



EFG

ÉQUIPEMENT DE FORAGE DU QUÉBEC

DRILLING EQUIPMENT FOR SOIL INVESTIGATION AND CIVIL
ENGINEERING





PRODUCTS

CIVIL ENGINEERING

Simple system

Under reaming
system

Bottom drive
shoe system

Drill Rods • Casings • Draws • Casing shoes • Reinforces casing shoes • Down the hole hammers

GEOHERMAL

Drill Rods • Casings • Casing shoes

SOIL INVESTIGATION

Hydraulic sampler • Simple core barrel • Double core barrel T2 • Double core barrel T6
Double core barrel T6S • Casings • Standard cone penetration test equipment SCPT
Standard penetration test equipment SPT

OTHER EQUIPMENT

Connections and special equipment

CIVIL ENGINEERING

Simple system

Under reaming
system

Bottom drive
shoe system



In drilling of soft formations our drawing system: drill rod-casing at the same time allows to drill and to coat transferring the torque from the drill rod to the casing without having to use expensive drilling rig with double rotation head reducing the drilling cost.

CIVIL ENGINEERING

Simple system

Under reaming
system

Bottom drive
shoe system



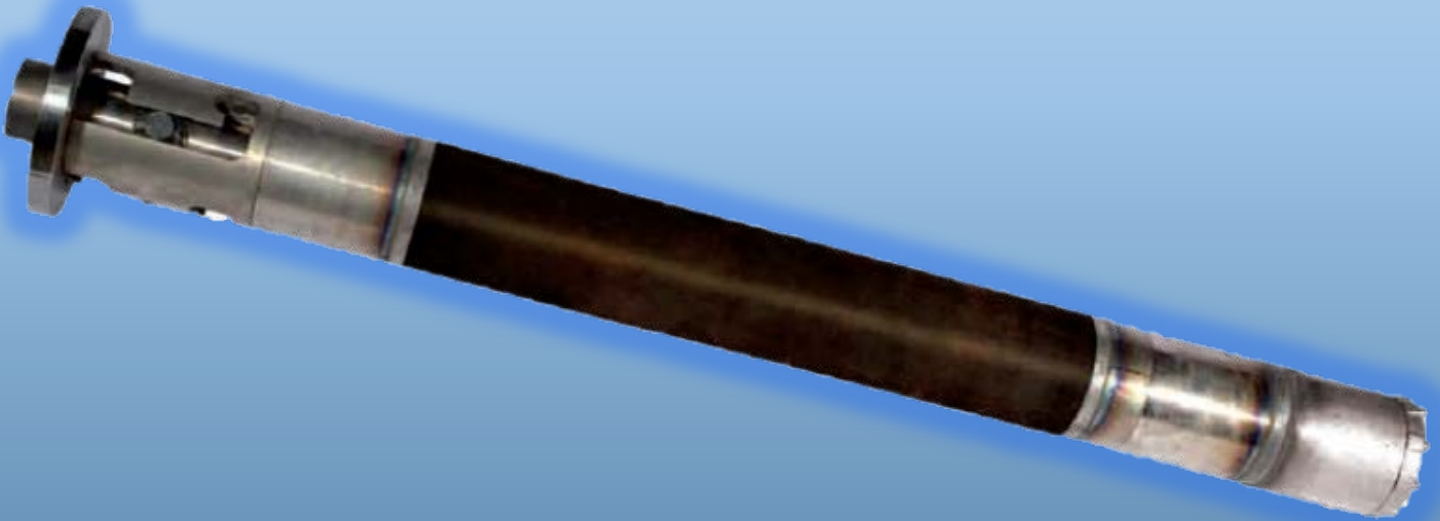
This system is suitable for drilling in soft formations with presence of boulders and rock layers

CIVIL ENGINEERING

Simple system

Under reaming
system

Bottom drive
shoe system



This system is suitable for drilling in soft formations with presence of boulders and rock layers with drawing from bottom shoe.

