



Secoroc Rock Drilling Tools

***EXPLORATION
CORE DRILLING
BITS***

Product Catalogue

Atlas Copco





EXPLORATION DRILLING

Atlas Copco Secoroc can offer the equipment needed for all underground and surface exploration applications. This includes core drilling rigs and a full range of high technical and high quality products; In-The-Hole equipment such as drill rods & casing; wire line & conventional core barrels and diamond tools - all designed to maximize our customers' profitability.

All of our products are designed to help the user minimize down-time and maximize productivity. Be assured that we are ISO certified. However, if a problem should occur, we will quickly be at your site thanks to the worldwide Atlas Copco Service organization.

Just contact your local Atlas Copco representative.
Visit us at www.atlascopco.com

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A comprehensive range of Atlas Copco core drilling tools designed to increase productivity and profitability.

Atlas Copco is among the world's leading manufacturers of core drilling equipment. We have supplied our market with high performance products over many generations. Our aim has always been clear – to develop safe and environmental friendly products with sustainable productivity. The Atlas Copco line of core drilling tools is a result from this effort.

The market's most diverse and comprehensive line

Our line of In-the-Hole tools offers a total solution; conventional and wire line core barrels, auto safe overshot, drill rods and casings, not to mention a wide range of diamond products to make core drilling safe and profitable.

A multitude of applications

Each Atlas Copco core drilling bit covers a wider range of applications, fewer bit types than before is needed to do the same job. The Atlas Copco series of new matrices combined with optimized crown profiles have been categorized into three types of drilling applications

to simplify the bit selection. Bit selection is much simpler for the driller and reduces the number of bits needed on the job site.

Atlas Copco Solutions

The combination of Atlas Copco's In-the-hole tools with Atlas Copco's Christensen surface core drilling rigs and Diamec underground core drilling rigs, searching for the perfect vein to mine is made easy.

Get the best from your drilling equipment

Atlas Copco is a global company with Customer Centres in more than

150 countries. Our dedicated sales engineers are always on hand to discuss and solve your drilling problems. We offer service support, spare parts and consumables packages for sustainable productivity. And with our rigorously field tested products, you can be assured of the market's best exploration drilling equipment.

MORE PERFORMANCE - LESS BITS

As each of our core drilling bit covers a wider range of applications, fewer bit types than before are needed which translates to a reduction in inventory. Excore bits are supported by the best matrices from Hobic and Craelius.

This makes bit selection much simpler for the driller and reduces the number of bits needed on the job site. It is easier for less experienced drillers to select the optimal bit for the job.

This not only improves productivity, but also reduces the risk for failing to meet deadlines for the drilling contractor. The Atlas Copco series of matrices combined with optimized crown profiles have been categorized into three types of drilling applications to

simplify the bit selection for the driller. As our bits provide superior performance in a wider range of formations, it becomes easier for the driller to find the best bit for the job, meaning the new range is more forgiving.

Each matrix type is available in various crown designs like the Extended Channel Flush (ECF) for broken to competent formations, the patented Jet profile for fast cutting in competent formations and Face Discharge (FD) design for extremely broken and triple tube applications.

Combining these features with different available crown heights, from 10-16 mm, means there is an Excore

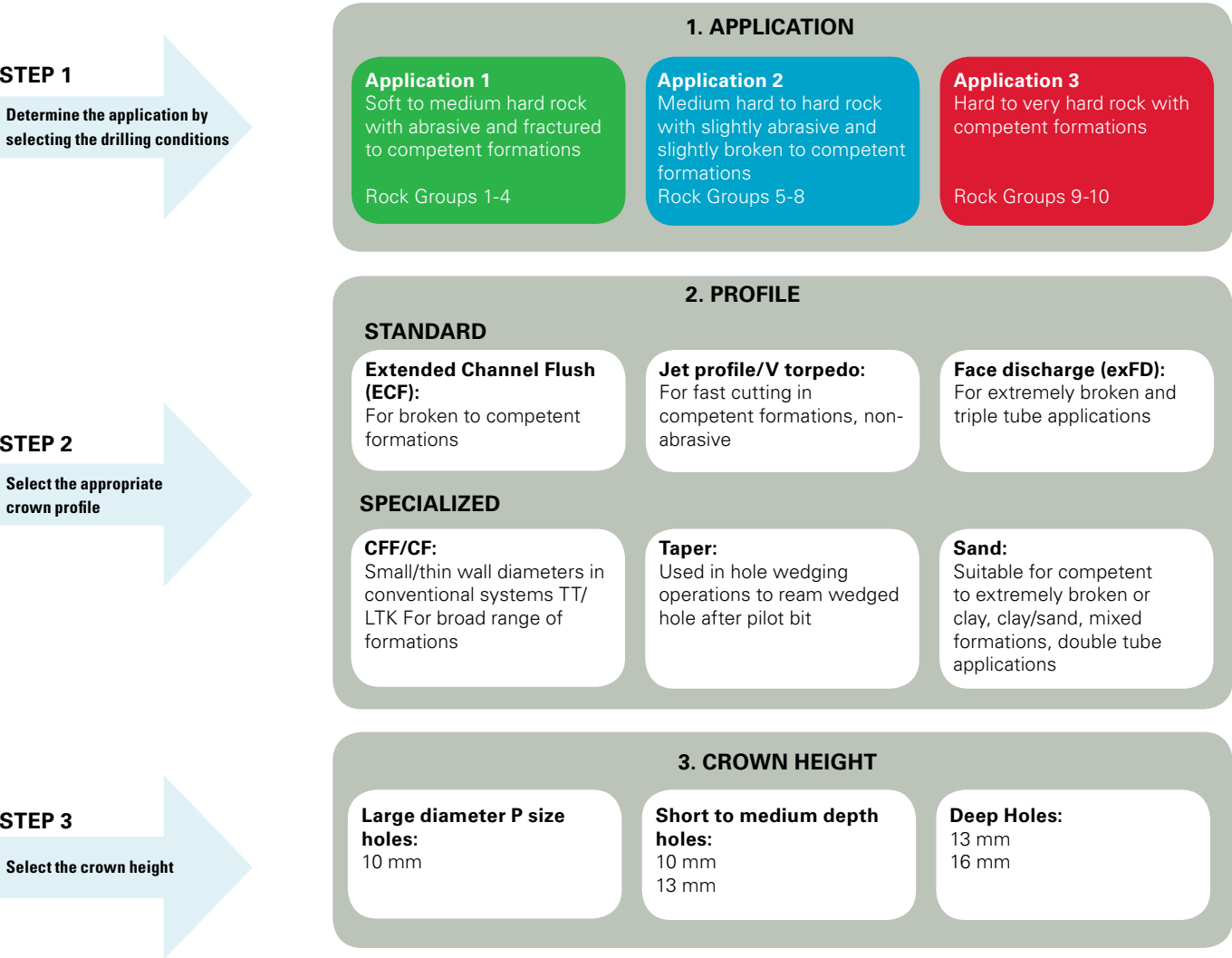
for every core drilling application. All core drilling bits are divided into three applications:

APPLICATION 1
For soft to medium hard, very abrasive to slightly abrasive and very fractured to slightly broken formations.

APPLICATION 2
For medium hard to hard, abrasive to slightly abrasive, moderately fractured to competent formations.

APPLICATION 3
For hard to very hard, slightly abrasive to nonabrasive, very competent formations.

HOW TO SELECT IN THREE EASY STEPS:



Bit selection chart

To simplify bit selection for the driller, rock formations have been categorized into three applications. Each application has a series of matrices designed specifically for that type of drilling condition which will provide optimum performance.

APPLICATION 1 (GREEN)

Soft to medium hard, abrasive and fractured to competent formations.



APPLICATION 2 (BLUE)

Medium hard to hard, slightly abrasive, slightly fractured to competent formations.



APPLICATION 3 (RED)

Hard to extremely hard, competent formations.



Rock Group	Formation Description	Rock Type	Abrasion Friendly	Matrix
1-4	Soft to medium hard Extremely to slightly abrasive Extremely to slightly broken	Shale Sandstone Limestone	2-4	
5	Medium hard Abrasive Moderately to slightly broken	Limestone Dolomite Weathered Granite Weathered Gneiss Serpentine Metaperidotite	4-6 5-7 7AC	
6	Medium hard Moderately abrasive Moderately to slightly broken	Diorite Gabbro Peridotite Gneiss Basalt Andesite	6-8 7ACF	
7	Medium hard - hard Moderately abrasive Slightly broken to competent	Metabasalt Amphibolite Metamorphosed Diorite Metamorphosed Gabbro Diabase	8-9 11AC KS(S++)	
8	Hard Slightly abrasive Competent	Quartz rich Skarn Granite Pegmatite	9-10	
9	Very hard Slightly abrasive or non-abrasive Very competent	Metamorphosed granitic rock Quartz rich Gneiss		
10	Extremely hard Non-abrasive Fine grained to amorphous Very competent	Chert Jasperite Quartzite Highly metamorphosed volcanics		9 10

EXCORE DRILLING PARAMETERS

Recommendation

The following information will assist you with proper bit selection or testing according to ground conditions.

RPI/RPC

Many factors influence the performance of impregnated bits. In addition to the type of formation being drilled, factors such as hole diameter, depth, ground conditions, type of drill, weight on bit, water flow and RPM all have an impact on performance.

The top priority of today's drillers is performance. To achieve optimum drilling production while balancing bit life, a correlation between RPM and penetration rate has been developed for impregnated diamond bits. This parameter is referred to as Rotation Per Inch of advance (RPI) or Rotation Per Centimeter (RPC). This parameter can be utilized as a guideline to increase penetration rates while maintaining reasonable bit life.

Sample Calculation N Size Bits

RPM / Penetration rate = RPI (RPC)

1200 / 8" per min = 150 RPI

1200 / 20,3 cm per min = 59 RPC

Bit Size	RPM	Optimum RPM	RPI (RPC)
A	1500 - 1700	1650	250 (100)
B	1200 - 1450	1350	200 (79)
N	900 - 1200	1100	170 (67)
H	750 - 950	850	130 (51)
P	600 - 750	650	100 (40)

RPI or RPC = RPM / Penetration rate. This chart has been developed as a guideline for Atlas Copco impregnated diamond bits.

"Polished" bit

Often an indication that an impregnated bit has become polished will be a reduction in torque and penetration rate, with an increase in the weight on bit (WOB). Controlling the flow of water can be used as a method to sharpen the bit. To sharpen a bit in the hole, gradually reduce the flow of water while increasing the weight on the bit to strip the bit and expose fresh diamonds. Once the bit has been sharpened increase the flow of water and reduce the WOB as required.

Water flow

Water flow is a critical parameter. Insufficient or excessive water flow can result in poor performance.

Size	LPM (USGPM)	RPM
A	15-20 (4-5)	1650
B	30-36 (8-10)	1350
N	38-45 (10-12)	1100
H	50-60 (13-16)	850
P	75-84 (20-22)	650

Water flow may vary depending on the specific application and therefore this chart is only to be used as a guideline.

Size	Core barrel design	Core Bit OD		Reaming Shell OD		Core Diameter	
		mm	in	mm	in	mm	in
A	AW34	47.6	1.87	48.0	1.89	33.5	1.32
	46,8 HAGBY**	46.8	1.84	47.0	1.85	28.8	1.13
	46TT	46.0	1.81	46.3	1.82	35.1	1.38
	A0**	47.6	1.87	48.0	1.89	26.9	1.06
	AGM, A0TW/ATW**	47.6	1.87	48.0	1.89	30.3	1.19
	A0TK**	47.6	1.87	48.0	1.89	30.5	1.20
B	48TT/LTK48	47.6	1.87	48.0	1.89	35.3	1.39
	56TT	56.0	2.20	56.3	2.21	45.2	1.77
	56,6 HAGBY**	56.6	2.22	56.8	2.23	38.9	1.53
	B0**	59.5	2.34	60.0	2.36	36.4	1.43
	B0TK**	59.5	2.34	60.0	2.36	40.7	1.60
	BGM, B0TW/BTW**	59.5	2.34	60.0	2.36	42.0	1.66
N	60TT/LTK60	59.5	2.34	60.0	2.36	44.0	1.73
	DEVICO 76**	75.3	2.96	75.6	2.98	31.6	1.24
	N03**	75.3	2.96	75.6	2.98	45.1	1.77
	N0**	75.3	2.96	75.6	2.98	47.6	1.88
	N02**	75.3	2.96	75.6	2.98	50.7	2.00
	NGM, NTW**	75.3	2.96	75.6	2.98	56.1	2.21
H	H03**	95.6	3.76	96.1	3.78	61.1	2.41
	H0**	95.6	3.76	96.1	3.78	63.5	2.50
	H0TT**	95.6	3.76	96.1	3.78	61.1	2.41
	HTW**	95.6	3.76	96.1	3.78	70.9	2.79
P	P03**	122.0	4.80	122.7	4.81	83.0	3.26
	P0**	122.0	4.80	122.7	4.81	85.0	3.34

** Wireline drilling system

Standard



Extended channel flushing (ECF)

- Standard profile - general purpose design
- Suitable for mixed formations containing broken and competent zones
- Suitable for a broad range of formations



Face discharge (exFD)

- Designed to minimize washing of core sample
- Suitable for broken/granular formations
- exFD stand for "excellent" FD where all flushing medium is directed to the flushing holes.



