer Tube
9. T.C. Core Bit



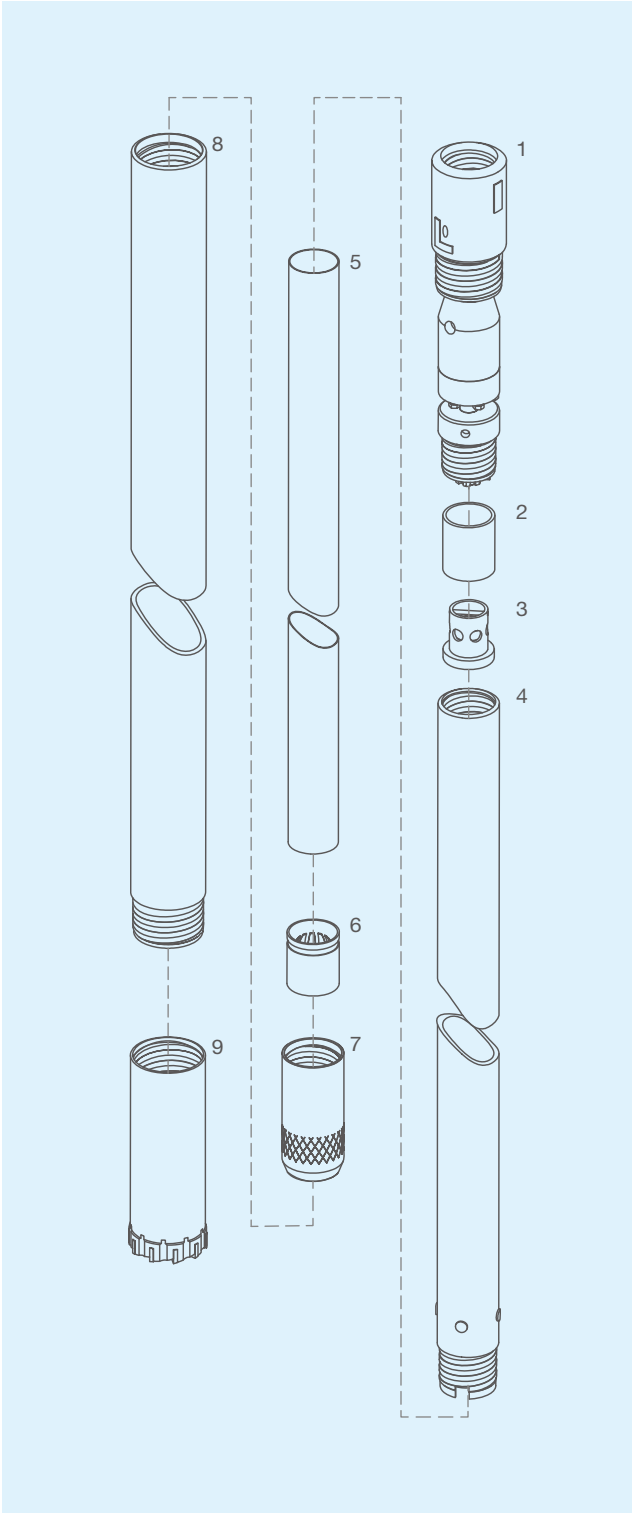
Denison Core Barrel

◆ When the deposit is hard, and extreme pressure is needed to collect the sample, the Denison core barrel does this job. And the samples are not deformed or disturbed during the recovery process.

Size	Hole Dia. (mm)	Core Dia. (mm)
2 15/16 "	77.8	47.6
3.5"	92	60.5

Components:

- 1. Head Assembly
- 2. Valve Seat
- 3. Valve Assembly
- 4. Inner Tube
- 5. Plastic Liner
- 6. Core Catcher
- 7. Cutting Shoe
- 8. Outer Tube
- 9. T.C. Core Bit