CASINGS



SIZE	W.T.	I.D.	KG.
D.88,9 L =1000	8	72	16
D.88,9 L =1500	8	72	24
D.88,9 L =2000	8	72	32
D.88,9 L =3000	8	72	48
D.101,6 L =1000	8,8	82	20
D.101,6 L =1500	8,8	82	30
D.101,6 L =2000	8,8	82	40
D.101,6 L =3000	8,8	82	60
D.114,3 L =1000	8,8	94	24
D.114,3 L =1500	8,8	94	35
D.114,3 L =2000	8,8	94	48
D.114,3 L =3000	8,8	94	69
D.127 L =1000	8,8	107	26
D.127 L =1500	8,8	107	39
D.127 L =2000	8,8	107	52
D.127 L =3000	8,8	107	77
D.133 L =1000	8,8	113	27
D.133 L =1500	8,8	113	41
D.133 L =2000	8,8	113	54
D.133 L =3000	8,8	113	81
D.139,7 L =1000	8,8	120	30
D.139,7 L =1500	8,8	120	44
D.139,7 L =2000	8,8	120	60
D.139,7 L =3000	8,8	120	86
D.152,4 L =1000	8,8	133	31.5
D.152,4 L =1500	8,8	133	47
D.152,4 L =2000	8,8	133	63
D.152,4 L =3000	8,8	133	94
D.159 L =1000	8,8	137	34
D.159 L =1500	8,8	137	51
D.159 L =2000	8,8	137	68
D.159 L =3000	8,8	137	102
D.168,3 L =1000	8,8	147	36
D.168,3 L =1500	8,8	147	53
D.168,3 L =2000	8,8	147	72
D.168,3 L =3000	8,8	147	105
D.177,8 L =1000	8,8	158	38
D.177,8 L =1500	8,8	158	56
D.177,8 L =2000	8,8	158	76
D.177,8 L =3000	8,8	158	110
D.193,7 L =1000	8,8	172	41
D.193,7 L =1500	8,8	172	61
D.193,7 L =2000	8,8	172	82
D.193,7 L =3000	8,8	172	121
D.203 L =1000	8,8	178	44
D.203 L =1500	8,8	178	44

SIZE	W.T.	I.D.	KG.
D.203 L =2000	8,8	178	88
D.203 L =3000	8,8	178	128
D.219,1 L =1000	8,8	197	47
D.219,1 L =1500	8,8	197	70
D.219,1 L =2000	8,8	197	94
D.219,1 L =3000	8,8	197	138
D.244,5 L =1000	10	222	58
D.244,5 L =1500	10	222	87
D.244,5 L =2000	10	222	116
D.244,5 L =3000	10	222	174
D.273 L =1000	10	248	65
D.273 L =1500	10	248	97
D.273 L =2000	10	248	130
D.273 L =3000	10	248	195
D.298,5 L =1000	10	275	73
D.298,5 L =1500	10	275	109
D.298,5 L =2000	10	275	146
D.298,5 L =3000	10	275	216
D.323,9 L =1000	12,5	298	100
D.323,9 L =1500	12,5	298	150
D.323,9 L =2000	12,5	298	200
D.323,9 L =3000	12,5	298	300
D.355,6 L =1000	12,5	329	108
D.355,6 L =1500	12,5	329	162
D.355,6 L =2000	12,5	329	216
D.355,6 L =3000	12,5	329	324
D.406,4 L =1000	12,5	380	121
D.406,4 L =1500	12,5	380	182
D.406,4 L =2000	12,5	380	242
D.406,4 L =3000	12,5	380	363
D.457,2 L =1000	14,2	426	148
D.457,2 L =1500	14,2	426	214
D.457,2 L =2000	14,2	426	287
D.457,2 L =3000	14,2	426	427
D.473,1 L =1000	14,2	442	154
D.473,1 L =1500	14,2	442	221
D.473,1 L =2000	14,2	442	291
D.473,1 L =3000	14,2	442	431
D.508 L =1000	14,2	475	163
D.508 L =1500	14,2	475	240
D.508 L =2000	14,2	475	320
D.508 L =3000	14,2	475	482
D.609.6 L =1000	14,2	572	210
D.609.6 L =1500	14,2	572	315
D.609.6 L =2000	14,2	572	420
D.609.6 L =3000	14,2	572	630