V

Jet

- High performance "free cutting" bit
- High productivity
- Suitable for hard/competent formations
- Suitable for non-abrasive formations

Specialized



CFF/CF

- Standard profile for small/thin wall diameters in conventional systems TT/LTK
- Water way depth can be adjusted using metal file for better flushing control (CFF)
- Suitable for broad range of formations



Taper

- Profile used in hole wedging (directional drilling) operations to ream wedged hole after pilot bit

Sand

- Suitable for competent to extremely broken or clay, clay/sand mixed formations
- Double tube applications
- To improve core recovery in soft/ broken or loose zones
- Alternative for the exFD profile when the exFD flushing holes tend to clog.

REAMING SHELLS AND CASING SHOES

Surface Set Reaming Shells

Excure reaming shells are manufactured to withstand difficult drilling conditions and provide long life. Surface set reaming shells in all common DCDMA sizes are a stock item. Impregnated reaming shells and reaming shells in full hole profile are also available. Reaming shells are available in industry standard lengths of 15 cm (6"), 25 cm (10") and 46 cm (18 3/8"). A combination of polycrystalline diamonds (PCD) and natural diamonds are utilized for most standard reaming shells and all heavy duty reaming shells.

Casing and Rod Shoes

Excure casing and rod shoes are manufactured to handle a broad range of conditions, from unconsolidated overburden to broken, abrasive formations. Impregnated standard and heavy duty casing shoes are stock items.



*Our new baby will
amaze you.*

AZURE

*– proven to drill
exceptionally
through the entire
range of medium
hard to hard
formations.*

Atlas Copco



WIRELINER DIAMOND IMPREGNATED CORE BITS

AO (Double Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
A0	2-4	ECF	13	6	3760 9181 11
A0	4-6	ECF	13	6	3760 9181 13
A0	AZURE	ECF	13	6	3760 9200 17
A0	AZURE	V	13	7	3760 9200 18
A0	5-7	ECF	13	6	3760 9181 14
A0	7AC	V	13	7	3760 9034 65
A0	6-8	ECF	13	6	3760 9181 15
A0	7ACF	V	13	7	3760 9038 65
A0	11AC	ECF	13	7	3760 9048 85
A0	8-9	ECF	13	6	3760 9181 17
A0	9	ECF	13	6	3760 9181 18
A0	10	ECF	13	6	3760 9181 19

BO (Double Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
B0	2-4	ECF	10	8	3760 9190 37
B0	2-4	ECF	13	8	3760 9181 61
B0	2-4	ECF	16	8	3760 9185 81
B0	2-4	JET	13	6	3760 9181 71
B0	2-4	JET	16	6	3760 9181 81
B0	4-6	ECF	13	8	3760 9190 38
B0	4-6	ECF	13	8	3760 9181 63
B0	4-6	ECF	16	8	3760 9185 83
B0	4-6	JET	13	6	3760 9181 73
B0	4-6	JET	16	6	3760 9181 83
B0	AZURE	ECF	13	8	3760 9200 27
B0	AZURE	ECF	16	8	3760 9200 28
B0	AZURE	JET	13	6	3760 9200 29
B0	AZURE	JET	16	6	3760 9200 30
B0	AZURE	V	13	7	3760 9200 31
B0	AZURE	V	16	7	3760 9200 32
B0	5-7	ECF	10	8	3760 9190 39
B0	5-7	ECF	13	8	3760 9181 64
B0	5-7	ECF	16	8	3760 9185 84
B0	5-7	JET	13	6	3760 9181 74
B0	5-7	JET	16	6	3760 9181 84
B0	7AC	TAPER	10	8	3760 9057 50
B0	7AC	ECF	10	9	3760 9043 21
B0	7AC	ECF	13	9	3760 9040 90
B0	7AC	ECF	16	9	3760 9049 77
B0	7AC	ECF	10	6	3760 9043 28
B0	7AC	ECF	13	6	3760 9043 35
B0	7AC	ECF	16	6	3760 9049 79

 APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

 APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

BO (Double Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
BO	7AC	V	10	7	3760 9043 13
BO	7AC	V	13	7	3760 9033 48
BO	7AC	V	16	7	3760 9049 75
BO	7AC	JET	16	6	3702 7367 00
BO	6-8	ECF	10	8	3760 9190 40
BO	6-8	ECF	13	8	3760 9181 65
BO	6-8	ECF	16	8	3760 9185 85
BO	6-8	JET	13	6	3760 9181 75
BO	6-8	JET	16	6	3760 9181 85
BO	7ACF	ECF	10	9	3760 9043 22
BO	7ACF	ECF	13	9	3760 9040 89
BO	7ACF	ECF	16	9	3760 9049 76
BO	7ACF	ECF	10	6	3760 9043 29
BO	7ACF	ECF	13	6	3760 9043 36
BO	7ACF	ECF	16	6	3760 9049 78
BO	7ACF	V	10	7	3760 9043 14
BO	7ACF	V	13	7	3760 9038 66
BO	7ACF	V	16	7	37609 049 74
BO	KS(S++)	ECF	10	8	3702 6295 00
BO	KS(S++)	CF	13	8	8370 2300 24
BO	11AC	ECF	10	9	3760 9043 23
BO	11AC	ECF	13	9	3760 9040 87
BO	11AC	ECF	10	6	3760 9043 32
BO	11AC	ECF	13	6	3760 9043 39
BO	11AC	V	10	7	3760 9033 68
BO	11AC	V	13	7	3760 9035 37
BO	11AC	V	16	7	3760 9050 84
BO	11AC	TAPER	10	8	3760 9051 29
BO	8-9	ECF	10	8	3760 9190 41
BO	8-9	ECF	13	8	3760 9181 67
BO	8-9	ECF	16	8	3760 9185 87
BO	8-9	JET	13	6	3760 9181 77
BO	8-9	JET	16	6	3760 9181 87
BO	9	ECF	10	8	3760 9190 42
BO	9	ECF	13	8	3760 9181 68
BO	9	ECF	16	8	3760 9185 88
BO	9	JET	13	6	3760 9181 78
BO	9	JET	16	6	3760 9181 88
BO	10	ECF	10	8	3760 9190 43
BO	10	ECF	13	8	3760 9181 69
BO	10	ECF	16	8	3760 9185 89
BO	10	JET	13	6	3760 9181 79
BO	10	JET	16	6	3760 9181 89



APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.



APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.



APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

NO (Double Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
NO	2-4	ECF	10	10	3760 9190 44
NO	2-4	ECF	13	8	3760 9182 51
NO	2-4	ECF	13	10	3760 9182 61
NO	2-4	ECF	16	8	3760 9186 01
NO	2-4	ECF	16	10	3760 9186 11
NO	2-4	JET	13	8	3760 9182 71
NO	2-4	JET	16	8	3760 9182 81
NO	2-4	exFD	13	6	3760 9190 08
NO	4-6	ECF	10	10	3760 9190 45
NO	4-6	ECF	13	8	3760 9182 53
NO	4-6	ECF	13	10	3760 9182 63
NO	4-6	ECF WIDE	13	8	3760 9188 41
NO	4-6	ECF	16	8	3760 9186 03
NO	4-6	ECF	16	10	3760 9186 13
NO	4-6	JET	13	8	3760 9182 73
NO	4-6	JET	16	8	3760 9182 83
NO	4-6	exFD	13	6	3760 9189 23
NO	4-6	SAND	13	8	3760 9188 49
NO	4-6	SAND	16	8	3760 9188 50
NO	AZURE	ECF	10	10	3760 9200 76
NO	AZURE	ECF	13	10	3760 9200 76
NO	AZURE	ECF	13	8	3760 9200 77
NO	AZURE	ECF	16	10	3760 9200 78
NO	AZURE	ECF	16	8	3760 9200 79
NO	AZURE	exFD	13	6	3760 9200 80
NO	AZURE	JET	13	8	3760 9200 81
NO	AZURE	JET	16	8	3760 9200 82
NO	AZURE	TAPER	8	8	3760 9200 83
NO	AZURE	SAND	13	8	3760 9200 84
NO	AZURE	SAND	16	8	3760 9200 85
NO	AZURE	V	13	9	3760 9200 86
NO	AZURE	V	16	9	3760 9200 87
NO	5-7	ECF	10	10	3760 9190 46
NO	5-7	ECF	13	8	3760 9182 54
NO	5-7	ECF	13	10	3760 9182 64
NO	5-7	ECF	16	8	3760 9186 04
NO	5-7	ECF	16	10	3760 9186 14
NO	5-7	JET	13	8	3760 9182 74
NO	5-7	JET	16	8	3760 9182 84
NO	5-7	exFD	13	6	3760 9189 24
NO	5-7	SAND	13	8	3760 9188 51
NO	5-7	SAND	16	8	3760 9188 52
NO	7AC	TAPER	16	8	3760 9188 52
NO	7AC	ECF	10	9	3760 9036 04
NO	7AC	ECF	10	11	3760 9043 88

	APPLICATION 1 (GREEN) Soft to medium hard, abrasive and fractured to competent formations.		APPLICATION 2 (BLUE) Medium to hard, slightly abrasive, slightly fractured to competent formations.		APPLICATION 3 (RED) Hard to extremely hard, competent formations.
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NO (Double Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
NO	7AC	ECF	13	9	3760 9035 29
NO	7AC	ECF	13	11	3760 9039 83
NO	7AC	ECF	16	8	3760 9050 41
NO	7AC	V	10	9	3760 9036 54
NO	7AC	V	13	9	3760 9033 50
NO	7AC	V	16	9	3760 9049 47
NO	6-8	ECF	10	10	3760 9190 47
NO	6-8	ECF	13	8	3760 9182 55
NO	6-8	ECF	13	10	3760 9182 65
NO	6-8	ECF	16	8	3760 9186 05
NO	6-8	ECF	16	10	3760 9186 15
NO	6-8	JET	13	8	3760 9182 75
NO	6-8	JET	16	8	3760 9182 85
NO	6-8	exFD	13	6	3760 9189 25
NO	7ACF	ECF	10	11	3760 9043 89
NO	7ACF	ECF	10	8	3760 9043 97
NO	7ACF	ECF	13	11	3760 9038 07
NO	7ACF	ECF	13	8	3760 904914
NO	7ACF	V	10	9	3760 9044 06
NO	7ACF	V	13	9	3760 9038 23
NO	7ACF	V	16	9	3760 9049 64
NO	7ACF	exFD	13	6	3760 9190 91
NO	KS(S++)	CF	10	10	8370 2300 31
NO	KS(S++)	CF	13	10	8370 2300 25
NO	KS(S++)	CF	16	10	3702 6789 00
NO	11AC	ECF	10	11	3760 9038 12
NO	11AC	ECF	10	9	3760 9036 06
NO	11AC	ECF	13	11	3760 9037 72
NO	11AC	ECF	13	9	3760 9035 49
NO	11AC	ECF	16	11	3760 9049 36
NO	11AC	ECF	16	9	3760 9048 41
NO	11AC	V	10	9	3760 9036 20
NO	11AC	V	13	9	3760 9033 99
NO	11AC	V	16	9	3760 9049 62
NO	11AC	JET	16	8	3760 9054 61
NO	11AC	exFD	13	6	3760 9109 07
NO	11AC	TAPER	8	8	3760 9042 53
NO	8-9	ECF	10	10	3760 9190 48
NO	8-9	ECF	13	10	3760 9182 67
NO	8-9	ECF	13	8	3760 9182 57
NO	8-9	ECF	16	10	3760 9186 17
NO	8-9	ECF	16	8	3760 9186 07
NO	8-9	JET	13	8	3760 9182 77

 APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

 APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

NO (Double Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
NO	8-9	JET	16	8	3760 9182 87
NO	8-9	exFD	13	6	3760 9189 26
NO	9	ECF	10	10	3760 9190 49
NO	9	ECF	13	10	3760 9182 68
NO	9	ECF	13	8	3760 9182 58
NO	9	ECF	16	10	3760 9186 18
NO	9	ECF	16	8	3760 9186 08
NO	9	exFD	13	6	3760 9189 27
NO	9	JET	13	8	3760 9182 78
NO	9	JET	16	8	3760 9182 88
NO	10	ECF	10	10	3760 9190 50
NO	10	ECF	13	10	3760 9182 69
NO	10	ECF	13	8	3760 9182 59
NO	10	ECF	16	10	3760 9186 19
NO	10	ECF	16	8	3760 9186 09
NO	10	exFD	13	6	3760 9189 21
NO	10	JET	13	8	3760 9182 79
NO	10	JET	16	8	3760 9182 89

NO (Double Tube Oversize 0.032")

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
NO OS	2-4	ECF	13	8	3760 9187 01
NO OS	2-4	ECF	16	8	3760 9187 11
NO OS	4-6	ECF	13	8	3760 9187 03
NO OS	4-6	ECF	16	8	3760 9187 13
NO OS	AZURE	ECF	13	8	3760 9200 88
NO OS	AZURE	ECF	16	8	3760 9200 89
NO OS	5-7	ECF	13	8	3760 9187 04
NO OS	5-7	ECF	16	8	3760 9187 14
NO OS	7AC	ECF	10	8	3760 9050 02
NO OS	6-8	ECF	13	8	3760 9187 05
NO OS	6-8	ECF	16	8	3760 9187 15
NO OS	11AC	V	10	9	3760 9052 68
NO OS	11AC	ECF	10	8	3760 9050 03
NO OS	8-9	ECF	13	8	3760 9187 07
NO OS	8-9	ECF	16	8	3760 9187 17
NO OS	9	ECF	13	8	3760 9187 08
NO OS	9	ECF	16	8	3760 91 87 18
NO OS	10	ECF	13	8	3760 91 87 09
NO OS	10	ECF	16	8	3760 91 87 19

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

NO2 (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
N02	2-4	ECF	13	10	3760 91 83 11
N02	2-4	ECF	13	8	3760 91 83 01
N02	2-4	ECF	16	10	3760 91 86 31
N02	2-4	ECF	16	8	3760 91 86 21
N02	2-4	JET	13	8	3760 91 83 21
N02	2-4	JET	16	8	3760 91 83 31
N02	4-6	ECF	13	10	3760 91 83 13
N02	4-6	ECF	13	8	3760 91 83 03
N02	4-6	ECF	16	10	3760 91 86 33
N02	4-6	ECF	16	8	3760 91 86 23
N02	4-6	JET	13	8	3760 91 83 23
N02	4-6	JET	16	8	3760 91 83 33
N02	AZURE	ECF	13	10	3760 9200 90
N02	AZURE	ECF	13	8	3760 9200 91
N02	AZURE	ECF	16	10	3760 9200 92
N02	AZURE	ECF	16	8	3760 9200 93
N02	AZURE	JET	13	8	3760 9200 94
N02	AZURE	JET	16	8	3760 9200 95
N02	AZURE	TAPER	8	8	3760 9200 96
N02	5-7	ECF	13	10	3760 9183 14
N02	5-7	ECF	13	8	3760 9183 04
N02	5-7	ECF	16	10	3760 9186 34
N02	5-7	ECF	16	8	3760 9186 24
N02	5-7	JET	13	8	3760 9183 24
N02	5-7	JET	16	8	3760 9183 34
N02	7AC	ECF	10	11	3760 9044 50
N02	7AC	ECF	13	11	3760 9041 28
N02	7AC	V	10	9	3760 9044 65
N02	7AC	V	13	9	3760 9034 15
N02	7AC	ECF	10	8	3760 9044 58
N02	7AC	ECF	13	8	3760 9035 05
N02	6-8	ECF	13	10	3760 9183 15
N02	6-8	ECF	13	8	3760 9183 05
N02	6-8	ECF	16	10	3760 9186 35
N02	6-8	ECF	16	8	3760 9186 25
N02	6-8	JET	13	8	3760 9183 25
N02	6-8	JET	16	8	3760 9183 35
N02	7ACF	ECF	10	11	3760 9044 51
N02	7ACF	ECF	13	11	3760 9041 29
N02	7ACF	V	10	9	3760 9044 66
N02	7ACF	V	13	9	3760 9040 21
N02	7ACF	ECF	10	8	3760 9044 59
N02	7ACF	ECF	13	8	3760 9040 18
N02	11AC	ECF	10	11	3760 9044 54
N02	11AC	ECF	13	11	3760 9041 31
N02	11AC	V	10	9	3760 9044 69

 APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

 APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

NO2 (Double Tube Thin Wall) Continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
N02	11AC	V	13	9	3760 9035 24
N02	11AC	ECF	10	8	3760 9044 62
N02	11AC	ECFWIDE	13	8	3760 9042 58
N02	11AC	ECF	13	8	3760 9047 35
N02	8-9	ECF	13	10	3760 9183 17
N02	8-9	ECF	13	8	3760 9183 07
N02	8-9	ECF	16	10	3760 9186 37
N02	8-9	ECF	16	8	3760 9186 27
N02	8-9	JET	13	8	3760 9183 27
N02	8-9	JET	16	8	3760 9183 37
N02	9	ECF	13	10	3760 9183 18
N02	9	ECF	13	8	3760 9183 08
N02	9	ECF	16	10	3760 9186 38
N02	9	ECF	16	8	3760 9186 28
N02	9	JET	13	8	3760 9183 28
N02	9	JET	16	8	3760 9183 38
N02	10	ECF	13	10	3760 9183 19
N02	10	ECF	13	8	3760 9183 09
N02	10	ECF	16	10	3760 9186 39
N02	10	ECF	16	8	3760 9186 29
N02	10	JET	13	8	3760 9183 29
N02	10	JET	16	8	3760 9183 39

NO2 (Double Tube Oversize 3.032")

Size	Matrix	Product Line	Crown Height	Waterways	Part Number
N02 OS	2-4	ECF	13	8	3760 9187 81
N02 OS	2-4	ECF	16	8	3760 9187 91
N02 OS	2-4	JET	16	8	3760 9188 01
N02 OS	4-6	ECF	13	8	3760 9187 83
N02 OS	4-6	ECF	16	8	3760 9187 93
N02 OS	4-6	JET	16	8	3760 9188 03
N02 OS	AZURE	JET	16	8	3760 9200 97
N02 OS	AZURE	ECF	13	8	3760 9200 98
N02 OS	AZURE	ECF	16	8	3760 9200 99
N02 OS	5-7	ECF	13	8	3760 9187 84
N02 OS	5-7	ECF	16	8	3760 9187 94
N02 OS	5-7	JET	16	8	3760 9188 04
N02 OS	7AC	V	10	9	37609 039 74
N02 OS	7AC	V	13	9	3760 9034 41
N02 OS	6-8	ECF	13	8	3760 9187 85
N02 OS	6-8	ECF	16	8	3760 9187 95
N02 OS	6-8	JET	16	8	3760 9188 05
N02 OS	11AC	ECF	10	10	3760 9044 10
N02 OS	8-9	ECF	13	8	3760 9187 87

 APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

 APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

NO2 (Double Tube Oversize 3.032") continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
N02 OS	8-9	ECF	16	8	3760 9187 97
N02 OS	8-9	JET	16	8	3760 9188 07
N02 OS	9	ECF	13	8	3760 9187 88
N02 OS	9	ECF	16	8	3760 9187 98
N02 OS	9	JET	16	8	3760 9188 08
N02 OS	10	ECF	13	8	3760 9187 89
N02 OS	10	ECF	16	8	3760 9187 99
N02 OS	10	JET	16	8	3760 9188 09

NO3 (Triple Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
N03	2-4	ECF	13	10	3760 9183 51
N03	2-4	ECF	13	8	3760 9183 41
N03	2-4	exFD	13	6	3760 9190 08
N03	2-4	JET	13	8	3760 9183 61
N03	2-4	JET	16	8	3760 9183 71
N03	4-6	ECF	13	10	3760 9183 53
N03	4-6	ECF	13	8	3760 9183 43
N03	4-6	exFD	13	6	3760 9189 23
N03	4-6	JET	13	8	3760 9183 63
N03	4-6	JET	16	8	3760 9183 73
N03	AZURE	ECF WIDE	16	10	3760 9201 00
N03	AZURE	exFD	13	6	3760 9201 01
N03	AZURE	JET	13	8	3760 9201 02
N03	AZURE	JET	16	8	3760 9201 03
N03	AZURE	ECF WIDE	13	10	3760 9201 04
N03	5-7	ECF	13	10	3760 9183 54
N03	5-7	ECF	13	8	3760 9183 44
N03	5-7	exFD	13	6	3760 9189 24
N03	5-7	JET	13	8	3760 9183 64
N03	5-7	JET	16	8	3760 9183 74
N03	7AC	exFD	13	6	3760 9190 13
N03	7AC	ECF	10	8	3760 9044 79
N03	7AC	ECF	13	8	3760 9044 22
N03	6-8	ECF	13	10	3760 9183 55
N03	6-8	ECF	13	8	3760 9183 45
N03	6-8	exFD	13	6	3760 9189 31
N03	6-8	JET	13	8	3760 9183 65
N03	6-8	JET	16	8	3760 9183 75
N03	7ACF	exFD	13	6	3760 9190 14
N03	7ACF	ECF	10	8	3760 9044 80
N03	7ACF	ECF	13	8	3760 9041 86
N03	11AC	exFD	13	6	3760 9190 11
N03	11AC	ECF	10	8	3760 9044 83
N03	11AC	ECF	13	8	3760 9041 84

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

NO3 (Triple Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
N03	8-9	ECF	13	10	3760 9183 57
N03	8-9	ECF	13	8	3760 9183 47
N03	8-9	exFD	13	6	3760 9189 32
N03	8-9	JET	13	8	3760 9183 67
N03	8-9	JET	16	8	3760 9183 77
N03	9	ECF	13	10	3760 9183 58
N03	9	ECF	13	8	3760 9 83 48
N03	9	exFD	13	6	3760 9189 33
N03	9	JET	13	8	3760 9183 68
N03	9	JET	16	8	3760 9183 78
N03	10	ECF	13	10	3760 91 83 59
N03	10	ECF	13	8	3760 91 83 49
N03	10	exFD	13	6	3760 91 89 28
N03	10	JET	13	8	3760 91 83 69
N03	10	JET	16	8	3760 91 83 79

NO3 (Triple Tube Oversize 3.032")

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
N03 OS	2-4	ECF	13	8	3760 9188 11
N03 OS	4-6	ECF	13	8	3760 9188 13
N03 OS	AZURE	ECF	13	8	3760 9201 05
N03 OS	5-7	ECF	13	8	3760 9188 14
N03 OS	6-8	ECF	13	8	3760 9188 15
N03 OS	8-9	ECF	13	8	3760 9188 17
N03 OS	9	ECF	13	8	3760 9188 18
N03 OS	10	ECF	13	8	3760 9188 19

HO (Double Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO	2-4	ECF	10	10	3760 9188 81
HO	2-4	ECF	13	10	3760 9184 11
HO	2-4	ECF	16	10	3760 9186 61
HO	2-4	exFD	13	8	3760 9189 57
HO	2-4	JET	13	10	3760 9184 21
HO	2-4	JET	16	10	3760 9184 31
HO	4-6	ECF	10	10	3760 9188 82
HO	4-6	ECF	13	10	3760 9184 13
HO	4-6	ECF WIDE	13	10	3760 9188 42
HO	4-6	ECF	16	10	3760 9186 63
HO	4-6	exFD	13	8	3760 9189 65
HO	4-6	JET	13	10	3760 9184 23
HO	4-6	JET	16	10	3760 9184 33
HO	4-6	SAND	13	8	3760 9188 44