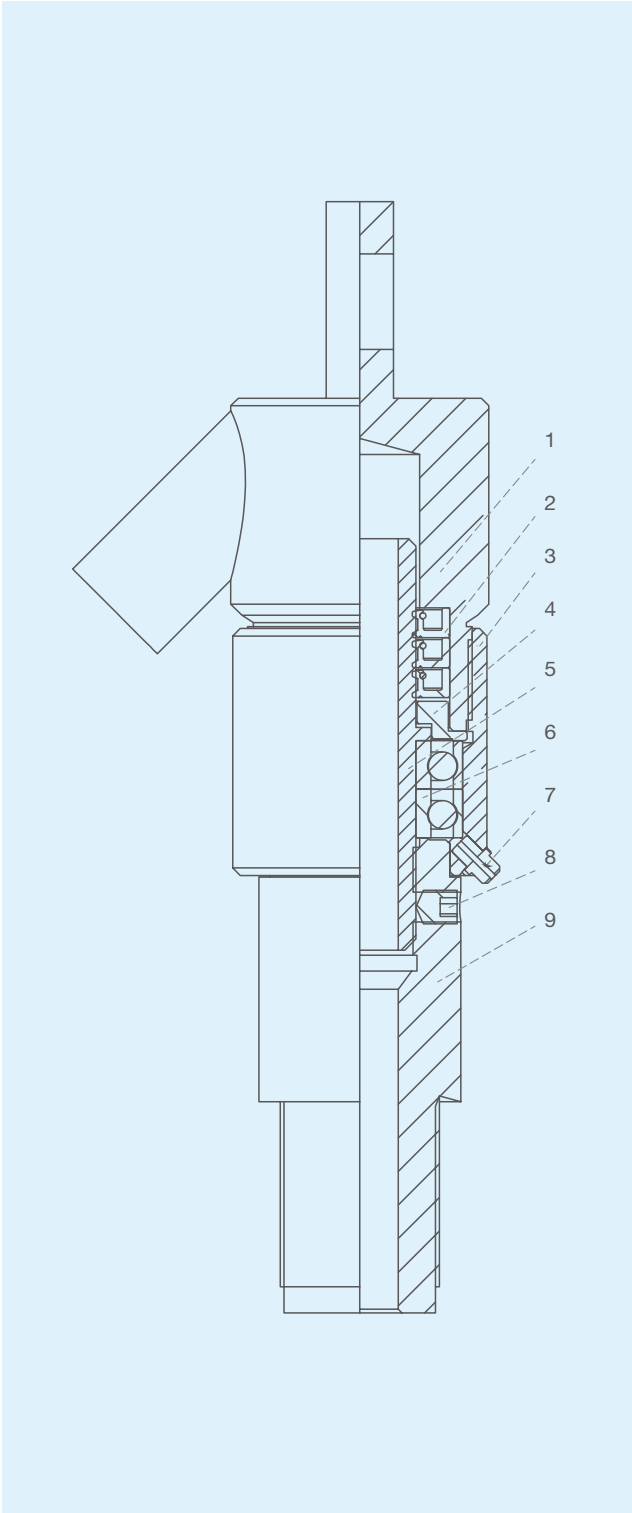
Low Pressure Water Swivel

◆ Application: It's good for low water pressure and high drilling speed, the max. water pressure is about 4 Mpa, drill hole depth is within 300m. The max. Loading Rate is about 2000kgs. It is with a lifting hole on the top.

- ◆ Drill Rod Thread Connection: AW, CR50
- ◆ Hose Connection: G 3/4"
- ◆ Flush Media: Water or mud

Components:

- 1. Hoisting Housing
- 2. Seal Ring Seat
- 3. Lower Swivel Body
- 4. Cover
- 5. Spindle
- 6. Bearing
- 7. Grease Fitting
- 8. Set Screw
- 9. Coupling



Water Swivels

Chinese Standard 42 Water Swivel

Water Swivels

Wireline Standard Water Swivel

Chinese Standard 42 Water Swivel

◆ Application: It's used a lot in China for different drilling conditions. This water swivel has a plug on the top and without lifting hole, the max. loading rate is about 5000kgs and needs to work with the related hoisting plug together.