CASINGS



SIZE	O.D.	I.D.	L.	INSERT N.	INSERT D.	KG	INSERT TYPE
88.9	90	72	160	10	10	2.5	KAL-G2-K1
101.6	103	82	160	10	10	2.9	KAL-G2-K1
114.3	117	94	160	12	10	3.1	KAL-G2-K1
127	130	107	160	12	10	3.7	KAL-G2-K1
133	134	113	160	14	10	3.8	KAL-G2-K1
139.7	143	120	160	14	10	3.9	KAL-G2-K1
152.4	155	132	160	16	10	4.5	KAL-G2-K1
159	161	137	160	16	10	4.6	KAL-G2-K1
168.3	170	147	160	16	10	4.7	KAL-G2-K1
177.8	180	158	160	16	10	4.9	KAL-G2-K1
193.7	195	172	160	18	10	5.5	KAL-G2-K1
203	204	178	160	18	10	6	KAL-G2-K1
219.1	222	197	160	20	10	7	KAL-G2-K1
244.5	245	222	160	24	10	8	KAL-G2-K1
273	274	248	160	26	10	9	KAL-G2-K1
298.5	300	275	160	28	10	9.5	KAL-G2-K1
323.9	325	298	160	30	10	12	KAL-G2-K1
355.6	358	329	180	34	10	15	KAL-G2-K1
406.4	409	380	180	38	10	18	KAL-G2-K1
457.2	459	246	180	48	10	22	KAL-G2-K1
473.1	474	442	180	50	10	25	KAL-G2-K1
508	510	475	180	54	10	28	KAL-G2-K1
609.6	612	572	180	56	10	30	KAL-G2-K1

- Insert KAL : for soft formations
- Insert G2: for soft formations, medium formations, reinforced concrete
- Insert K1: for hard formations

REINFORCED SHOES



SIZE	O.D.	I.D.	L.	INSERT N.	INSERT D.	KG	INSERT TYPE
88.9	90	72	160	10	10	2.5	KAL-G2-K1
101.6	103	82	160	10	10	2.9	KAL-G2-K1
114.3	117	94	160	12	10	3.1	KAL-G2-K1
127	130	107	160	12	10	3.7	KAL-G2-K1
133	134	113	160	14	10	3.8	KAL-G2-K1
139.7	143	120	160	14	10	3.9	KAL-G2-K1
152.4	155	132	160	16	10	4.5	KAL-G2-K1
159	161	137	160	16	10	4.6	KAL-G2-K1
168.3	170	147	160	16	10	4.7	KAL-G2-K1
177.8	180	158	160	16	10	4.9	KAL-G2-K1
193.7	195	172	160	18	10	5.5	KAL-G2-K1
203	204	178	160	18	10	6	KAL-G2-K1
219.1	222	197	160	20	10	7	KAL-G2-K1
244.5	245	222	160	24	10	8	KAL-G2-K1
273	274	248	160	26	10	9	KAL-G2-K1
298.5	300	275	160	28	10	9.5	KAL-G2-K1
323.9	325	298	160	30	10	12	KAL-G2-K1
355.6	358	329	180	34	10	15	KAL-G2-K1
406.4	409	380	180	38	10	18	KAL-G2-K1
457.2	459	426	180	48	10	22	KAL-G2-K1
473.1	474	442	180	50	10	25	KAL-G2-K1
508	510	475	180	54	10	28	KAL-G2-K1
609.6	612	572	180	56	10	30	KAL-G2-K1