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

HO (Double Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO	4-6	SAND	16	8	3760 9188 46
HO	AZURE	ECF	10	10	3760 9200 39
HO	AZURE	ECF	13	10	3760 9200 40
HO	AZURE	ECF	16	10	3760 9200 41
HO	AZURE	exFD	13	8	3760 9200 42
HO	AZURE	JET	13	10	3760 9200 43
HO	AZURE	JET	16	10	3760 9200 44
HO	AZURE	TAPER	10	10	3760 9200 45
HO	AZURE	V	13	11	3760 9200 46
HO	AZURE	SAND	13	8	3760 9200 47
HO	AZURE	SAND	16	8	3760 9200 48
HO	AZURE	ECF WIDE	13	10	3760 9200 49
HO	AZURE	ECF WIDE	16	10	3760 9200 50
HO	5-7	ECF	10	10	3760 9188 83
HO	5-7	ECF	13	10	3760 9184 14
HO	5-7	ECF WIDE	13	10	3760 9188 43
HO	5-7	ECF	16	10	3760 9186 64
HO	5-7	exFD	13	8	3760 9189 66
HO	5-7	JET	13	10	3760 9184 24
HO	5-7	JET	16	10	3760 9184 34
HO	5-7	SAND	13	8	3760 9188 45
HO	5-7	SAND	16	8	3760 9188 47
HO	7AC	TAPER	10	10	3760 9052 29
HO	7AC	ECF	10	13	3760 9044 96
HO	7AC	ECF	10	10	3760 9045 05
HO	7AC	ECF	13	13	3760 9041 16
HO	7AC	ECF	13	10	3760 9041 22
HO	7AC	V	10	11	3760 9045 09
HO	7AC	V	13	11	3760 9033 63
HO	6-8	ECF	10	10	3760 9188 84
HO	6-8	ECF	13	10	3760 9184 15
HO	6-8	ECF	16	10	3760 9186 65
HO	6-8	exFD	13	8	3760 9189 67
HO	6-8	JET	13	10	3760 9184 25
HO	6-8	JET	16	10	3760 9184 35
HO	6-8	SAND	13	8	3760 9190 26
HO	7ACF	ECF	10	13	3760 9044 97
HO	7ACF	ECF	10	10	3760 9045 06
HO	7ACF	ECF	13	13	3760 9041 17
HO	7ACF	ECF	13	10	3760 9049 15

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

HO (Double Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO	7ACF	exFD	13	8	3760 9189 88
HO	7ACF	V	10	11	3760 9045 10
HO	7ACF	V	13	11	3760 9038 24
HO	7ACF	TAPER	10	10	3760 9057 60
HO	KS(S++)	ECF	10	12	3702 6115 00
HO	KS(S++)	exFD	10	8	3760 9189 90
HO	11AC	ECF	10	13	3760 9045 00
HO	11AC	ECF	10	10	3760 9034 99
HO	11AC	ECF	13	13	3760 9041 19
HO	11AC	ECF	13	10	3760 9041 23
HO	11AC	ECF WIDE	13	10	3760 905726
HO	11AC	ECF	16	10	3760 9048 38
HO	11AC	ECF	16	8	3760 9048 39
HO	11AC	exFD	13	8	3760 9189 87
HO	11AC	V	10	11	3760 9045 12
HO	11AC	V	13	11	3760 9035 19
HO	11AC	SAND	10	10	3760 9049 96
HO	11AC	TAPER	10	10	3760 9056 12
HO	8-9	ECF	10	10	3760 9188 85
HO	8-9	ECF	13	10	3760 9184 17
HO	8-9	ECF	13	10	3760 9188 78
HO	8-9	ECF WIDE	13	10	3760 9188 55
HO	8-9	ECF	16	10	3760 9186 67
HO	8-9	exFD	13	8	3760 9189 68
HO	8-9	JET	13	10	3760 9184 27
HO	8-9	JET	16	10	3760 9184 37
HO	8-9	SAND	13	8	3760 9190 27
HO	9	ECF	10	10	3760 9188 86
HO	9	ECF	13	10	3760 9184 18
HO	9	ECF	16	10	3760 9186 68
HO	9	exFD	13	8	3760 9189 89
HO	9	JET	13	10	3760 9184 28
HO	9	JET	16	10	3760 9184 38
HO	10	ECF	10	10	3760 9188 87
HO	10	ECF	13	10	3760 9184 19
HO	10	ECF	16	10	3760 9186 69
HO	10	exFD	13	8	3760 9189 56
HO	10	JET	13	10	3760 9184 29
HO	10	JET	16	10	3760 9184 39

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

HO (Double Tube Oversize 3.830")

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO OS	2-4	ECF	13	10	3760 9184 51
HO OS	2-4	ECF	16	10	3760 9186 71
HO OS	2-4	exFD	13	8	3760 9189 59
HO OS	2-4	JET	13	10	3760 9184 61
HO OS	2-4	JET	16	10	3760 9184 71
HO OS	4-6	ECF	13	10	3760 9184 53
HO OS	4-6	ECF	16	10	3760 9186 73
HO OS	4-6	exFD	13	8	3760 9189 60
HO OS	4-6	JET	13	10	3760 9184 63
HO OS	4-6	JET	16	10	3760 9184 73
HO OS	AZURE	ECF	13	10	3760 9200 51
HO OS	AZURE	ECF	16	10	3760 9200 52
HO OS	AZURE	exFD	13	8	3760 9200 53
HO OS	AZURE	JET	13	10	3760 9200 54
HO OS	AZURE	JET	16	10	3760 9200 55
HO OS	5-7	ECF	13	10	3760 9184 54
HO OS	5-7	ECF	16	10	3760 9186 74
HO OS	5-7	exFD	13	8	3760 9189 61
HO OS	5-7	JET	13	10	3760 9184 64
HO OS	5-7	JET	16	10	3760 9184 74
HO OS	7AC	ECF	13	10	3760 9050 00
HO OS	6-8	ECF	13	10	3760 9184 55
HO OS	6-8	ECF	16	10	3760 9186 75
HO OS	6-8	exFD	13	8	3760 9189 62
HO OS	6-8	JET	13	10	3760 9184 65
HO OS	6-8	JET	16	10	3760 9184 75
HO OS	7ACF	ECF	10	8	3760 9039 07
HO OS	8-9	ECF	13	10	3760 9184 57
HO OS	8-9	ECF	16	10	3760 9186 77
HO OS	8-9	FD	13	10	3760 9184 87
HO OS	8-9	JET	13	10	3760 91 84 67
HO OS	8-9	JET	16	10	3760 9184 77
HO OS	9	ECF	13	10	3760 9184 58
HO OS	9	ECF	16	10	3760 9186 78
HO OS	9	exFD	13	8	3760 9189 64
HO OS	9	JET	13	10	3760 9184 68
HO OS	9	JET	16	10	3760 9184 78
HO OS	10	ECF	13	10	3760 9184 59
HO OS	10	ECF	16	10	3760 9186 79
HO OS	10	FD	13	10	3760 9184 89
HO OS	10	JET	13	10	3760 9184 69
HO OS	10	JET	16	10	3760 9184 79



APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.



APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.



APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

HO3 (Triple Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
H03	2-4	ECF	13	10	3760 9184 91
H03	2-4	ECF	16	10	3760 9186 81
H03	2-4	exFD	13	8	3760 9189 71
H03	2-4	JET	13	13	3760 9185 01
H03	2-4	JET	16	16	3760 9185 11
H03	2-4	SAND	13	8	3760 9174 10
H03	2-4	SAND	16	8	3760 9174 18
H03	4-6	ECF	13	10	3760 9184 93
H03	4-6	ECF	16	10	3760 9186 83
H03	4-6	exFD	13	8	3760 9189 72
H03	4-6	JET	13	13	3760 9185 03
H03	4-6	JET	16	16	3760 9185 13
H03	4-6	SAND	13	8	3760 9174 11
H03	4-6	SAND	16	8	3760 9174 19
H03	AZURE	ECF	13	10	3760 9200 56
H03	AZURE	ECF	16	10	3760 9200 57
H03	AZURE	exFD	13	8	3760 9200 58
H03	AZURE	JET	13	13	3760 9200 60
H03	AZURE	JET	16	16	3760 9200 61
H03	AZURE	SAND	13	8	3760 9200 62
H03	AZURE	SAND	16	8	3760 9200 63
H03	5-7	ECF	13	10	3760 9184 94
H03	5-7	ECF	16	10	3760 9186 84
H03	5-7	exFD	13	8	3760 9189 73
H03	5-7	JET	13	13	3760 9185 04
H03	5-7	JET	16	16	3760 9185 14
H03	5-7	SAND	13	8	3760 9174 01
H03	5-7	SAND	16	8	3760 9174 02
H03	7AC	exFD	10	8	3760 9189 93
H03	7AC	exFD	13	8	3760 9189 94
H03	7AC	V	10	11	3760 9045 35
H03	7AC	V	13	11	3760 9037 78
H03	7AC	ECF	10	10	3760 9045 25
H03	7AC	ECF	13	10	3760 9041 57
H03	7AC	SAND	13	8	3760 9174 16
H03	7AC	SAND	16	8	3760 9174 24
H03	6-8	ECF	13	10	3760 9184 95
H03	6-8	ECF	16	10	3760 9186 85
H03	6-8	exFD	13	8	3760 9189 74
H03	6-8	JET	13	13	3760 9185 05
H03	6-8	JET	16	16	3760 9185 15
H03	6-8	SAND	13	8	3760 9174 12
H03	6-8	SAND	16	8	3760 9174 20
H03	7ACF	exFD	10	8	3760 9189 95
H03	7ACF	exFD	13	8	3760 9189 96

	APPLICATION 1 (GREEN) Soft to medium hard, abrasive and fractured to competent formations.		APPLICATION 2 (BLUE) Medium to hard, slightly abrasive, slightly fractured to competent formations.		APPLICATION 3 (RED) Hard to extremely hard, competent formations.
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HO3 (Triple Tube) continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO3	7ACF	V	10	11	3760 9045 36
HO3	7ACF	V	13	11	3760 9045 43
HO3	7ACF	ECF	10	10	3760 9045 26
HO3	7ACF	ECF	13	12	3760 9041 56
HO3	11AC	exFD	10	8	3760 9189 91
HO3	11AC	exFD	13	8	3760 9189 92
HO3	11AC	V	10	11	3760 9045 39
HO3	11AC	V	13	11	3760 904546
HO3	11AC	ECF	10	10	3760 9045 29
HO3	11AC	ECF	13	13	3760 9046 78
HO3	11AC	ECF	13	13	3760 9041 54
HO3	11AC	SAND	13	8	3760 9174 17
HO3	11AC	SAND	16	8	3760 9174 25
HO3	8-9	ECF	13	10	3760 9184 97
HO3	8-9	ECF	16	10	3760 9186 87
HO3	8-9	exFD	13	8	3760 9189 75
HO3	8-9	JET	13	13	3760 9185 07
HO3	8-9	JET	16	16	3760 9185 17
HO3	8-9	SAND	13	8	3760 9174 13
HO3	8-9	SAND	16	8	3760 9174 21
HO3	9	ECF	13	10	3760 9184 98
HO3	9	ECF	16	10	3760 9186 88
HO3	9	exFD	13	8	3760 9189 76
HO3	9	JET	13	13	3760 9185 08
HO3	9	JET	16	16	3760 9185 18
HO3	9	SAND	13	8	3760 9174 14
HO3	9	SAND	16	8	3760 9174 22
HO3	10	ECF	13	10	3760 9184 99
HO3	10	ECF	16	10	3760 9186 89
HO3	10	exFD	13	8	3760 9189 70
HO3	10	JET	13	13	3760 9185 09
HO3	10	JET	16	16	3760 9185 19
HO3	10	SAND	13	8	3760 9174 15
HO3	10	SAND	16	8	3760 9174 23

HO3 (Triple Tube Oversize 3.830")

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO3 OS	2-4	ECF	13	10	3760 9188 21
HO3 OS	4-6	ECF	13	10	3760 9188 23
HO3 OS	AZURE	ECF	13	10	3760 9200 67
HO3 OS	5-7	ECF	13	10	3760 9188 24
HO3 OS	6-8	ECF	13	10	3760 9188 25
HO3 OS	8-9	ECF	13	10	3760 9188 27
HO3 OS	9	ECF	13	10	3760 9188 28
HO3 OS	10	ECF	13	10	3760 9188 29