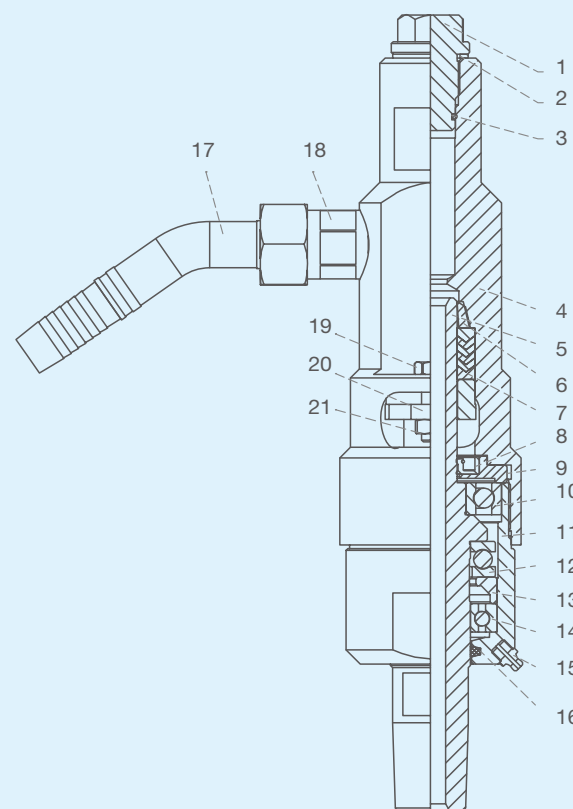
◆ Drill Rod Thread Connection: Chinese 42 left hand fine thread

◆ Hose Connection: 1"

◆ Flush Media: Water or mud

Components:

1. Plug
2. Sealing Washer
3. O-Ring
4. Swivel Cap
5. Spindle
6. Seal Ring 1
7. Seal Ring 2
8. Framework Oil Seal
9. Pressure Pad
10. Ball Bearing 1
11. Lower Swivel Body
12. Thrust Bearing
13. Bearing Washer
14. Ball Bearing 2
15. Grease Fitting
16. Scraper Seal
17. Hose Adaptor
18. Water Inlet Connection
19. Adjusting Screw Rod
20. Pressing Plate
21. Nut



Wireline Standard Water Swivel

◆ Application: Wireline drilling

◆ Drill Rod Thread Connection: AW

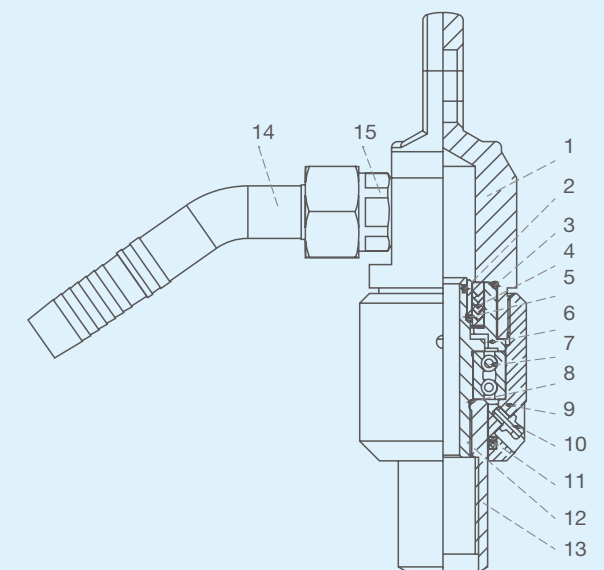
◆ Hose Connection: 1"

◆ Flush Media: Water or mud

◆ Loading Rate: 4540kgs / 10000LBS

Components:

1. Swivel Cap
2. O Ring 1
3. O Ring 2
4. Seal Ring
5. Wear Sleeve
6. Packing Cage
7. Bearing
8. O Ring 3
9. Lower Swivel Body
10. Grease Fitting
11. Felt Seal
12. Spindle
13. Spindle Connection
14. Hose Adaptor
15. Water Inlet Connection