- Insert KALS: for soft and medium/ hard formations

INTERNAL – EXTERNAL DRAWS

External draw	K.G.	Internal draw	KG.
D.88,9	5.5	54BWJ	5
D.101,6	6	54BWJ	5
D.114,3	8	76 2''3/8 API REG	10
D.127	9	76 2''3/8 API REG	10
D.133	9	76 2''3/8 API REG	10
D.139,7	10	76 2''3/8 API REG	10
		90 2''3/8 API REG	14
D.152,4	12	76 2''3/8 API REG	10
		90 2''3/8 API REG	14
D.159	14	76 2''3/8 API REG	10
		90 2''3/8 API REG	14
D.168,3	15	90 2''3/8 API REG	14
		114 3''1/2 API REG	22
D.177,8	16	90 2''3/8 API REG	14
		114 3''1/2 API REG	22
D.193,7	18	90 2''3/8 API REG	14
		114 3''1/2 API REG	22
D.203	19	90 2''3/8 API REG	14
		114 3''1/2 API REG	22
D.219.1	21	114 3''1/2 API REG	22
		140 4''1/2 API REG	34
D.244,5	23	114 3''1/2 API REG	22
		140 4''1/2 API REG	34
D.273	26	140 4''1/2 API REG	34
D.298,5	28	140 4''1/2 API REG	34
D.323,9	34	140 4''1/2 API REG	34
		168 4''1/2 API REG	60
D.355,6	40	168 4''1/2 API REG	82
		219 6''5/8 API REG	130
D.406,4	45	168 4''1/2 API REG	82
		219 6''5/8 API REG	130
D.457,2	80	219 6''5/8 API REG	130
D.473,1	85	219 6''5/8 API REG	130
D.508	90	219 6''5/8 API REG	130
D.609,6	95	219 6''5/8 API REG	130



- Internal/ external draw material: 42CRMO4 with nitro carburization

FRICTION WELDED RODS



SIZE		W.T.	KG.
D.54 BWJ	L=1000	6.3	9
D.54 BWJ	L=1500	6.3	13
D.54 BWJ	L=2000	6.3	17
D.54 BWJ	L=3000	6.3	25
D.76.1 2'' 3/8 API REG	L=1000	6.3	15.1
D.76.1 2'' 3/8 API REG	L=1500	6.3	20.5
D.76.1 2'' 3/8 API REG	L=2000	6.3	26
D.76.1 2'' 3/8 API REG	L=3000	6.3	36.8
D.88.9 2'' 3/8 API REG	L=1000	6.3	18.7
D.88.9 2'' 3/8 API REG	L=1500	6.3	25.2
D.88.9 2'' 3/8 API REG	L=2000	6.3	32
D.88.9 2'' 3/8 API REG	L=3000	6.3	44.5
D.114.3 3'' 1/2 API REG	L=1000	6.3	28.6
D.114.3 3'' 1/2 API REG	L=1500	6.3	37
D.114.3 3'' 1/2 API REG	L=2000	6.3	46
D.114.3 3'' 1/2 API REG	L=3000	6.3	62.2
D.127 3'' 1/2 API REG	L=1000	6.3	32.3
D.127 3'' 1/2 API REG	L=1500	6.3	41.6
D.127 3'' 1/2 API REG	L=2000	6.3	51
D.127 3'' 1/2 API REG	L=3000	6.3	69.7
D.139.7 4'' 1/2 API REG	L=1000	6.3	38.6
D.139.7 4'' 1/2 API REG	L=1500	6.3	49
D.139.7 4'' 1/2 API REG	L=2000	6.3	60
D.139.7 4'' 1/2 API REG	L=3000	6.3	80.1
D.168.3 4'' 1/2 API REG	L=1500	8.8	92
D.168.3 4'' 1/2 API REG	L=2000	8.8	122
D.168.3 4'' 1/2 API REG	L=3000	8.8	140
D.177.8 4'' 1/2 API REG	L=1500	8.8	98
D.177.8 4'' 1/2 API REG	L=2000	8.8	132
D.177.8 4'' 1/2 API REG	L=3000	8.8	150
D.193.7 6'' 5/8 API REG	L=1500	8.8	125
D.193.7 6'' 5/8 API REG	L=2000	8.8	167
D.193.7 6'' 5/8 API REG	L=3000	8.8	180
D.219.1 6'' 5/8 API REG	L=1500	8.8	140
D.219.1 6'' 5/8 API REG	L=2000	8.8	188
D.219.1 6'' 5/8 API REG	L=3000	8.8	208