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

HO3 DT (Special - Double Tube Application)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HO3 DT	2-4	ECF	13	10	3760 9188 94
HO3 DT	2-4	exFD	13	8	3760 9189 48
HO3 DT	4-6	ECF	13	10	3760 9188 95
HO3 DT	4-6	exFD	13	8	3760 9189 50
HO3 DT	AZURE	ECF	10	10	3760 9200 64
HO3 DT	AZURE	ECF	13	10	3760 9200 65
HO3 DT	AZURE	exFD	13	8	3760 9200 66
HO3 DT	7AC	exFD	13	8	3760 9190 00
HO3 DT	7AC	ECF	10	10	3760 9036 42
HO3 DT	7AC	ECF	13	10	3760 9041 75
HO3 DT	6-8	ECF	13	10	3760 9188 96
HO3 DT	6-8	exFD	13	8	3760 9189 51
HO3 DT	7ACF	exFD	13	8	3760 9190 01
HO3 DT	7ACF	ECF	13	10	3760 9041 74
HO3 DT	11AC	exFD	13	8	3760 9189 99
HO3 DT	11AC	ECF	13	10	3760 9041 72

HOTT (Triple Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HOTT	4-6	exFD	10	8	3760 9190 05
HOTT	AZURE	exFD	10	8	3760 9200 68
HOTT	7ACF	exFD	10	8	3760 9190 06
HOTT	11AC	exFD	10	8	3760 9190 04

HOTT (Triple Tube Oversize 3.830")

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HOTT OS	2-4	exFD	13	8	3760 9189 78
HOTT OS	2-4	JET	16	10	3760 9188 31
HOTT OS	4-6	exFD	13	8	3760 9189 79
HOTT OS	4-6	JET	16	10	3760 9188 33
HOTT OS	AZURE	exFD	13	8	3760 9200 69
HOTT OS	5-7	exFD	13	8	3760 9189 80
HOTT OS	5-7	JET	16	10	3760 9188 34
HOTT OS	6-8	exFD	13	8	3760 9189 81
HOTT OS	6-8	JET	16	10	3760 9188 35
HOTT OS	11AC	exFD	10	8	3760 9190 03
HOTT OS	8-9	exFD	13	8	3760 9189 82
HOTT OS	8-9	JET	16	10	3760 9188 37
HOTT OS	9	exFD	13	8	3760 9189 83
HOTT OS	9	JET	16	10	3760 9188 38
HOTT OS	10	exFD	13	8	3760 9189 77
HOTT OS	10	JET	16	10	3760 9188 39

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

PO (Double Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
PO	2-4	ECF	10	12	3760 9185 41
PO	2-4	exFD	10	10	3760 9189 35
PO	4-6	ECF	10	12	3760 9185 43
PO	4-6	exFD	10	10	3760 9189 36
PO	AZURE	ECF	10	12	3760 9201 08
PO	AZURE	exFD	10	10	3760 9201 09
PO	AZURE	TAPER	10	12	3760 9201 10
PO	5-7	ECF	10	12	3760 9185 44
PO	5-7	exFD	10	10	3760 9189 37
PO	7AC	ECF	10	12	3760 9042 05
PO	7AC	exFD	10	10	3760 9190 16
PO	6-8	ECF	10	12	3760 9185 45
PO	6-8	exFD	10	10	3760 9189 38
PO	6-8	TAPER	10	12	3760 9057 59
PO	7ACF	ECF	10	10	3760 9040 15
PO	7ACF	ECF WIDE	10	8	3760 9049 45
PO	7ACF	ECF WIDE	13	8	3760 9170 99
PO	7ACF	TAPER	10	12	3760 9057 58
PO	11AC	ECF	10	10	3760 9040 17
PO	11AC	ECF	10	12	3760 9042 02
PO	8-9	ECF	10	12	3760 9185 47
PO	8-9	FD	10	8	3760 9185 57
PO	9	ECF	10	12	3760 9185 48
PO	9	exFD	10	10	3760 9189 40
PO	10	ECF	10	12	3760 9185 49
PO	10	FD	10	8	3760 9185 59

P03 (Triple Tube)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
P03	2-4	ECF	10	12	3760 9185 61
P03	2-4	exFD	10	10	3760 9189 42
P03	2-4	SAND	13	10	3760 9174 26
P03	4-6	ECF	10	12	3760 9185 63
P03	4-6	exFD	10	10	3760 9189 43
P03	4-6	SAND	13	10	3760 9174 27
P03	AZURE	ECF	10	12	3760 9201 11
P03	AZURE	exFD	10	10	3760 9201 12
P03	AZURE	SAND	13	10	3760 9201 13
P03	5-7	ECF	10	12	3760 9185 64
P03	5-7	exFD	10	10	3760 9189 44
P03	5-7	SAND	13	10	3760 9174 28
P03	7AC	exFD	10	10	3760 9190 18
P03	7AC	ECF	10	12	3760 9045 63
P03	7AC	SAND	13	10	3760 9174 33
P03	6-8	ECF	10	12	3760 9185 65
P03	6-8	exFD	10	10	3760 9189 45

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

PO3 (Triple Tube)continued

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
P03	6-8	SAND	13	10	3760917429
P03	7ACF	ECF	10	12	3760904564
P03	11AC	ECF	10	12	3760904567
P03	11AC	exFD	10	10	3760 91 90 17
P03	11AC	SAND	13	10	3760917434
P03	8-9	ECF	10	12	3760 91 85 67
P03	8-9	exFD	10	10	3760 91 89 46
P03	8-9	SAND	13	10	3760917430
P03	9	ECF	10	12	3760 91 85 68
P03	9	exFD	10	10	3760 91 89 47
P03	9	SAND	13	10	3760917431
P03	10	ECF	10	12	3760 91 85 69
P03	10	exFD	10	10	3760 91 89 41

AGM/ATW (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
AGM/ATW	2-4	ECF	13	8	3760 9187 41
AGM/ATW	2-4	JET	13	4	3760 9188 64
AGM/ATW	2-4	JET	16	4	3760 9187 51
AGM/ATW	4-6	ECF	13	8	3760 9187 43
AGM/ATW	4-6	JET	13	4	3760 9188 65
AGM/ATW	4-6	JET	16	4	3760 9187 53
AGM/ATW	AZURE	ECF	13	8	3760 9200 14
AGM/ATW	AZURE	JET	13	4	3760 9200 15
AGM/ATW	AZURE	JET	16	4	3760 9200 16
AGM/ATW	5-7	ECF	13	8	3760 9187 44
AGM/ATW	5-7	JET	13	4	3760 9188 66
AGM/ATW	5-7	JET	16	4	3760 9187 54
AGM/ATW	7AC	V	10	7	3760 9037 98
AGM/ATW	7AC	V	13	7	3760 9042 98
AGM/ATW	6-8	ECF	13	8	3760 9187 45
AGM/ATW	6-8	JET	13	4	3760 9188 62
AGM/ATW	6-8	JET	16	4	3760 9187 55
AGM/ATW	7ACF	V	13	7	3760 9039 42
AGM/ATW	11AC	V	10	7	3760 9042 97
AGM/ATW	11AC	V	13	7	3760 9043 01
AGM/ATW	8-9	ECF	13	8	3760 9187 47
AGM/ATW	8-9	JET	13	4	3760 9188 67
AGM/ATW	8-9	JET	16	4	3760 9187 57
AGM/ATW	9	ECF	13	8	3760 9187 48
AGM/ATW	9	JET	13	4	3760 9188 68
AGM/ATW	9	JET	16	4	3760 9187 58
AGM/ATW	10	ECF	13	8	3760 9187 49
AGM/ATW	10	JET	13	4	3760 9188 69
AGM/ATW	10	JET	16	4	3760 9187 59

	APPLICATION 1 (GREEN) Soft to medium hard, abrasive and fractured to competent formations.		APPLICATION 2 (BLUE) Medium to hard, slightly abrasive, slightly fractured to competent formations.		APPLICATION 3 (RED) Hard to extremely hard, competent formations.
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AOTK (Double Tube Thin Kerf)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
AOTK	2-4	ECF	13	6	3760 9181 41
AOTK	2-4	JET	13	4	3760 9188 71
AOTK	2-4	JET	16	4	3760 9181 51
AOTK	4-6	ECF	13	6	3760 9181 43
AOTK	4-6	JET	13	4	3760 9188 72
AOTK	4-6	JET	16	4	3760 9181 53
AOTK	AZURE	ECF	13	6	3760 9200 19
AOTK	AZURE	JET	13	4	3760 9200 20
AOTK	AZURE	JET	16	4	3760 9200 21
AOTK	5-7	ECF	13	6	3760 9181 44
AOTK	5-7	JET	13	4	3760 9188 73
AOTK	5-7	JET	16	4	3760 9181 54
AOTK	7AC	V	10	7	3760 9039 85
AOTK	7AC	V	13	7	3760 9042 85
AOTK	6-8	ECF	13	6	3760 9181 45
AOTK	6-8	JET	13	4	3760 9188 74
AOTK	6-8	JET	16	4	3760 9181 55
AOTK	7ACF	V	13	7	3760 9038 62
AOTK	KS(S++)	CF	13	6	3702 5840 00
AOTK	11AC	V	10	7	3760 9042 84
AOTK	11AC	V	13	7	3760 9039 06
AOTK	8-9	ECF	13	6	3760 9181 47
AOTK	8-9	JET	13	4	3760 9188 75
AOTK	8-9	JET	16	4	3760 9181 57
AOTK	9	ECF	13	6	3760 9181 48
AOTK	9	JET	13	4	3760 9188 76
AOTK	9	JET	16	4	3760 9181 58
AOTK	10	ECF	13	6	3760 9181 49
AOTK	10	JET	13	4	3760 9188 77
AOTK	10	JET	16	4	3760 9181 59

BGM/BTW (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
BGM/BTW	2-4	ECF	13	8	3760 9181 91
BGM/BTW	2-4	ECF	16	8	3760 9185 91
BGM/BTW	2-4	JET	13	6	3760 9182 01
BGM/BTW	2-4	JET	16	6	3760 9182 11
BGM/BTW	4-6	ECF	13	8	3760 9181 93
BGM/BTW	4-6	ECF	16	8	3760 9185 93
BGM/BTW	4-6	JET	13	6	3760 9182 03
BGM/BTW	4-6	JET	16	6	3760 9182 13
BGM/BTW	AZURE	ECF	13	8	3760 9200 23
BGM/BTW	AZURE	ECF	16	8	3760 9200 24
BGM/BTW	AZURE	JET	13	6	3760 9200 25
BGM/BTW	AZURE	JET	16	6	3760 9200 26

 **APPLICATION 1 (GREEN)**
Soft to medium hard, abrasive and fractured to competent formations.

 **APPLICATION 2 (BLUE)**
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 **APPLICATION 3 (RED)**
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

BGM/BTW (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
BGM/BTW	5-7	ECF	13	8	3760 9181 94
BGM/BTW	5-7	ECF	16	8	3760 9185 94
BGM/BTW	5-7	JET	13	6	3760 9182 04
BGM/BTW	5-7	JET	16	6	3760 9182 14
BGM/BTW	7AC	ECF	13	9	3760 9055 07
BGM/BTW	6-8	ECF	13	8	3760 9181 95
BGM/BTW	6-8	ECF	16	8	3760 9185 95
BGM/BTW	6-8	JET	13	6	3760 9182 05
BGM/BTW	6-8	JET	16	6	3760 9182 15
BGM/BTW	KS(S++)	CF	13	10	8370 2300 28
BGM/BTW	11AC	ECF WIDE	13	6	3760 9057 32
BGM/BTW	11AC	ECF	13	9	3760 9047 03
BGM/BTW	11AC	V	13	7	3760 9057 41
BGM/BTW	8-9	ECF	13	8	3760 9181 97
BGM/BTW	8-9	ECF	16	8	3760 9185 97
BGM/BTW	8-9	JET	13	6	3760 9182 07
BGM/BTW	8-9	JET	16	6	3760 9182 17
BGM/BTW	9	ECF	13	8	3760 9181 98
BGM/BTW	9	ECF	16	8	3760 9185 98
BGM/BTW	9	JET	13	6	3760 9182 08
BGM/BTW	9	JET	16	6	3760 9182 18
BGM/BTW	10	ECF	13	8	3760 9181 99
BGM/BTW	10	ECF	16	8	3760 9185 99
BGM/BTW	10	JET	13	6	3760 9182 09
BGM/BTW	10	JET	16	6	3760 9182 19