Water Swivels

Wireline Heavy Duty Water Swivel

Hoisting Plugs

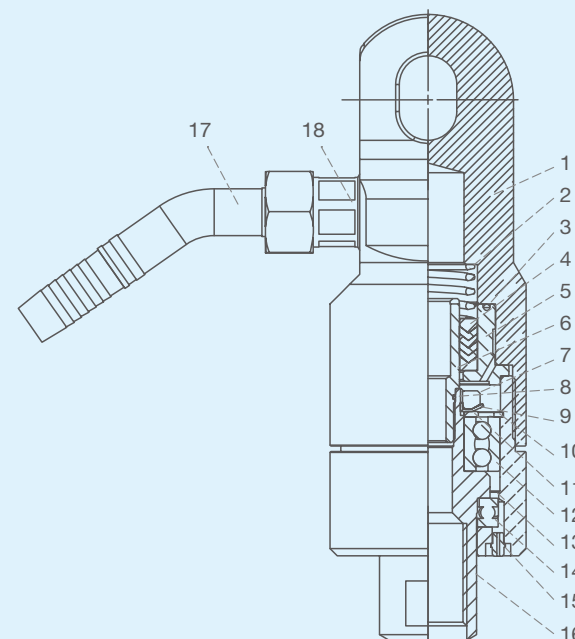
Wireline Rod Hoisting Plug

Wireline Heavy Duty Water Swivel

- ◆ Application: Wireline drilling
- ◆ Drill Rod Thread Connection: BW
- ◆ Hose Connection: 1 1/4"
- ◆ Flush Media: Water or mud
- ◆ Loading Rate: 5000kgs / 11000LBS

Components:

1. Hoisting Cap
2. Compression Spring
3. O Ring 1
4. Seal Ring
5. Seal Ring Seat
6. Spindle Extension
7. Spindle Nut
8. O Ring 2
9. Lock Washer
10. Retaining Ring
11. Spacer
12. Ball Bearing
13. Swivel Housing
14. Thrust Bearing
15. Grease Fitting
16. Spindle
17. Hose Adaptor
18. Water Inlet Connection



Wireline Rod Hoisting Plug

- ◆ The Wireline Rod Hoisting Plug has standard type and heavy duty type, each type is with the max. Loading capacity about 7000kgs and 15000kgs separately. Both of them are built in bearing inside. A lifting ring is forged on the top. It's good for deep hole or heavy drilling assemblies. Normally, it's used in wireline drilling specially.

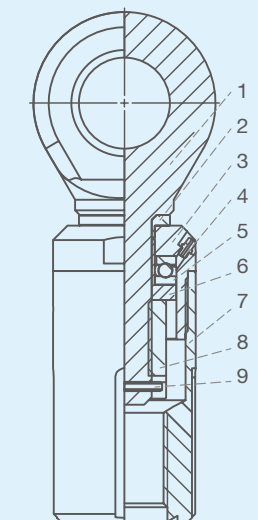
- ◆ The thread of standard type and heavy duty type is NW rod box connection.

Components for Standard Type:

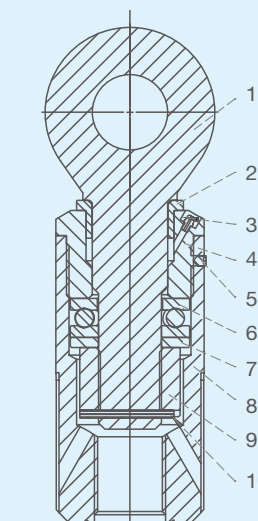
1. Eye Bolt
2. Wear Sleeve
3. Bearing House
4. Grease Fitting
5. Thrust Bearing
6. Shaft Sleeve
7. Lower Housing
8. Slotted Lock Nut
9. Spring Pin

Components for Heavy Duty Type:

1. Eye Bolt
2. Wear Sleeve
3. Grease Fitting
4. Bearing House
5. Set screw
6. Thrust Bearing
7. Washer
8. Lower Housing
9. Slotted Lock Nut
10. Spring Pin