- Middle pipe material: API5D S135 (RM N/mm² 1050-1150)
- Tool joint material: 42CRM04 – with nitro carburization

DOWN THE HOLE HAMMERS



DTH HAMMERS	BITS
PUMA G2	Ø70 Ø76 Ø80
PUMA 3.1 DHD3.5	Ø90 Ø95 Ø101
PUMA M3.1Q DHD3.5	Ø95 Ø101 Ø105
PUMA 4.1Q DHD340	Ø110 Ø115 Ø127 Ø130 Ø140 Ø152
PUMA M5.2 DHD350-QL50	Ø130 Ø140 Ø150 Ø165
PUMA M6.2 DHD360-QL60	Ø165 Ø171 Ø178 Ø190 Ø203 Ø216 Ø219 Ø241 Ø254
PUMA 8.1 DHD380-QL80-SD8	Ø203 Ø216 Ø219 Ø241 Ø254 Ø268 Ø292 Ø305
PUMA 10 SD10	Ø241 Ø254 Ø268 Ø292 Ø305
PUMA 12 SD12	Ø305 Ø314 Ø330 Ø357 Ø381 Ø444 Ø470 Ø508

GEOHERMAL DRILLING EQUIPMENT

FRICTION WELDED RODS



SIZE	W.T.	KG.
D.76.1 2"3/8 API REG L=1500	6.3	20.5
D.76.1 2"3/8 API REG L=2000	6.3	26
D.88.9 2"3/8 I.F. L=1500	6.3	25
D.88.9 2"3/8 I.F. L=2000	6.3	31

- Middle pipe material: API5D S135 (RM N/mm² 1050-1150)
- Tool joint material: 42CRM04 – with nitro carburization

LEFT HAND CASINGS



SIZE	W.T.	D.I.	KG.
D.133 L=1500	8.8	113	41
D.133 L=200	8.8	113	54
D.139.7 L=1500	8.8	120	44
D.139.7 L=2000	8.8	120	60
D.152.4 L=1500	8.8	132	47
D.152.4 L=2000	8.8	132	63
D.168.3 L=1500	8.8	147	53
D.168.3 L=2000	8.8	147	72

- Middle pipe material: N80
- Tool joint material: 42CRM04 – with nitro carburization

REINFORCED CASING SHOES



SIZE	O.D.	D.I.	L.	INSERT N.	INSERT D.	KG	INSERT TYPE
133 M/pin	139	113	165	14	10	3.9	KALS
133 F/box	139	113	165	14	10	3.9	KALS
139.7 M/pin	147	120	165	14	10	4	KALS
139.7 F/box	147	120	165	14	10	4	KALS
152.4 M/pin	159	132	165	16	10	4.5	KALS
152.4 F/box	159	132	165	16	10	4.5	KALS
168.3 M/pin	175	147	165	16	10	5	KALS
168.3 F/box	175	147	165	16	10	5	KALS

SOIL INVESTIGATION

HYDRAULIC SAMPLER



- The hydraulic sampler is suitable for sampling of slit, clay and incoherent formations with fine grain

SHELBY SAMPLER

- This sampler is used to extract samples in clay soft soils.