BOTK (Double Tube Thin Kerf)

Size	Matrix	Product Line	Crown Height	Waterways	Part Number
BOTK	2-4	ECF	13	8	3760 9182 21
BOTK	2-4	JET	13	6	3760 9182 31
BOTK	2-4	JET	16	6	3760 9182 41
BOTK	4-6	ECF	13	8	3760 9182 23
BOTK	4-6	JET	13	6	3760 9182 33
BOTK	4-6	JET	16	6	3760 9182 43
BOTK	AZURE	ECF	13	8	3760 9200 33
BOTK	AZURE	JET	13	6	3760 9200 34
BOTK	AZURE	JET	16	6	3760 9200 35
BOTK	5-7	ECF	13	8	3760 9182 24
BOTK	5-7	JET	13	6	3760 9182 34
BOTK	5-7	JET	16	6	3760 9182 44
BOTK	7AC	ECF	10	7	3760 9036 13
BOTK	7AC	ECF	13	9	3760 9043 75
BOTK	7AC	V	10	7	3760 9043 59
BOTK	7AC	V	13	7	3760 9036 00
BOTK	6-8	ECF	13	8	3760 9182 25

 APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

 APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

BOTK (Double Tube Thin Kerf) continued

Size	Matrix	Product Line	Crown Height	Waterways	Part Number
BOTK	6-8	JET	13	6	3760 9182 35
BOTK	6-8	JET	16	6	3760 9182 45
BOTK	7ACF	ECF	10	9	3760 9043 69
BOTK	7ACF	ECF	13	9	3760 9043 76
BOTK	7ACF	V	10	7	3760 9043 60
BOTK	7ACF	V	13	7	3760 9043 67
BOTK	KS(S++)	ECF	13	8	3702 6290 00
BOTK	11AC	ECF	10	9	3760 9043 71
BOTK	11AC	ECF	13	9	3760 9038 74
BOTK	11AC	V	10	7	3760 9043 63
BOTK	11AC	V	13	7	3760 9037 71
BOTK	8-9	ECF	13	8	3760 9182 27
BOTK	8-9	JET	13	6	3760 9182 37
BOTK	8-9	JET	16	6	3760 9182 47
BOTK	9	ECF	13	8	3760 9182 28
BOTK	9	JET	13	6	3760 9182 38
BOTK	9	JET	16	6	3760 9182 48
BOTK	10	ECF	13	8	3760 9182 29
BOTK	10	JET	13	6	3760 9182 39
BOTK	10	JET	16	6	3760 9182 49

NGM (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
NGM	2-4	ECF	13	8	3760 9183 91
NGM	2-4	ECF	16	8	3760 9186 41
NGM	4-6	ECF	13	8	3760 9183 93
NGM	4-6	ECF	16	8	3760 9186 43
NGM	AZURE	ECF	13	8	3760 9200 73
NGM	AZURE	ECF	16	8	3760 9200 74
NGM	5-7	ECF	13	8	3760 9183 94
NGM	5-7	ECF	16	8	3760 9186 44
NGM	6-8	ECF	13	8	3760 9183 95
NGM	6-8	ECF	16	8	3760 9186 45
NGM	8-9	ECF	13	8	3760 9183 97
NGM	8-9	ECF	16	8	3760 9186 47
NGM	9	ECF	13	8	3760 9183 98
NGM	9	ECF	16	8	3760 9186 48
NGM	10	ECF	13	8	3760 9183 99
NGM	10	ECF	16	8	3760 9186 49

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

NTW (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
NTW	2-4	ECF	13	8	3760 9184 01
NTW	2-4	ECF	16	8	3760 9186 51
NTW	4-6	ECF	13	8	3760 9184 03
NTW	4-6	ECF	16	8	3760 9186 53
NTW	AZURE	ECF	13	8	3760 9201 06
NTW	AZURE	ECF	16	8	3760 9201 07
NTW	5-7	ECF	13	8	3760 9184 04
NTW	5-7	ECF	16	8	3760 9186 54
NTW	7AC	V	13	10	3760 9055 13
NTW	6-8	ECF	13	8	3760 9184 05
NTW	6-8	ECF	16	8	3760 9186 55
NTW	7ACF	CF	13	10	3760 9046 08
NTW	7ACF	V	13	10	3760 9040 76
NTW	11AC	ECFWIDE	13	8	3760 9057 29
NTW	11AC	CF	13	10	3760 9039 15
NTW	11AC	V	13	10	3760 9040 77
NTW	8-9	ECF	13	8	3760 9184 07
NTW	8-9	ECF	16	8	3760 9186 57
NTW	9	ECF	13	8	3760 9184 08
NTW	9	ECF	16	8	3760 9186 58
NTW	10	ECF	13	8	3760 9184 09
NTW	10	ECF	16	8	3760 9186 59

HTW (Double Tube Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
HTW	2-4	ECF	13	10	3760 9185 31
HTW	2-4	ECF	16	10	3760 9186 91
HTW	4-6	ECF	13	10	3760 9185 33
HTW	4-6	ECF	16	10	3760 9186 93
HTW	AZURE	ECF	13	10	3760 9200 70
HTW	AZURE	ECF	16	10	3760 9200 71
HTW	5-7	ECF	13	10	3760 9185 34
HTW	5-7	ECF	16	10	3760 9186 94
HTW	6-8	ECF	13	10	3760 9185 35
HTW	6-8	ECF	16	10	3760 9186 95
HTW	7ACF	ECF	10	10	3760 9049 20
HTW	7ACF	ECF	13	10	3760 9054 19
HTW	11AC	ECF	13	10	3760 9054 22
HTW	8-9	ECF	13	10	3760 9185 37
HTW	8-9	ECF	16	10	3760 9186 97
HTW	9	ECF	13	10	3760 9185 38
HTW	9	ECF	16	10	3760 9186 98
HTW	10	ECF	13	10	3760 9185 39
HTW	10	ECF	16	10	3760 9186 99

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

46,8 HAGBY (Wireline Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
46,8HBY	2-4	ECF	13	8	3760 9180 51
46,8HBY	2-4	JET	16	4	3760 91806 1
46,8HBY	4-6	ECF	13	8	3760 9180 53
46,8HBY	4-6	JET	16	4	3760 9180 63
46,8HBY	AZURE	ECF	13	8	3760 9200 01
46,8HBY	AZURE	JET	16	4	3760 9200 02
46,8HBY	5-7	ECF	13	8	3760 9180 54
46,8HBY	5-7	JET	16	4	3760 9180 64
46,8HBY	6-8	ECF	13	8	3760 9180 55
46,8HBY	6-8	JET	16	4	3760 9180 65
46,8HBY	8-9	ECF	13	8	3760 9180 57
46,8HBY	8-9	JET	16	4	3760 9180 67
46,8HBY	9	ECF	13	8	3760 9180 58
46,8HBY	9	JET	16	4	3760 9180 68
46,8HBY	10	ECF	13	8	3760 9180 59
46,8HBY	10	JET	16	4	3760 9180 69

56,6/39 HAGBY (Wireline Thin Wall)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
56,6/39HBY	2-4	ECF	13	10	3760 9180 71
56,6/39HBY	2-4	JET	16	4	3760 9180 81
56,6/39HBY	4-6	ECF	13	10	3760 9180 73
56,6/39HBY	4-6	JET	16	4	3760 9180 83
56,6/39HBY	AZURE	ECF	13	10	3760 9200 07
56,6/39HBY	AZURE	JET	16	4	3760 9200 08
56,6/39HBY	5-7	ECF	13	10	3760 9180 74
56,6/39HBY	5-7	JET	16	4	3760 9180 84
56,6/39HBY	6-8	ECF	13	10	3760 9180 75
56,6/39HBY	6-8	JET	16	4	3760 9180 85
56,6/39HBY	8-9	ECF	13	10	3760 9180 77
56,6/39HBY	8-9	JET	16	4	3760 9180 87
56,6/39HBY	9	ECF	13	10	3760 9180 78
56,6/39HBY	9	JET	16	4	3760 9180 88
56,6/39HBY	10	ECF	13	10	3760 9180 79
56,6/39HBY	10	JET	16	4	3760 9180 89

DEVICO 76 (Wireline Directional Core Drilling)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
DEVICO 76	AZURE	TB	10	6	3760 9200 38
DEVICO 76	6-8	TB	10	6	3760 9188 80
DEVICO 76	KS(S++)	TB	10	6	3702 6940 00
DEVICO 76	8-9	TB	10	6	3760 9189 08
DEVICO 76	9	TB	10	6	3702 6970 00
DEVICO 76	10	TB	10	6	3760 9188 79

 APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

 APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

 APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

WIRELINER DIAMOND IMPREGNATED CORE BITS

AW34 (Conventional Thin Kerf)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
AW34	AZURE	CF	10	8	3760 9200 22
AW34	7ACF	CF	10	8	3760 9038 10
AW34	6-8	CF	13	8	3760 9190 29
AW34	11AC	CF	10	8	3760 9047 16

46TT (Conventional Thin Kerf)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
46TT	2-4	CFF	10	8	3760 9180 01
46TT	4-6	CFF	10	8	3760 9180 03
46TT	AZURE	CFF	10	8	3760 9200 03
46TT	5-7	CFF	10	8	3760 9180 04
46TT	6-8	CFF	10	8	3760 9180 05
46TT	KS(S++)	CFF	10	8	8370 2300 18
46TT	8-9	CFF	10	8	3760 9180 07
46TT	9	CFF	10	8	3760 9180 08
46TT	10	CFF	10	8	3760 9180 09

48TT/LTK48 (Conventional Thin Kerf)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
48TT/LTK48	2-4	CF	13	8	3760 9180 21
48TT/LTK48	2-4	CFF	10	8	3760 9180 11
48TT/LTK48	4-6	CF	13	8	3760 9180 23
48TT/LTK48	4-6	CFF	10	8	3760 9180 13
48TT/LTK48	AZURE	CFF	10	8	3760 9200 04
48TT/LTK48	AZURE	CF	10	8	3760 9200 05
48TT/LTK48	AZURE	CF	13	8	3760 9200 06
48TT/LTK48	5-7	CF	13	8	3760 9180 24
48TT/LTK48	5-7	CFF	10	8	3760 9180 14
48TT/LTK48	7AC	CF	10	6	3760 9031 57
48TT/LTK48	7AC	CF	10	8	3760 9045 69
48TT/LTK48	7AC	CF	13	8	3760 9045 72
48TT/LTK48	6-8	CF	13	8	3760 9180 25
48TT/LTK48	6-8	CFF	10	8	3760 9180 15
48TT/LTK48	7ACF	CF	13	6	3760 9031 58
48TT/LTK48	7ACF	CF	10	8	3760 9045 73
48TT/LTK48	KS(S++)	CFF	10	8	3702 6222 00
48TT/LTK48	KS(S++)	CF	10	8	8370 2300 19
48TT/LTK48	11AC	CF	10	8	3760 9048 95
48TT/LTK48	11AC	CF	13	8	3760 9045 76
48TT/LTK48	8-9	CF	13	8	3760 9180 27
48TT/LTK48	8-9	CFF	10	8	3760 9180 17
48TT/LTK48	9	CF	13	8	3760 9180 28
48TT/LTK48	9	CFF	10	8	3760 9180 18
48TT/LTK48	10	CF	13	8	3760 9180 29
48TT/LTK48	10	CFF	10	8	3760 9180 19

APPLICATION 1 (GREEN)
Soft to medium hard, abrasive and fractured to competent formations.

APPLICATION 2 (BLUE)
Medium to hard, slightly abrasive, slightly fractured to competent formations.

APPLICATION 3 (RED)
Hard to extremely hard, competent formations.