Hoisting Plug Standard Type



Hoisting Plug Heavy Duty Type

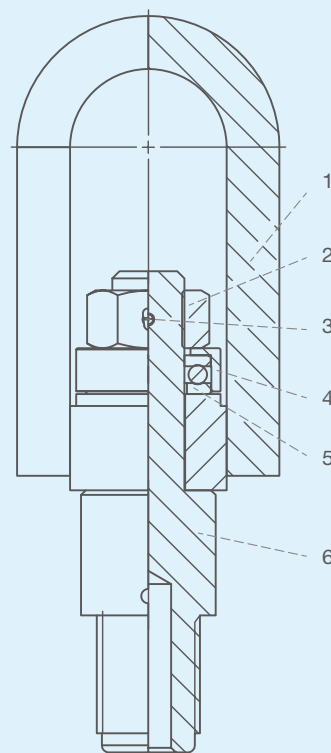
General Hoisting Plug

◆ The General Hoisting Plug is designed with a simple structure and welded a lifting ring on the top, the loading capacity is 2000kgs-3000kgs, it can be used with all kinds of lifting tools and is suitable for light core barrel assemblies, which is drilled in medium-shallow holes or small diameter holes.

◆ The General Hoisting Plug is of a pin thread connection. The thread can be designed as per client's requirement.

Components:

1. Hanger
2. Nut
3. Cotter Pin
4. Bearing Cap
5. Thrust Bearing
6. Stem



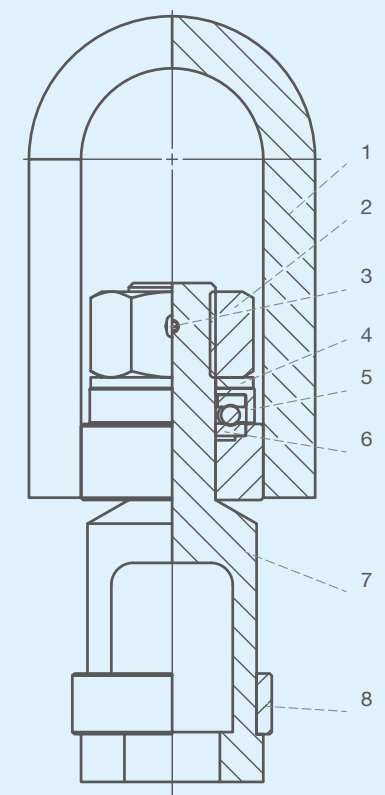
Chinese Standard Hoisting Plug

◆ The Chinese Standard Hoisting Plug is designed with a simple structure and suitable for Chinese Standard 50mm and 42mm drill rods.

◆ The advantage of Chinese Standard Hoisting Plug is easy to operate and speed.

Components:

1. Hanger
2. Nut
3. Cotter Pin
4. Washer
5. Bearing Cap
6. Thrust Bearing
7. Lower Housing
8. Locking Ring



Fishing Tools

- ◆ Fishing tools are used for recovery of drill pipe and casing when the accidents happen during drilling process.



Wrenches

- ◆ Wrench is used to tighten or loose the tubes during drilling.
- ◆ Four types of wrenches are available:
 - ◆ Full Grip of Tube Wrenches: Wireline Series, T Series, C series, WG Series, etc.
 - ◆ Pipe Wrenches: 18", 24", 36", 48".
 - ◆ Circular Wrenches: 73 / 89, 89 / 108, 108 / 127, 127 / 146, etc.
 - ◆ Rod Wrenches: Wireline rods, 42mm, 50mm.



Sub Adaptors

- ◆ Adaptors are made of high quality alloy steel.
- ◆ Connections can be made as per clients' request.



Clamps

- ◆ Foot Clamp is used to prevent drill rods from slipping down the borehole when lowering or extracting.
- ◆ Available Type: Wireline Rod Foot Clamps (Q series drill rods).



- ◆ Conventional Rod Clamps (W series drill rods and CR42, CR50, CR60).



- ◆ Casing Clamps (metric system casings and W series casings).



Core Trays

Galvanized Sheet Iron Core Tray

◆ Available size: NQ, HQ, NMLC, HMLC, length 1200mm / 1000mm.



Plastic New Material Core Tray, Cover and Tag

◆ Available Size: Q series, length 1000mm.



Plastic Composite Core Tray, Cover

◆ Available Size: Q series, length 1000mm.



Chip Tray

◆ Available Size: 500x50x30mm, total number of compartments is 20 measuring 25mm each.