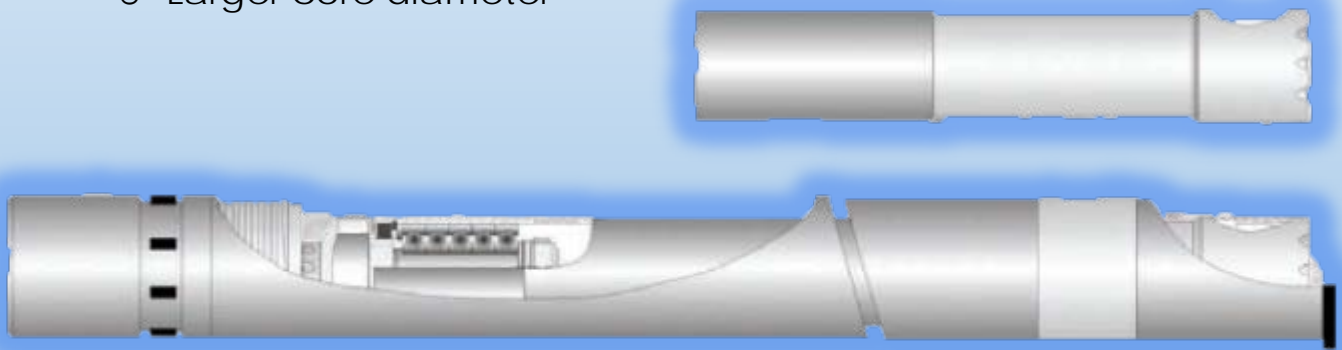
SIMPLE CORE BARREL Ø 101-116-131

- The simple core barrel is a very sturdy sampler, suitable for the sampling of soft formations



DOUBLE TUBE CORE BARREL TYPE 2 Ø 66-76-86-101

- T2 series are thin kerf core barrels for most types of homogenous and rock formations where water flush can be used. The thin kerf means:
 - Faster penetration
 - Lower diamond bit cost
 - Larger core diameter



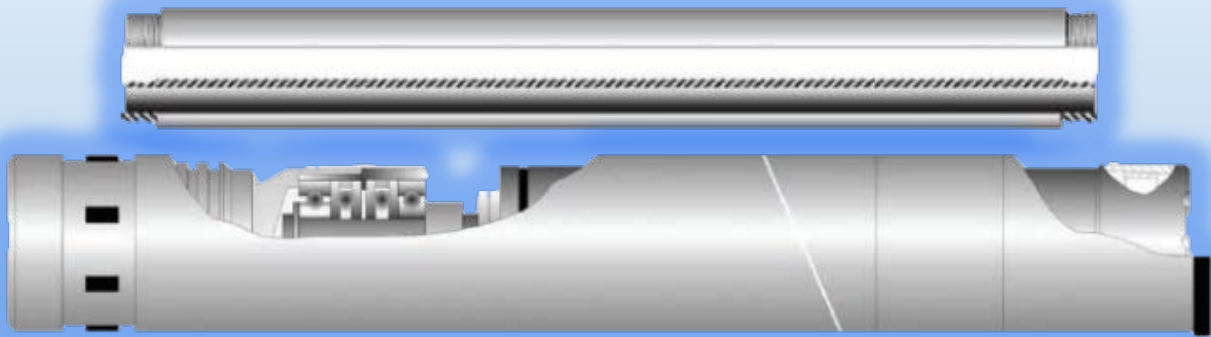
DOUBLE TUBE CORE BARREL TYPE 6 Ø 101-116-131

- The sturdy T6 core barrels are designed for core sampling in all formations. Despite the relatively thin kerf, T6 can also be used with mud and water.



DOUBLE TUBE CORE BARREL TYPE T6S Ø 101-131

- The T6 core barrels are mostly used on site investigation in very loose formations. The split inner tube combined with force discharge give a possibility to take undestroyed sample.
- T6S is a sturdy core barrel suitable for flushing, and water with little modifications.