56TT (Conventional Thin Kerf)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
56TT	2-4	CFF	10	10	3760 9180 31
56TT	4-6	CFF	10	10	3760 9180 33
56TT	AZURE	CFF	10	10	3760 9200 09
56TT	5-7	CFF	10	10	3760 9180 34
56TT	6-8	CFF	10	10	3760 9180 35
56TT	KS(S++)	CFF	10	10	8370 23002 0
56TT	8-9	CFF	10	10	3760 9180 37
56TT	9	CFF	10	10	3760 9180 38
56TT	10	CFF	10	10	3760 9180 39

60TT/LTK60 (Conventional Thin Kerf)

Size	Matrix	Crown Profile	Crown Height	Waterways	Part Number
60TT/LTK60	2-4	ECF	13	8	3760 9180 41
60TT/LTK60	4-6	ECF	13	8	3760 9180 43
60TT/LTK60	AZURE	ECF	13	8	3760 9200 10
60TT/LTK60	5-7	ECF	13	8	3760 9180 44
60TT/LTK60	7AC	CF	13	8	3760 9053 22
60TT/LTK60	6-8	ECF	13	8	3760 9180 45
60TT/LTK60	KS(S++)	CF	10	8	3702 6327 00
60TT/LTK60	11AC	CF	13	8	3760 9037 43
60TT/LTK60	8-9	ECF	13	8	3760 9180 47
60TT/LTK60	9	ECF	13	8	3760 9180 48
60TT/LTK60	10	ECF	13	8	3760 9180 49



REAMING SHELL

Jatas Copco

EXCORE 9

Jatas Copco

Wireline Reaming Shells (Heavy Duty)

Size	Diamond Pattern	Design	Application	Part Number
A0	Surface Set	Pads (6" Long)	General	3760 9552 70
A0TK	Surface set	Pads (6" Long)	General	3760 9552 71
ATW/AGM	Surface Set	Pads (6" Long)	General	3760 9552 72
ATW/AGM	Surface Set	Pads Full Hole (6" Long)	Abrasive Formations	3760 9552 69
B0	Surface Set	Pads (6" Long)	General	3760 9552 77
B0	Surface Set	Pads Full Hole (6" Long)	Abrasive Formations	3760 9552 79
B0	Surface Set	Pads Double Ring (10" Long)	Improved Core Barrel Stabilization/Reduced Hole Deviation	3760 9552 76
B0	Surface Set	Pads Triple Ring (18 3/8" Long)	Improved Core Barrel Stabilization/Reduced Hole Deviation	3760 9552 78
B0TK	Surface Set	Pads (6" Long)	General	3760 9552 80
BTW/BGM	Surface set	Pads (6" Long)	General	3760 9552 82
BTW/BGM	Surface Set	Pads Double Ring (10" Long)	Improved Core Barrel Stabilization/Reduced Hole Deviation	3760 9552 74
BTW/BGM	Surface Set	Rib Type	Good for Soft & High Silica/Quartz Formations	3760 9550 82
NO	Surface Set	Pads (6" Long)	General	3760 9552 94
NO	Surface Set	Pads Full Hole (6" Long)	Abrasive Formations	3760 9552 96
NO	Surface Set	Pads Double Ring (10" Long)	Improved Core Barrel Stabilization/Reduced Hole Deviation	3760 9552 92
NO	Surface Set	Pads Triple Ring (18 3/8" Long)	Improved Core Barrel Stabilization/Reduced Hole Deviation	3760 9552 93
NO	Surface Set	Pads Oversize 3.032" (6" Long)	To be used with Oversize Bit	3760 9552 97
NTW	Surface Set	Pads (6" Long)	General	3760 9553 00
NGM	Surface Set	Pads (6" Long)	General	3760 9552 91
DEVICO	Surface Set	Pads	Directional Drilling with Devico Core Barrel	3760 9550 86
HO	Surface Set	Pads (6" Long)	General	3760 9552 84
HO	Surface Set	Pads Full Hole (6" Long)	Abrasive Formations	3760 9552 87
HO	Surface Set	Pads Double Ring (10" Long)	Improved Core Barrel Stabilization/Reduced Hole Deviation	3760 9552 85
HO	Surface Set	Pads Full Hole Oversize 3.850" (6" Long)	To be use with Oversize Bit	3760 9552 83
HTW	Surface Set	Pads (6" Long)	General	3760 9552 88
PO	Surface Set	Pads	General	3760 9553 01
HAGBY 46,8	Surface Set	Pads	General	3760 9552 64
HAGBY 57	Surface Set	Pads	General	3760 9552 66

Conventional Reaming Shells

Size	Diamond Pattern	Design	Application	Part Number
46TT	Surface Set	Pads	General	3760 9552 63
48TT/LTK48	Surface Set	Pads	General	3760 9552 65
48TT/LTK48	Surface Set	Rib Type	Good for Soft & High Silica/Quartz Formations	3760 9551 74
56TT	Surface Set	Pads	General	3760 9552 62
60TT/LTK60	Surface Set	Pads	General	3760 9552 90
AW34	Surface Set	Pads	General	3760 9552 73



**6" Standard
Reaming shell**



**6" Full hole
Reaming shell**



10" Reaming Shell



18" Reaming Shell

ROD SHOES AND CASING SHOES

Casing shoes (to drill with casing)

Size	Matrix	Design	Application	Part Number
AW	IMP	Heavy Duty 8WW	Deep or difficult condition casing drilling	3760 9029 03
BW	IMP	10WW	Shallow casing drilling	3760 9029 06
BW	IMP	Heavy Duty 10WW	Deep or difficult condition casing	3760 9029 05
NW	IMP	12WW	Shallow casing drilling	3760 9029 08
NW	IMP	Heavy Duty 12WW	Deep or difficult condition casing drilling	3760 9029 07
HW	IMP	14WW	Shallow casing drilling	3760 9029 10
HW	IMP	Heavy Duty 14WW	Deep or difficult condition casing	3760 9029 09
HWT	IMP	Heavy Duty 6WW	Deep or difficult condition casing drilling	3760 9016 48
PW	IMP	Heavy Duty 8WW	Deep or difficult condition casing drilling	3760 9006 69
PWT	IMP	Heavy Duty	Deep or difficult condition casing drilling	3760 9056 71



Rod shoes (same as casing shoe but with rod thread)

Size	Matrix	Design	Application	Part Number
BO	IMP	Standard	Shallow Casing Drilling	3760 9023 07
BMO	IMP	Heavy Duty	Deep or difficult condition casing drilling	3760 9055 90
NO	IMP	Standard	Shallow Casing Drilling	3760 9007 24
NO	IMP	Heavy Duty	Deep or difficult condition casing drilling	3760 9007 25
NT	IMP	Heavy Duty	Deep or difficult condition casing drilling	3761 0014 96
NMO	IMP	Heavy Duty	Deep or difficult condition casing drilling	3760 9055 91
NTW	IMP	Standard	Shallow Casing Drilling	3760 9021 33
HO	IMP	Heavy Duty 3.615" OD x 2.992" ID	Deep or difficult condition casing drilling	3760 9007 23
HT	IMP	Heavy Duty, 3.615" OD x 2.992" ID	Deep or difficult condition casing drilling	3761 0014 97
HMO	IMP	Heavy Duty, 3.615" OD x 2.992" ID	Deep or difficult condition casing drilling	3760 9055 92
PO	IMP	Standard	Deep or difficult condition casing drilling	3760 9007 26
PT	IMP	Heavy Duty	Deep or difficult condition casing drilling	3761 0014 98



Casing bit (Casing shoe with regular bit kerf)

Size	Matrix	Design	Application	Part Number
BW/NO	IMP	Standard	Deep or difficult condition casing drilling	3761 0012 23
BW/NO	IMP	Heavy Duty	Deep & Extremely Difficult Condition	3761 0012 24
NW/HO	IMP	Standard	Deep or difficult condition casing drilling	3761 0012 21
NW/HO	IMP	Heavy Duty	Deep & Extremely Difficult Condition	3761 0012 22



Casing shoe / Rod Shoe

Casing Shoe	Rod Shoe	ID		OD	
		mm	in	mm	in
AW	BO, BMO	48.3	1.90	59.7	2.35
BW	NO, NT, NMO	60.2	2.37	75.4	2.97
NW	HO, HT, HMO	76.0	2.99	91.9	3.62
HW, HWT	PO, PT	99.8	3.93	117.6	4.63
PW, PWT		122.9	4.84	143.8	5.66

Casing bit

Casing Bit	ID		OD	
	mm	in	mm	in
BW	47.6	1.87	75.4	2.97
NW	76.0	2.99	95.6	3.76
HW, HWT	99.8	3.93	121.0	4.76

Inner Diameter Gauges For Bits

Item	Size	Description	Part Number
ID Bit Gauge	A0, B0, N0, H0, P0	Pyramide type inner diameter bit gauge	376 09172 55
ID Bit Gauge	AGM, N02, N03/N0TT, H03/H0TT, P03	Pyramide type inner diameter bit gauge	376 09172 56
ID Bit Gauge	ATW, BTW/BGM, NTW/NGM, HTW	Pyramide type inner diameter bit gauge	376 09172 54

**Outer Diameter Gauges For Bits**

Item	Size	Description	Part Number
OD Bit Gauge	A0, ATW, AGM, TT/LTK48	Ring type GO - NO GO minimum outer diameter bit gauge	3760 9172 57
OD Bit gauge	B0, BTW/BGM, TT/LTK60	Ring type GO - NO GO minimum outer diameter bit gauge	3760 9172 59
OD Bit gauge	N0, N02, NTW/NGM, N03, N0TT	Ring type GO - NO GO minimum outer diameter bit gauge	3760 9172 61
OD Bit gauge	H0, H03, HTW, H0TT	Ring type GO - NO GO minimum outer diameter bit gauge	3760 9172 63
OD Bit gauge	P0, P03	Ring type GO - NO GO minimum outer diameter bit gauge	3760 9172 65

**Outer Diameter Gauges For Reaming Shells**

Item	Size	Description	Part Number
OD RShell Gauge	A0, ATW, AGM, TT/LTK48	Ring type GO - NO GO minimum outer diameter rshell gauge	3760 9172 58
OD RShell Gauge	B0, BTW/BGM, TT/LTK60	Ring type GO - NO GO minimum outer diameter rshell gauge	3760 9172 60
OD RShell Gauge	N0, N02, NTW/NGM, N03, N0TT	Ring type GO - NO GO minimum outer diameter rshell gauge	3760 9172 62
OD RShell Gauge	H0, H03, HTW, H0TT	Ring type GO - NO GO minimum outer diameter rshell gauge	3760 9172 64
OD RShell Gauge	P0, P03	Ring type GO - NO GO minimum outer diameter rshell gauge	3760 9172 66

**Professional Diamond Driller's Handbook**

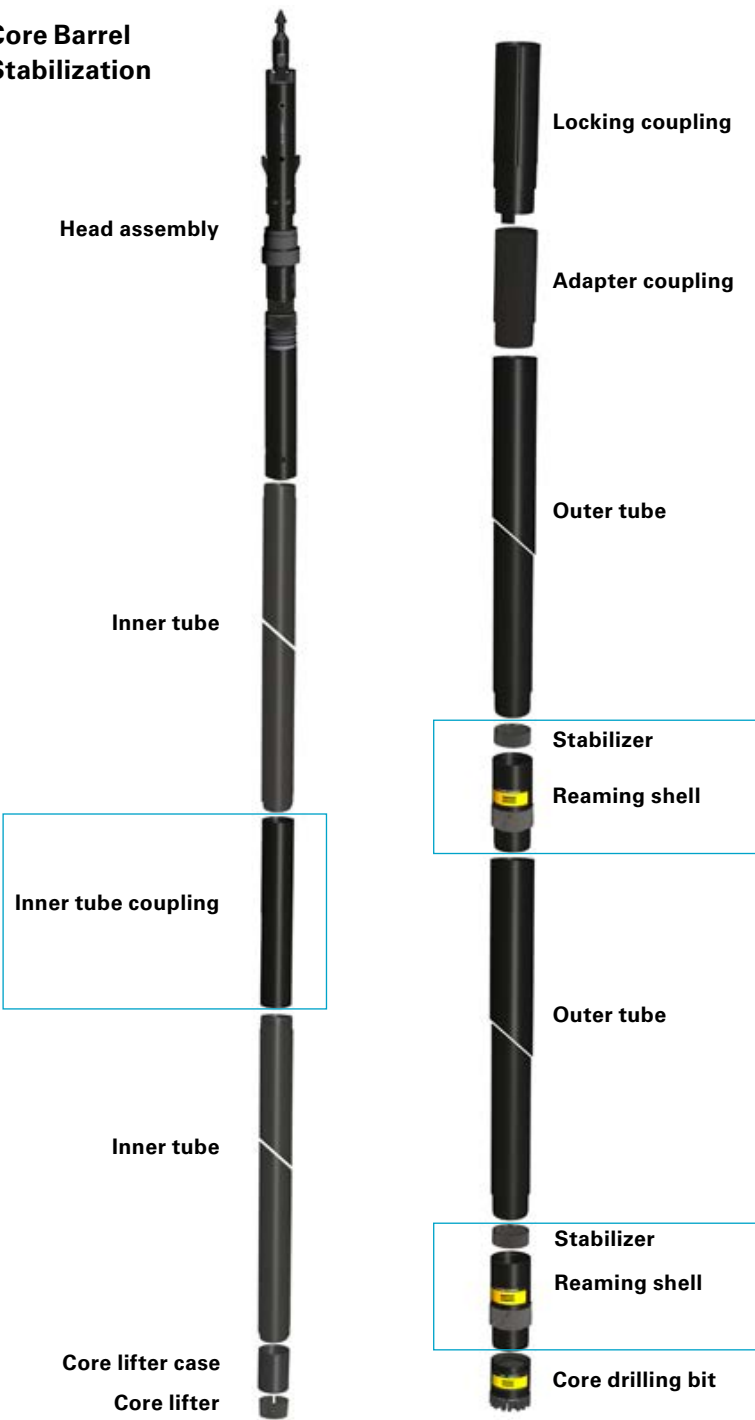
Item	Part Number
English	6991 1772 01
French	6991 1772 03
Russian	6991 1772 13
Spanish	6991 1772 56

**Bit Testing Tool Box**

Item	Part Number
Tool Box Kit Complete	3760 9172 93
Flow Meter & Fittings	Permanent Marker
Tachometer	Digital Caliper
Rock Hardness Scratch Picks	Knife & Measure Tape
Bit & Rshell Od Gauges (B, N & H)	

ACCESSORIES

Core Barrel Stabilization



The best core barrel stabilization to minimize hole deviation using standard products

- 3 support points for 3m (10') or 6m (20') core barrel distributed evenly on its entire length.
- Standard 6" reaming shell above bit, locking coupling & standard 6" reaming shell in the middle of core barrel between two 1.5m (5') or 3m (10') outer tubes stabilize core barrel in best possible way.
- To modify 3m (10') or 6m (20') core barrel, standard 6" reaming shell together with inner tube coupling needs to be placed between standard 1.5m (5') or 3m (10') outer tubes. To compensate this additional reaming shell length, inner tube coupling needs to be installed between 1.5m (5') or 3m (10') standard inner tubes. The only exception is for N02 size, where inner tube extension should be placed between head assembly and standard inner tube.

Inner Tube Couplings to compensate lenght of 6" long core barrel stabilizing reaming shell

Item	Part Number
A0TW Inner Tube Coupling - stabilizing shell compensation	37600 150 04
B0 Inner Tube Coupling - stabilizing shell compensation	37600 150 06
B0TW Inner Tube Coupling - stabilizing shell compensation	37600 150 07
N0 Inner Tube Coupling - stabilizing shell compensation	37600 150 08
N02 Inner Tube Extension - stabilizing shell compensation	37600 150 09
NTW Inner Tube Coupling - stabilizing shell compensation	37600 150 10
H0 Inner Tube Coupling- stabilizing shell compensation	37600 150 11
P0 Inner Tube Coupling - stabilizing shell compensation	37600 150 12

Locking Couplings with diamond rings - surface/vertical down drilling (increased life & core barrel stabilization)

Size	Thread	Application	Core Barrel Design	Blank Type	Latching end	Part Number
B	BO	Surface drilling	Any	Standard	1 long Tang	3760 0120 83
B	BT	Surface drilling	Any	Standard	1 long Tang	3760 0120 85
B	BMO	Surface drilling	Any	Standard	1 long Tang	3760 0151 76
N	NO	Surface drilling	Any	Full Hole	1 long Tang	3760 0165 09
N	NT	Surface drilling	Any	Full Hole	1 long Tang	3760 0165 10
N	NMO	Surface drilling	Any	Full Hole	1 long Tang	3760 0165 11
H	HO	Surface drilling	Any	Full Hole	1 long Tang	3760 0164 97
H	HT	Surface drilling	Any	Full Hole	1 long Tang	3760 0164 96
H	HMO	Surface drilling	Any	Full Hole	1 long Tang	3760 0164 95
P	PO	Surface drilling	Any	Standard	1 long Tang	3760 0151 73
P	PT	Surface drilling	Any	Standard	1 long Tang	3760 0151 74
P	HWT	Surface drilling	Any	Standard	1 long Tang	3760 0151 75



Locking Couplings with diamond rings for O-series type core barrels Underground/horizontal-uphole drilling (increased life & core barrel stabilization)

Size	Thread	Application	Core Barrel Design	Blank Type	Latching end	Part Number
B	BO	Underground drilling	O-Series	Standard	No Tang	3760 0120 84
B	BT	Underground drilling	O-Series	Standard	No Tang	3760 0120 86
B	BMO	Underground drilling	O-Series	Standard	No Tang	3760 0157 17
N	NO	Underground drilling	O-Series	Full Hole	No Tang	3760 0165 17
N	NT	Underground drilling	O-Series	Full Hole	No Tang	3760 0165 18
N	NMO	Underground drilling	O-Series	Full Hole	No Tang	3760 0165 19
H	HO	Underground drilling	O-Series	Full Hole	No Tang	3760 0165 03
H	HT	Underground drilling	O-Series	Full Hole	No Tang	3760 0165 04
H	HMO	Underground drilling	O-Series	Full Hole	No Tang	3760 0165 05



Locking Couplings with diamond rings for Excore series type core barrels Underground/horizontal-uphole drilling (increased life & core barrel stabilization)

Size	Thread	Application	Core Barrel Design	Blank Type	Latching end	Part Number
B	BO	Underground drilling	Excore	Standard	2 short Tangs	3760 0157 15
B	BT	Underground drilling	Excore	Standard	2 short Tangs	3760 0120 86
B	BMO	Underground drilling	Excore	Standard	2 short Tangs	3760 0157 17
N	NO	Underground drilling	Excore	Full Hole	2 short Tangs	3760 0165 13
N	NT	Underground drilling	Excore	Full Hole	2 short Tangs	3760 0165 14
N	NMO	Underground drilling	Excore	Full Hole	2 short Tangs	3760 0165 15
H	HO	Underground drilling	Excore	Full Hole	2 short Tangs	3760 0164 99
H	HT	Underground drilling	Excore	Full Hole	2 short Tangs	3760 0165 00
H	HMO	Underground drilling	Excore	Full Hole	2 short Tangs	3760 0165 01



Adapter Couplings (Back Ends) with diamond rings (increased life & core barrel stabilization)

Size	Application	Core Barrel Design	OD Gauge	Diamond Ring	Part Number
N	Surface drilling	Any	Standard	Surface Set	3760 9038 06
N	Surface drilling	Any	Oversize	Impregnated	3760 9046 09
H	Surface drilling	Any	Standard	Surface Set	3760 9006 50



RECOMMENDATIONS FOR MATRIX REPLACEMENT

Rock Group	Matrices	Discontinued		Alternative Key Matrix
1-4	CRAELIUS	SC2	→	2-4
	HOBIC	2AO	→	2-4
	HOBIC	2C.1	→	2-4
	HOBIC	2F	→	2-4
	HOBIC	3AC	→	2-4
5	CRAELIUS	SC4-5	→	4-6
	HOBIC	3J	→	4-6
	HOBIC	4-6	→	4-6
	CRAELIUS	SC5-6	→	4-6
	HOBIC	5AC	→	4-6
6	HOBIC	7KC	→	7AA.6
	HOBIC	7SA	→	7AC
	HOBIC	7D	→	7AC
7	HOBIC	7A	→	7AC"F"
	CRAELIUS	KX	→	6-8
	CRAELIUS	SC6-8	→	6-8
	CRAELIUS	KM	→	6-8
	CRAELIUS	HM	→	6-8
	HOBIC	7C	→	7AC"F"
	HOBIC	8A.4	→	8A.2
	HOBIC	8A.5	→	8A.2
	HOBIC	8A.6	→	8A.2
	HOBIC	8E	→	8A.2
	HOBIC	8N	→	8A.2
	HOBIC	8AC	→	6-8
	HOBIC	9H	→	8A.2
	HOBIC	10E.4	→	8A.2
8	CRAELIUS	SC8-9	→	8-9
	CRAELIUS	KS	→	8-9
	HOBIC	9AC	→	11AC
	HOBIC	10K	→	KS(S++)
	HOBIC	10S	→	KS(S++)
	HOBIC	13AC	→	8-9
9	CRAELIUS	SC9-10	→	9
	CRAELIUS	SC10	→	9
	HOBIC	12/14	→	11AC
	HOBIC	12AC	→	11AC
	HOBIC	15AC	→	9
	HOBIC	14/15	→	9
10	CRAELIUS	SC10EXT	→	10

CONVERSION FACTORS

NOTES

This unit	Times	Equals
Length		
mm (millimetres)	x 0.001	=m
cm (centimetres)	x 0.01	=m
dm (decimetres)	x 0.1	=m
km (kilometres)	x 1000	=m
in (inches)	x 25.4	=m
ft (feet)	x 0.305	=m
yd (yard)	x 0.914	=m
miles	x 1609	=m

This unit	Times	Equals
Power		
kW (kilowatts)	x 1000	= W
Horsepower (metric)	x 735.5	= W
Horsepower (UK)	x 745.7	= W
ft.lbf/sec	x 1.36	= W
Btu/h	x 0.29	= W

This unit	Times	Equals
Volume		
l(litres)	x 0.001	= m3
ml (millilitres)	x 0.001	= l
dm ³ (cubic desimetres)	x 1.0	= l
cm ³ (cubic centimetres)	x 1.0	= ml
mm ³ (cubic milimetres)	x 0.001	= ml
in ³ (cubic inches)	x 16.39	= ml
ft ³ (cubic feet)	x 28.316	= l
Imperial gallon	x 4.546	= l
U.S gallon	x 3.785	= l
Ounces (Imp. fluid liq.)	x 28.41	= ml
Ounces (US liq.)	x 29.57	= ml
Pints (US liq.)	x 0.4732	= l
Quarts (US liq)	x 0.9463	= l
yd ³ (cubic yards)	x 0.7646	= m3

This unit	Times	Equals
Area		
mm ² (square mm)	x 0.000001	= m ²
cm ² (square cm)	x 0.00001	= m ²
in ² (square inch)	x 645	= mm ²
ft ² (square feet)	x 0.929	= m ²
yd ² (square yard)	x 0.8361	= m ²
Acres	x 4047	= m ²
Square miles	x 2.590	= km ²

This unit	Times	Equals
Mass (Weight)		
g (grammes)	x 0.001	= kg
t (tonnes, metric)	x 1000	= kg
grains	x 0.0648	= kg
oz (ounces)	x 28.35	= g
lb (pounds)	x 0.4536	= g
tons (long,US)	x 1016	= kg
tons (UK)	x 1016	= kg
tons (short)	x 907	= kg

This unit	Times	Equals
Speed		
km/h (kilometers/hour)	x 0.2777	= m/s
m/s	x 3.6	= km/h
mph (miles/hour)	x 0.45	= m/s
ft/s (foot/second)	x 0.3048	= m/s
ft/s (foot/second)	x 18.29	= ft/min
ft/min (foot/minute)	x 0.3048	= m/min

This unit	Times	Equals
Frequency		
blows/minute	x 0.017	= Hz
khz (kiloHertz)	x 1000	= Hz
r/min (rev./minute)	x 0.1667	= r/s
degrees/seconds	x 0.1667	= r/min
radians/second	x 0.1592	= r/s

This unit	Times	Equals
Pressure		
bar	x 100	= kPa
bar	x 100 000	= Pa
kp/cm ²	x 0.98	= bar
atm (atmospheres)	x 1.01	= bar
psi (pounds/in ²)	x 6.895	=kPa
psi	x 0.06895	= bar

This unit	Times	Equals
Force		
kN (kilonewton)	x 1000	N
kp (kilopond)	x 9.81	N
kgf (kilogramme force)	x 4.45	N

This unit	Times	Equals
Torque		
kpm (kilopondmetres)	x 9.81	Nm
lbf/in (pondforce/inch)	x 0.11	Nm
lbf/ft (poundforce/foot)	x 1.36	Nm

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