CASINGS

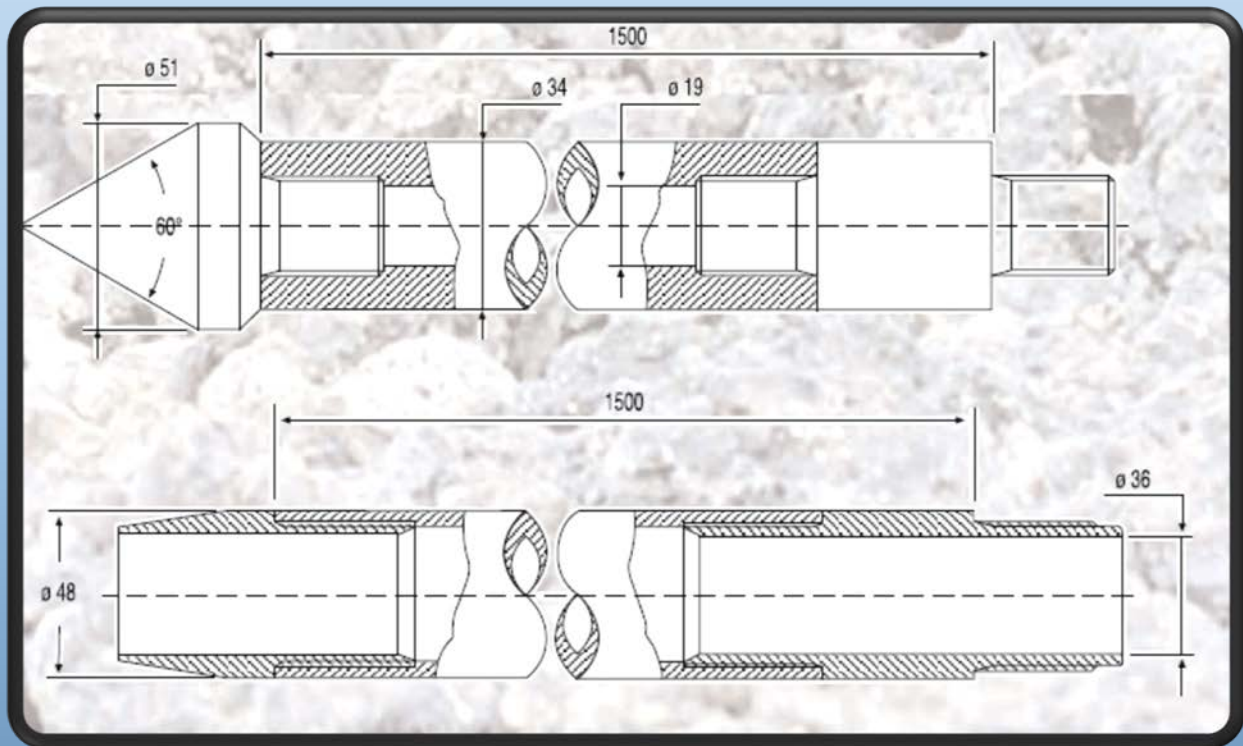


SIZE	W.T.	I.D.	KG.
D.127 L=1500	8.8	107	40
D.152.4 L=1500	8.8	133	47
D.177.8 L=1500	8.8	158	56

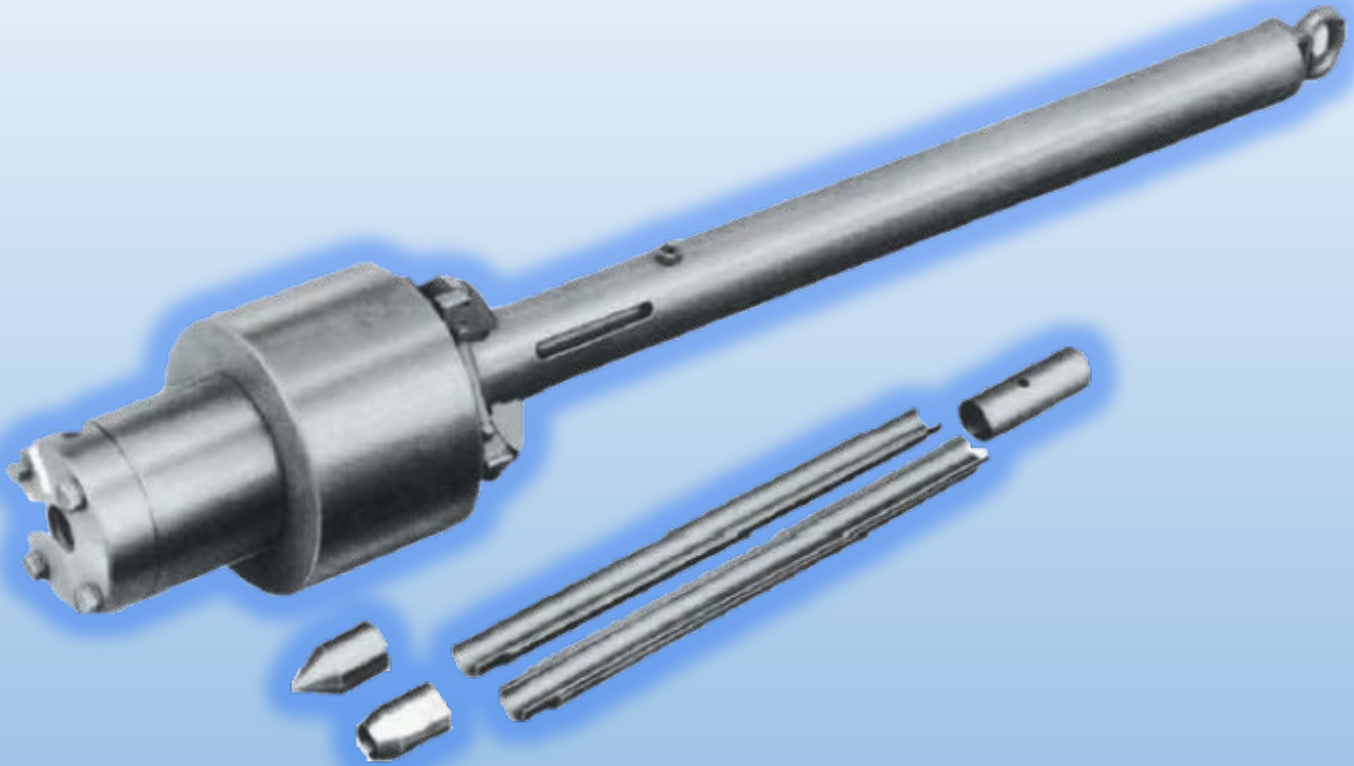
- Middle pipe material: N80
- Tool joint material: 42CRM04 – with nitro carburization

CASING FOR STANDARD CONE PENETROMETER TEST (SCPT)

- The rods for dynamic penetrometer are manufactured with a special steel at the mechanical stress. When there is too much friction on the side of the rod it is necessary to use the casing.



STANDARD PENETRATION TEST EQUIPMENT



- This procedure developed by Terzaghi and Peck gives the measurement of the penetration resistance of soil, using a standard sampler driven for 1 ft. with a 140 lb, hammer dropping 30 inches.

The split-spoon sampler connected to the drill rods, is lowered into the hole after the hole has been cleaned out and the water level has settled.

The automatic hammer falls on the driving rod head so that the tube is driven 6 inches into the layer (to avoid inference zones) and the spoon is the driven 1 foot. The number of blows is counted separately for each stretch of 6 inches.

OTHER EQUIPMENT



MULTIBIT



- 4'' - 4'' 1/2 - 5'' - 5'' 1/2 - 6''



ÉQUIPEMENT DE FORAGE DU QUÉBEC

203-5245 boul. Guillaume Couture

Lévis, Québec, Canada

G6X 4Z4